OECD/INFE 2023 international survey of adult financial literacy

Note by the Republic of Türkiye

The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Türkiye recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Türkiye shall preserve its position concerning the "Cyprus issue".

Note by all the European Union Member States of the OECD and the European Union

The Republic of Cyprus is recognised by all members of the United Nations with the exception of Türkiye. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Foreword

As indicated in the OECD Recommendation on Financial Literacy, assessing levels of financial literacy is a key step in creating a successful national strategy for financial literacy (OECD, 2020[1]). Collecting data on financial literacy levels using an internationally comparable survey instrument through a coordinated exercise enables countries and economies to benchmark themselves, identify common patterns and work together to find solutions for improving financial literacy and measure progress among their adult populations.

Some 39 countries and economies, including 20 OECD Member countries and 8 G20 members, participated in this third coordinated measurement exercise using the globally recognised OECD/INFE 2022 Toolkit for Measuring Financial Literacy and Financial Inclusion (OECD, 2022[2]) to measure financial literacy levels among their adult populations. The results provide information about financial literacy levels covering aspects of financial knowledge, financial behaviour and financial attitudes. In addition, the findings also provide information about financial product holding, digital financial literacy levels and levels of financial well-being among adults in the participating countries and economies.

This publication was prepared by Federica D'Agostino and Rachel Karen under the supervision of Chiara Monticone, with oversight from Miles Larbey in the Capital Markets and Financial Institutions Division of the OECD Directorate for Financial and Enterprise Affairs. Editing support was provided by Jennah Huxley in the Capital Markets and Financial Institutions Division of the OECD Directorate for Financial and Enterprise Affairs. In most participating countries and economies, data collection was undertaken by national or regional authorities or research institutions. Data for some countries was collected by the OECD in the framework of technical assistance or regional projects (Cambodia, Cyprus, Greece, the Philippines and Yemen), with support from donors (the European Commission and the Government of Japan). The OECD Secretariat would like to thank all countries and economies that participated in this important exercise.

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Executive Summary

Financial literacy has been recognised at a global level as a core life skill in the 21st century, one that is essential for the empowerment of individuals and for supporting individual and societies' financial well-being (G20, 2021[3]). Important developments since the publication of the OECD/INFE 2020 International Survey of Adult Financial Literacy highlight the continued need to strengthen financial literacy to support the financial well-being of individuals and households (OECD, 2020[4]). Such developments include the experience of the COVID-19 pandemic, increased cost-of-living pressures stemming from pandemic-related disruptions and Russia's invasion of Ukraine and the current context of high inflation and rising interest rates. Furthermore, the spread of digital financial services, that accelerated during the COVID-19 pandemic, underscores the need to equip individuals with adequate knowledge and skills to use such products and services safely. Other recent developments in the financial landscape, including a growing interest in and use of crypto-assets, new and alternative forms of financial advice (e.g. finfluencers), and the increased incidence and complexity of financial frauds and scams, also highlight the need to strengthen financial literacy skills among adults to help them make sound financial decisions.

As stated by the OECD Recommendation on Financial Literacy, collecting reliable and internationally comparable data to measure the financial literacy of adults is a key step in creating successful financial literacy national strategies and programmes (OECD, 2020[1]). Such data can provide evidence of the areas in which financial knowledge and skills need to be improved and of the groups of adults who need financial literacy the most. Repeated measures of financial literacy also help identify trends, indicate where improvements have been made, and what more needs to be done.

Some 39 countries and economies, including 20 OECD Member countries and 8 G20 countries, participated in this third international survey of financial literacy levels using the 2022 OECD/INFE Toolkit for Measuring Financial Literacy and Financial Inclusion. This report presents average levels of financial literacy and digital financial literacy, computed following the OECD/INFE methodology, and how they vary across and within countries and economies. The report also presents evidence on levels of financial well-being. Policy suggestions are presented at the end of the report.

Financial literacy levels can be improved to support sound financial decisions in challenging economic contexts

- Financial literacy is a combination of financial awareness, knowledge, skills, attitudes and behaviours necessary to make sound financial decisions and ultimately achieve individual financial well-being (OECD, 2020[1]). Results suggest that among many adults the understanding of certain basic financial concepts and the application of basic financial skills may not be sufficient to take sound financial decisions in challenging economic contexts, such as the current landscape characterised by cost of living pressures in many countries.
- The average financial literacy score across all participating countries and economies is 60 out of 100 points (63 out of 100 across participating OECD countries). On average across all participating countries and economies, only 34% of adults reached the minimum target score on financial

literacy, defined as scoring at least 70 out of 100 points (39% across participating OECD countries). Adults who have attained a higher level of formal education, adults with higher incomes, as well as adults who are employed have higher levels of financial literacy in many participating countries and economies.

- In terms of financial knowledge, some 84% of adults understand the definition of inflation, but only 63% can apply the concept of time value of money to their own savings, on average across participating countries and economies. The percentage of adults who understand the time value of money has increased in all countries with comparable data since the previous assessment in 2019, potentially due to the context of high inflation in many participating countries at the time when the survey took place. Furthermore, findings show that some 77% of adults understand the relationship between risk and reward, yet only 42% of adults can correctly answer a question about compound interest, on average across participating countries and economies. Even among adults who hold savings products across participating countries and economies, only 46% understand compound interest.
- In terms of financial behaviour, on average across participating countries and economies, 70% of adults report that they carefully consider if they can afford something before buying it. However, only 26% of adults compare financial products across providers and only 24% of adults seek advice from independent sources when purchasing financial products and services.
- On average across participating countries and economies, 15% of adults reported that they have been a victim of at least one type of financial frauds or scams such as phishing scams, scams involving personal information, investment scams, and unauthorized or unrecognized transactions. Across all participating countries and economies, around two out of three adults who have been a victim of one of these types of financial frauds or scams do not reach the minimum target financial literacy score.

Digital financial literacy levels may not be sufficient in light of the opportunities and risks posed by digital financial services

- Digital financial literacy is a combination of knowledge, skills, attitudes and behaviours necessary for individuals to be aware of and safely use digital financial services and digital technologies with a view to contributing to their financial well-being (OECD, 2022[5]). Digital financial literacy is a specific area of overall financial literacy. The findings in this report show that many adults may not display sufficient knowledge and skills to use digital products and services safely.
- The average score relating to digital financial literacy across all participating countries and economies is 53 out of 100 points (55 out of 100 across participating OECD countries). On average across all participating countries and economies, only 29% of adults reach the minimum target score of at least 70 points out of 100 on digital financial literacy (34% across participating OECD countries). Digital financial literacy levels are significantly higher among adults who have higher incomes and higher levels of education.
- On average across participating countries and economies, most adults (86%) report that they do not share PINs and passwords of their bank accounts with close friends, however only 49% recognise that it is unsafe to shop online using public Wi-Fi networks. Only 54% understand that the personal data they share online can be used to target them with personalized commercial or financial offers.
- On average across participating countries and economies, 38% of adults who report to manage financial products and services online reach the minimum target score on digital financial literacy. Some 41% of adults on average across participating countries and economies understand that crypto-currencies are not legal tender.

Higher financial literacy is associated with greater individual financial well-being

- The OECD Recommendation on Financial Literacy recognises individual financial well-being as the ultimate goal of financial literacy policies and programmes (OECD, 2020[1]).
- Across participating countries and economies, the average financial well-being score is 42 out of 100 points (47 out of 100 across participating OECD countries).
- One important element of financial well-being is financial resilience, which refers to the ability to cope with negative financial shocks. On average across participating countries and economies, only 54% of adults report that they would be able to pay a major expense, equivalent to one month of income, without borrowing or asking friends and family to help. Only 43% of adults across participating countries and economies report that they could cover their living expenses for at least three months if they lost their main source of income.
- Another dimension of financial well-being relates to individuals' subjective perceptions of their personal financial situation. On average across participating countries and economies, only 29% of adults report that they do not worry about their living expenses and 35% of adults do not feel that finances control their lives.
- Financial well-being and financial resilience levels are significantly higher among adults with higher incomes compared to adults with lower incomes.
- Adults who reach the minimum target score on financial literacy also have higher levels of financial well-being (by 10 points out of 100 on average across participating countries and economies) and of financial resilience (by 12 points out of 100) than adults who scored below the minimum target financial literacy score, after taking into account individual socio-economic characteristics.

Evidence in this report highlights areas where policymakers can focus their financial literacy policies and programmes

Based on the evidence presented in this report, it is possible to draw a series of policy suggestions for policymakers and stakeholders to consider as they develop financial literacy national strategies and programmes. These policy suggestions are to:

- Continue to improve basic financial knowledge to support sound financial decisions in the current economic context.
- Design programmes and strategies to strengthen behaviours and attitudes that are more likely to support financial resilience and financial well-being.
- Improve digital financial literacy to support the safe use of digital financial products and services.
- Continue to support people with the lowest financial literacy, digital financial literacy and well-being.
- Continue to collect and analyse evidence on financial literacy, including with a focus on digital financial literacy, to make sure that financial literacy policies and programmes support individual financial well-being.

1 Introduction

Background

Financial literacy has been recognized at a global level as a core life skill, one that is essential for the empowerment of individuals and for supporting individual and societies' financial well-being (G20, 2021[3]). Financial literacy policies and programmes also can improve financial well-being by helping individuals to make informed decisions and develop greater control and confidence over personal financial matters.

As stated by the OECD Recommendation on Financial Literacy, national strategies for financial literacy should be based on relevant evidence and analysis in order to determine policy priorities and objectives, and to ensure that they remain relevant and up-to-date (OECD, 2020[1]). Collecting reliable and internationally comparable data to measure financial literacy levels of populations is a crucial way to develop and evaluate effective financial education policies and programmes. Such data can provide evidence of the areas in which financial knowledge and skills need to be improved and of the groups of adults who need financial literacy the most. Repeated measures of financial literacy also help indicate where improvements have been made and what more needs to be done. They also provide the additional benefit of knowing how countries and economies compare on key dimensions of financial literacy to help identify those with successful financial education policies and those facing similar challenges, and in doing so, to share experience about effective solutions.

The OECD International Network on Financial Education (OECD/INFE) is committed to measuring and assessing financial literacy levels around the globe through coordinated measurement exercises. Some 39 countries and economies, including 20 OECD Member countries and 8 G20 countries, drawn from Asia, Europe and Latin America participated in this third international survey of financial literacy levels using the globally recognized OECD/INFE Toolkit for Measuring Financial Literacy and Financial Inclusion. This report presents the findings of this third coordinated measurement exercise.

The OECD/INFE Toolkit to measure financial literacy and previous assessments

The OECD/INFE has been committed to undertaking internationally comparable measurements of financial literacy via coordinated surveys since 2009. The first survey instrument to measure levels of financial literacy was developed in 2010 via a dedicated working group and drew on an OECD working paper (Kempson, 2009[6]), national surveys, international research and expert advice. The initial questionnaire to measure financial literacy (the “Toolkit”) was first piloted in 2010 as part of the first OECD/INFE International Financial Literacy and Financial Inclusion Measurement Exercise, which led to the publication of the working paper “Measuring Financial Literacy: Results of the OECD/INFE Pilot Study” (Atkinson and Messy, 2012[7]). The Toolkit was welcomed by G20 leaders in September 2013.

The Toolkit was revised in 2015 and used in 2015/16 in a second round of data collection on adult financial literacy competencies. Results were published for a first set of 30 countries and economies in the OECD/INFE International Survey of Adult Financial Literacy Competencies (OECD, 2016[8]). A complementary report was later released focusing on the G20 (OECD, 2017[9]).

A subsequent revision of the Toolkit took place in 2018 with the aim of updating content and enlarging its scope to also cover financial well-being, which is a goal of financial literacy. The 2018 version of the Toolkit was used for an international survey of adult financial literacy competencies in 2019/20. Results were published in the OECD/INFE 2020 International Survey of Adult Financial Literacy (OECD, 2020[4]).

In addition to these internationally coordinated measurement exercises, the Toolkit has also been used to collect financial literacy data in a variety of technical assistance projects implemented by the OECD such as in the Commonwealth of Independent States (OECD, 2021[10]) and in South East Europe (OECD, 2018[11]). Several countries developed or revised their national strategies for financial literacy using evidence collected via the OECD/INFE Toolkit (OECD, 2021[12]; OECD, 2023[13]; Portugal, 2022[14]; CNMV, Banco de España and Ministry of Economy, 2022[15]; Italian Committee for Financial Education, 2017[16]). In addition, the Toolkit has also been used in country- or region-specific projects including Europe (Fessler, Jelovsek and Silgoner, 2020[17]), Latin America (Mejía and Rodríguez Guzmán, 2016[18]), Asia (Morgan and Trinh, 2019[19]; Morgan and Trinh, 2017[20])and Africa (Roberts et al., 2018[21]).

The OECD/INFE Toolkit for Measuring Financial Literacy and Financial Inclusion 2022 represents the latest version of the questionnaire and is the one used as the basis of this report. As in previous versions, the 2022 questionnaire collects information on financial literacy and related elements such as financial product holding, financial resilience and financial well-being. Moreover, the size and nature of the consumer financial services market has grown and changed considerably since the round of data collection in 2015/16, with new financial products and services along with increased digitalisation of the financial sector. The 2022 version of the questionnaire therefore includes questions to measure digital financial literacy across the three components of knowledge, behaviour and attitudes. It also includes questions about holding and use of digital financial products and services, holding sustainable finance products and attitudes toward sustainable finance.

About this Report

This report provides an overview and analysis of financial literacy data collected across 39 participating countries and economies, of which 20 are OECD Member countries, representing 68,826 total respondents of adults aged 18-79. The data used in this report are drawn from national surveys undertaken using the 2022 OECD/INFE Toolkit and submitted to the OECD as part of a coordinated measurement exercise. Data for some countries was collected in the framework of technical assistance or regional projects (Cambodia, Cyprus, Greece, the Philippines and Yemen), with support from donors (the European Commission and the Government of Japan). The use of a common instrument designed to be applicable in countries at different stages of economic development and with all population groups makes it possible to compare results across countries and explore patterns in financial literacy across socio-demographic groups within countries. Findings can help identify common patterns that may indicate shared challenges and/or effective solutions.

This report consists of:

- Chapter I. Overall levels of financial literacy
  - Levels of financial literacy
  - Financial knowledge
  - Financial behaviours
  - Financial attitudes
  - Changes in levels of financial knowledge over time
  - Variation in financial literacy levels across socio-demographic groups

  - Background information on levels of financial product holding and individual experiences in the financial marketplace, in relation to financial literacy levels
- Chapter II. Digital financial literacy
  - Digital financial literacy
  - Variation in digital financial literacy across socio-demographic groups
  - Background information on the use of digital devices and digital financial services, in relation to digital financial literacy levels
- Chapter III. Financial well-being
  - Financial well-being
  - Variation in financial well-being across socio-demographic groups
  - Changes in levels of financial resilience over time
- Chapter IV. Policy conclusions

Every effort has been taken to ensure that the country-level data are comparable, however differences in sampling and data collection methods should be noted when considering the results.

It should also be noted that “overall averages” or “OECD averages” reported in this report correspond to the arithmetic means of the respective country/economy estimates. These two estimates were calculated for most indicators presented in this report. In the case of some participating countries and economies, data may not be available for specific indicators, or specific categories may not apply. It should therefore be kept in mind that the terms “overall average” or “OECD average” refer to the countries or economies with available data included in the respective comparisons.

More information about country-level data collection, the survey instrument, and the methodology used to construct financial literacy scores can be found in the Annexes:

- Annex A provides information about data collection in participating countries and economies.
- Annex B provides descriptive statistics about the sample in participating countries and economies including the age, gender, education level, geographic location (urban versus rural), occupational status and income level of respondents.
- Annex C contains information on how the financial literacy scores, digital financial literacy scores and financial well-being scores have been computed.
- Annex D includes data tables for all figures included in this Report.

2 Financial literacy and its components

Key results

- The average financial literacy score across all participating countries and economies is 60 out of 100 points (63 out of 100 across participating OECD countries).
- *Financial knowledge*: The average financial knowledge score across all participating countries and economies is 63 out of 100 points (67 out of 100 across participating OECD countries). Across participating countries and economies, 84% of adults understand the definition of inflation, however, only 63% can apply the concept of time value of money to their own savings. Furthermore, findings show that some 77% of adults understand the relationship between risk and reward, yet only 42% of adults can correctly answer a question about compound interest. Even among adults who hold savings products across participating countries and economies, only 46% understand compound interest.
- *Financial behaviour*: The average financial behaviour score across all participating countries and economies is 61 out of 100 points (62 out of 100 across participating OECD countries). Across participating countries and economies, 70% of adults report that they carefully consider if they can afford something before buying it. However, only 26% of adults compare financial products across providers and only 24% of adults seek advice from independent sources when purchasing financial products and services.
- *Financial attitudes*: The average financial attitude score across all participating countries and economies is 56 out of 100 points (58 out of 100 across participating OECD countries).
- Adults who have attained a higher level of formal education, adults with higher incomes, as well as adults who are employed have higher levels of financial literacy in many participating countries and economies.
- Across many participating countries and economies, a majority of adults (63%) who hold any type of financial product do not score at the minimum target financial literacy score (at least 70 out of 100 points).
- On average across participating countries and economies, 15% of adults reported that they have been a victim of at least one type of financial frauds or scams such as phishing scams, scams involving personal information, investment scams, and unauthorized or unrecognized transactions. Across all participating countries and economies, around two out of three adults who have been a victim of one of these types of financial frauds or scams do not reach the minimum target financial literacy score.

Financial literacy is defined by the OECD is a combination of “financial awareness, knowledge, skills, attitudes and behaviours necessary to make sound financial decision and ultimately achieve financial well-being” (OECD, 2022[22]). Financial literacy can enable individuals to make informed financial decisions and develop greater control over personal financial matters. Financial literacy can also help individuals to avoid financial scams and have the confidence to navigate new aspects of the financial landscape. Moreover, financial literacy can encourage savings and investment for individuals to manage short-term income fluctuations and reach longer-term financial goals.

This chapter focuses on overall levels of financial literacy across participating countries and economies. It presents average financial literacy levels and describes financial behaviours, financial knowledge and financial attitudes – the three key components of financial literacy - across participating countries and economies. Findings also reveal differences in financial literacy levels by socio-demographic groups.

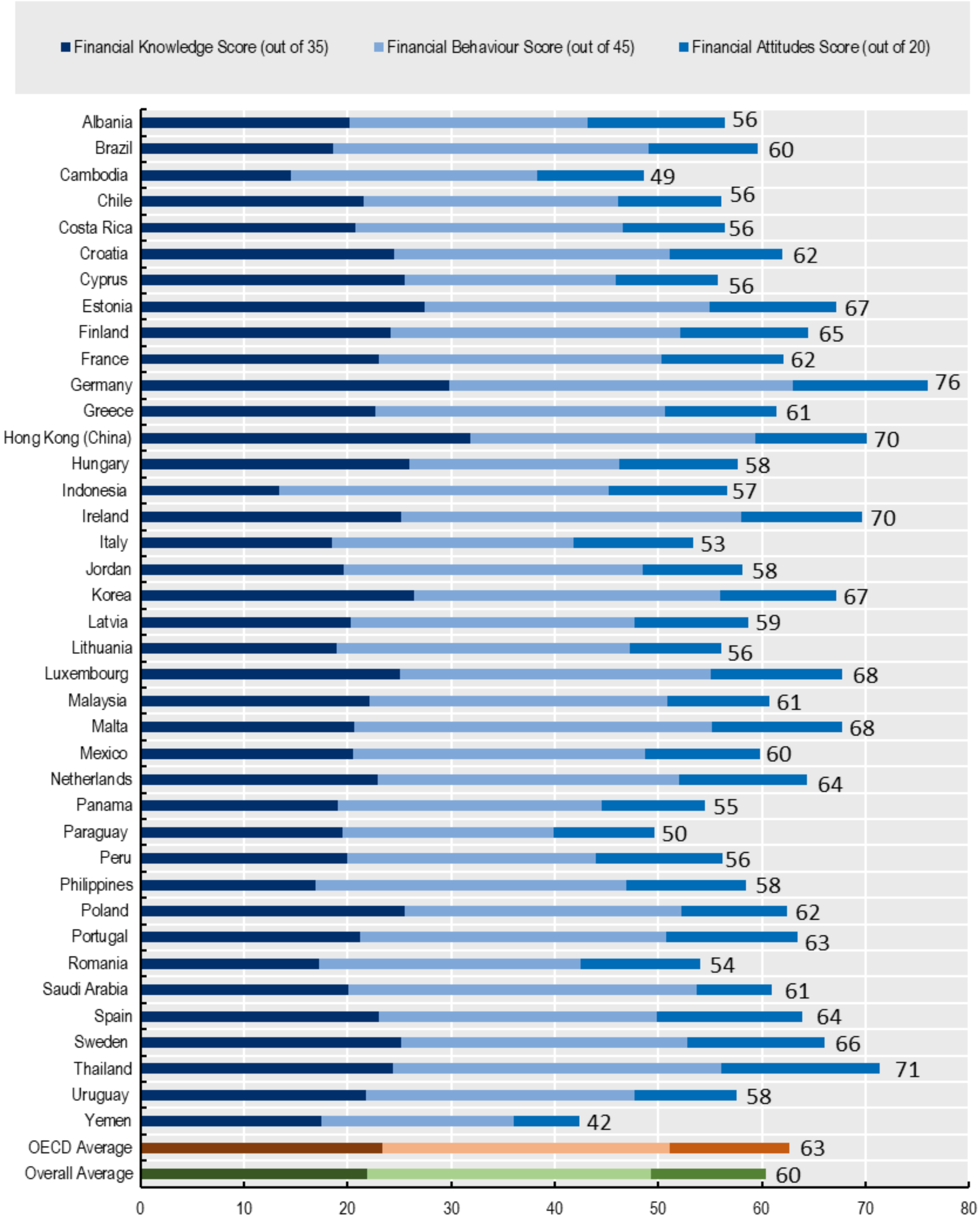
The overall financial literacy score is a constructed measure which is a summation of scores on questions that measure financial knowledge, financial behaviours, and financial attitudes. The overall financial literacy scores range from 0 to 100. Higher scores reflect higher levels of financial literacy. As the questions reflect basic aspects of financial knowledge, behaviours, and attitudes, it can be considered that respondents who score 100 points have a basic understanding of financial concepts and apply prudent principles in their personal finances and in their dealings with the financial sector. These overall financial literacy scores are calculated using the methodology defined in the OECD/INFE 2022 Toolkit; details about the survey items and methodology used to construct financial literacy scores are provided in Annex C.

Overall levels of financial literacy

Figure 2.1 reports the average financial literacy scores for 40 participating countries and economies, showing substantial heterogeneity. The overall average financial literacy score across all participating countries and economies is 60 points out of 100 points (63 out of 100 across participating OECD countries). A table of the average financial literacy scores by country is provided in Annex D.

Figure 2.1. Overall financial literacy

Average financial literacy scores (out of 100)



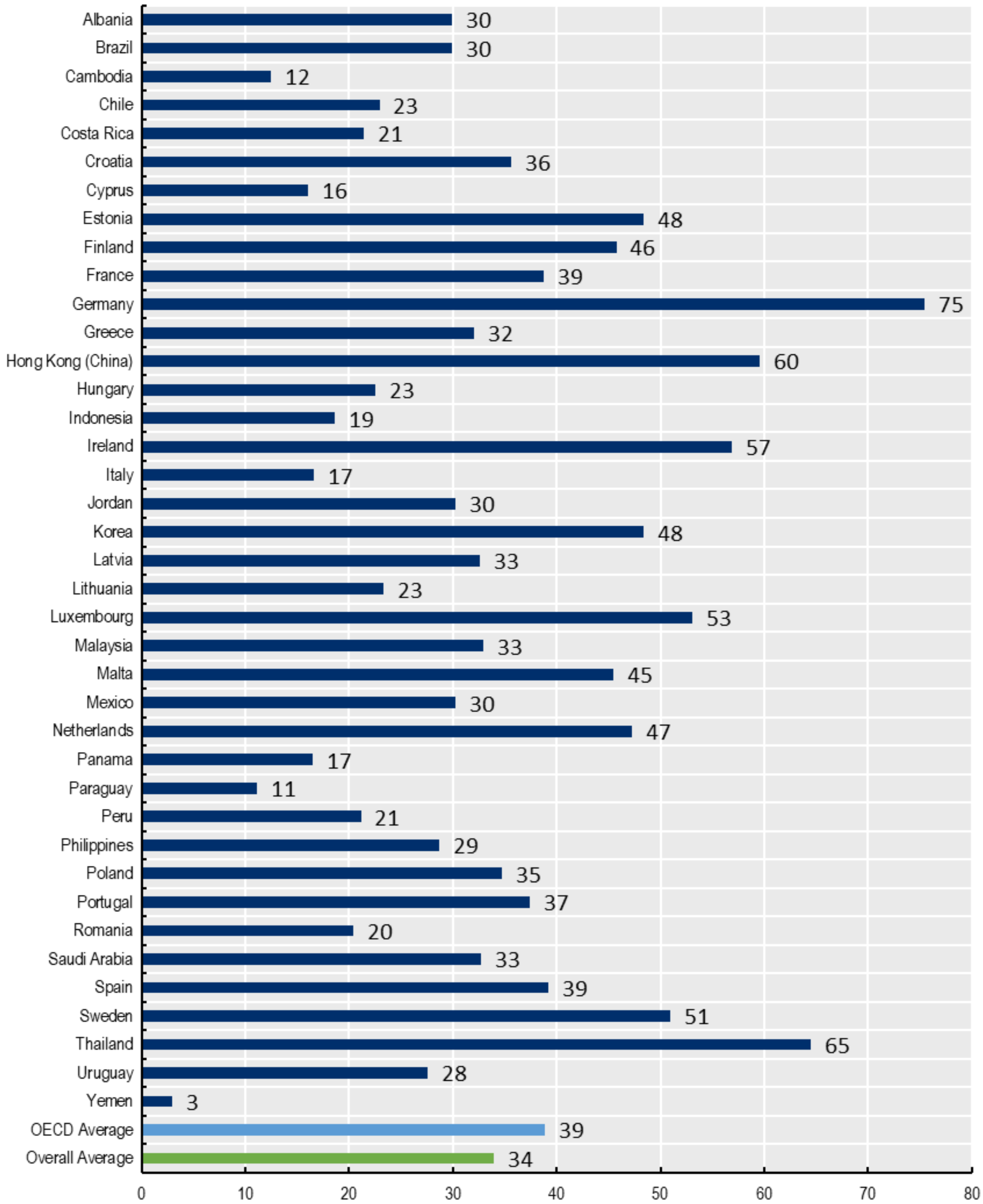
Notes: The overall financial literacy score is computed as the sum of the scores on financial knowledge, financial behaviour and financial attitudes. The overall financial literacy score was scaled to range between 0 and 100.
The results for Jordan, Mexico and Saudi Arabia should be interpreted with caution as the national samples may not be representative of the entire adult population. See Annex A for further details.
The results for Malaysia and Spain presented in this chapter are drawn from samples taken in 2021 using the 2018 Toolkit. See Annex A for further details.
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Minimum target score on financial literacy

The minimum target scores on financial literacy is defined as scoring at least 70 points out of 100 points. This threshold was chosen to be broadly consistent with definitions of minimum target scores on financial knowledge and financial behaviour described in the following sections. Figure 2.2 reports the percentage of adults who reach the minimum target score on financial literacy, showing wide variation across countries and economies. On average across all participating countries and economies, 34% of adults reach the minimum target score on financial literacy (at least 70 points out of 100). Across participating OECD countries, 39% of adults reach the minimum target score on financial literacy.

Figure 2.2. Minimum target financial literacy

Percentage of adults who scored at least 70 points (out of 100) on financial literacy



Notes: The results for Jordan, Mexico and Saudi Arabia should be interpreted with caution as the national samples may not be representative of the entire adult population. See Annex A for further details.
The results for Malaysia and Spain presented in this chapter are drawn from samples taken in 2021 using the 2018 Toolkit. See Annex A for further details.
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Financial knowledge

Financial knowledge is one of the three components of financial literacy. Financial knowledge can be considered as having a basic knowledge of financial concepts and the ability to apply numeracy skills in financial contexts. Financial knowledge allows individuals to manage their financial matters, compare financial products and services to make appropriate and well-informed financial decisions, and to react to events that could affect their financial well-being.

This section looks at overall levels of financial knowledge across participating countries and economies, focusing on responses to seven questions designed to test different aspects of financial knowledge that are useful when making financial decisions. This includes knowledge of financial concepts such as inflation (the definition of inflation and the understanding of time value of money), the benefits of long-term saving/investing, interest and risk. Financial knowledge scores are computed as the number of correct responses to the seven financial knowledge questions. Raw financial knowledge scores range from 0 to 7 and were rescaled to be out of 100. Higher scores reflect higher levels of financial knowledge. More information about each survey item measuring financial knowledge is provided in Annex C.

This section reports the average financial knowledge scores across participating countries or economies, the proportion of adults scoring the minimum target financial knowledge score and the proportion of adults who correctly answered each financial knowledge question.

Levels of financial knowledge

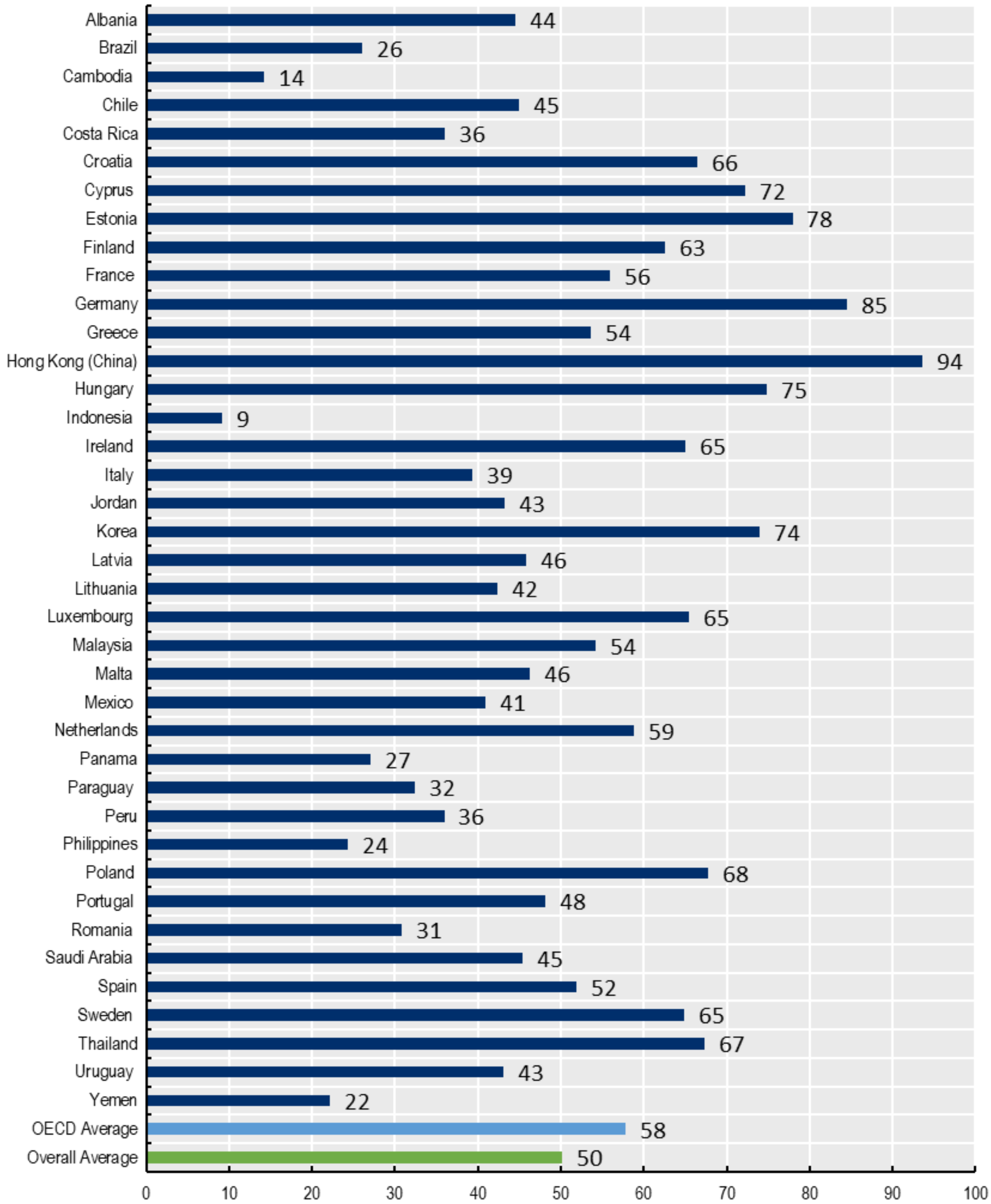
There is much variation in financial knowledge across participating countries and economies. The average financial knowledge score across all participating countries and economies is 63 out of 100 points (67 out of 100 across participating OECD countries). Levels of financial knowledge are highest among adults in Hong Kong, China (91), Germany (85) and Estonia (78). Table 2.5 in Annex D reports financial knowledge scores by country or economy.

In addition to average financial knowledge scores, the report also presents evidence on the percentage of adults who reach the minimum target financial knowledge score. The minimum target financial knowledge score is defined as answering at least five out of the seven financial knowledge questions correctly, which can be considered as the minimum score for a financially knowledgeable person.

Figure 2.3 presents the percentage of adults who obtained the minimum financial knowledge score, showing wide variation across countries and economies. Across all participating countries and economies, 50% of adults scored the minimum target financial knowledge score of at least five out of seven correct answers (58% of adults across participating OECD countries).

Figure 2.3. Minimum target financial knowledge

Percentage of adults who obtained the minimum financial knowledge score (correctly answering at least five out of seven financial knowledge questions)



Notes: The minimum financial knowledge score is defined as correctly answering at least five of the seven financial knowledge questions.
Malta's minimum financial knowledge score is defined as correctly answering three of the four financial knowledge questions included in their survey.
The results for Jordan, Mexico and Saudi Arabia should be interpreted with caution as the national samples may not be representative of the entire adult population. See Annex A for further details.
The results for Malaysia and Spain presented in this chapter are drawn from samples taken in 2021 using the 2018 Toolkit. See Annex A for further details.
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Responses to individual financial knowledge questions

The 2022 Toolkit contains seven financial knowledge questions that respondents are expected to answer. The financial knowledge score is created by attributing one point for each correct answer. These financial knowledge questions test knowledge of financial concepts such as inflation (the definition of inflation and the understanding of time value of money), the benefits of long-term saving/investing, interest and risk.

Figure 2.4 reports the percentage of adults who answered each financial knowledge question correctly, averaged across all participating countries and economies and across participating OECD countries. This figure reports the percentage of adults who correctly understand simple and compound interest (unconditionally), as well as the percentage of adults who understand compound interest conditional on understanding simple interest.

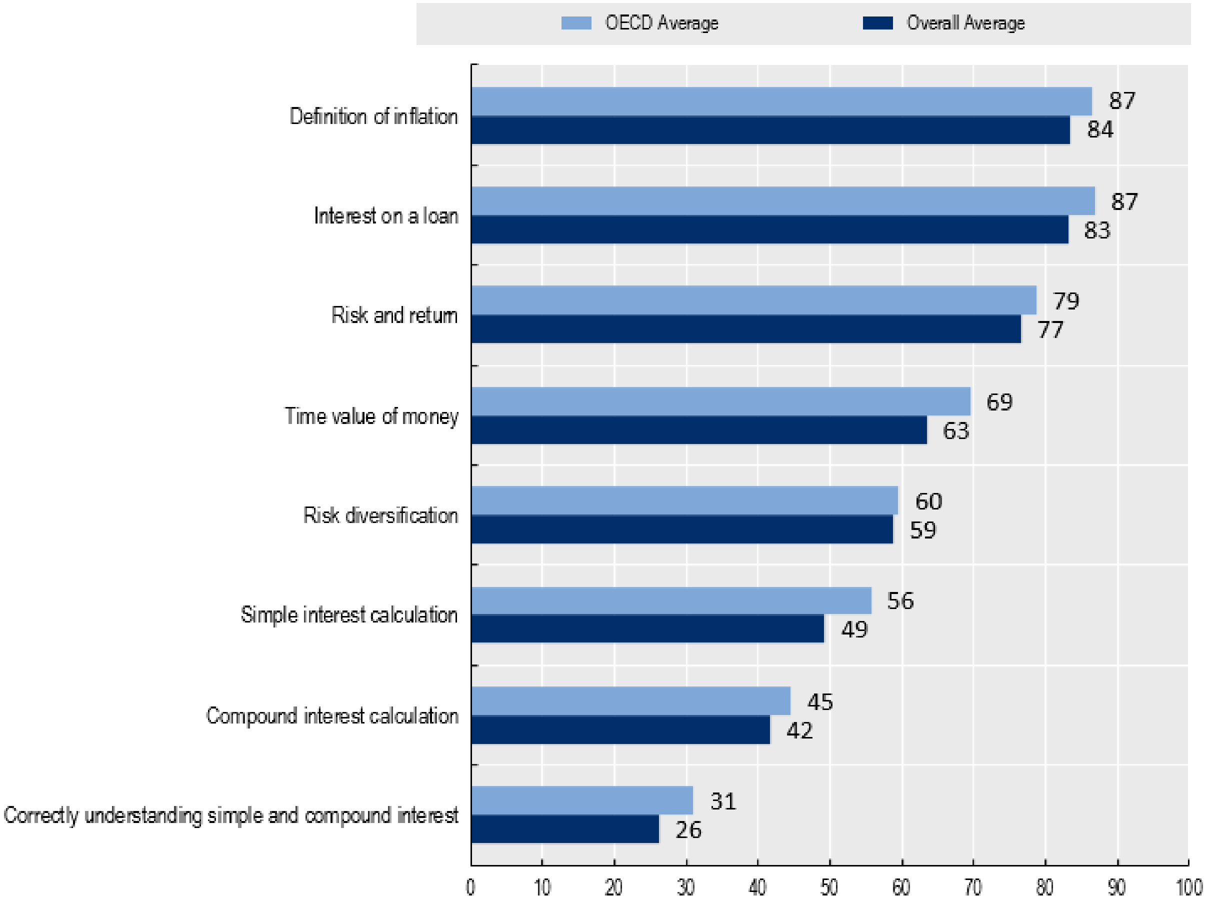
Overall, most adults understand the meaning of inflation and can make a simple numerical calculation on the interest on a loan. On average across all participating countries and economies, some 84% of adults correctly answered the question on the impact of inflation on the cost of living and the question on interest charged on a loan.

While most people understand the meaning of inflation, fewer understand the impact of inflation on their savings, as only 63% of adults on average across participating countries and economies can correctly answer the question on the time value of money.

However, compound interest seems to be a more difficult concept; on average across participating countries and economies, less than half of all adults correctly answered the question requiring them to make this calculation. In terms of understanding the relationship between risk and return, 77% of adults answered this question correctly whereas 59% of adults correctly understood the importance of diversification in reducing risk across participating countries and economies.

Figure 2.4. Financial knowledge questions

Percentage of adults who correctly answered each financial knowledge question



Notes: This graph displays the percentage of adults who correctly answered each financial knowledge question as well as the percentage of adults who correctly understand both simple and compound interest. Not every column displayed in the graph is used to calculate the financial knowledge score. For more information on the methodology used to calculate financial knowledge scores, please refer to Annex C.
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Table 2.7 in Annex D reports the percentage of adults by participating country or economy who answered each financial knowledge question correctly.

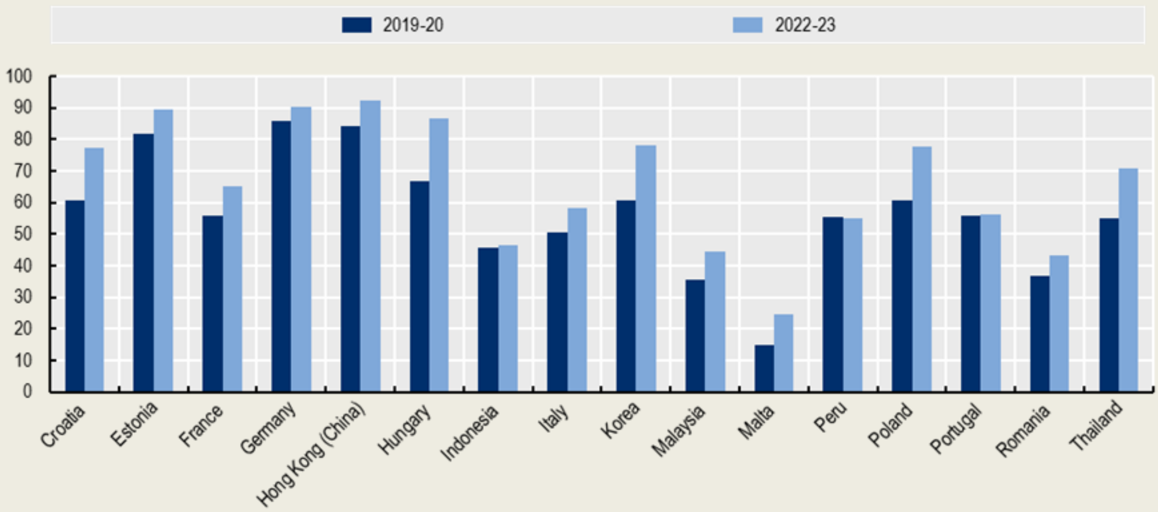
Box 2.1. Changes in financial knowledge

Given the current macro-economic context, characterised by growing inflation and cost of living pressures in many countries, it is interesting to see to what extent individuals are adapting their skills to the changing landscape.

Figure 2.5 presents the percentage of adults who correctly understand the concept of the time value of money according to the previous wave of data collection in 2019/20 and the current round of data collection in 2022/23 across 16 countries and economies with available data. In most of these participating countries or economies, the percentage of adults who understand the concept of time value for money has increased since the previous wave of data collection. In contrast, as shown in Table 2.10 in Annex D, knowledge of other concepts has not improved in a consistent way in countries and economies with available data. Furthermore, Table 2.10 in Annex D reports changes in the percentage of adults who correctly answered each financial knowledge score across participating countries and economies from the past two rounds of data collection (OECD, 2016[8]; OECD, 2020[4]).

Figure 2.5. Changes in financial knowledge

Changes in the percentage of adults who correctly understand the concept of the time value of money



Notes: Scores for 2019-20 are drawn from OECD (2020), OECD/INFE 2020 International Survey of Adult Financial Literacy.
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Financial behaviour

Financial behaviour is the second component of financial literacy. Individuals' behaviours and actions affect their financial situation and well-being in both the short- and long- term. Some behaviours, such as putting off bill payments, failing to plan for future expenditures, or choosing financial products without shopping around, may negatively impact an individual's financial situation and well-being.

It is therefore essential to assess financial behaviour in a survey of financial literacy. The questionnaire includes a variety of questions to investigate if individuals are behaving in financially literate ways. These behaviours include:

- *Keeping track of money flows*: these questions evaluate if individuals keep a close watch on their personal finances, if they pay their bills on time and if they avoid falling into arrears.
- *Saving and long-term planning*: these questions determine if individuals are actively saving, if they borrow or avoid borrowing to make ends meet in the event of a short-term financial shortfall and whether they set themselves long-term financial goals.
- *Making considered purchases*: these questions explore if individuals seek independent information or advice when considering making a purchase of financial products and services, if they consider multiple options when selecting a financial product or service, and if they look to make informed decisions by shopping around rather than purchasing the most readily available financial product or service.

Together, the financial behaviour questions provide insight into individuals' actions, or behaviour, related to their finances. This section looks at overall levels of financial behaviours across participating countries and economies, focusing on responses to nine questions designed to give insight into financially savvy behaviours. This section reports the average financial behaviour scores across participating countries or economies, the proportion of adults scoring at the minimum target financial behaviour score and the proportion of adults who correctly answered each financial behaviour question.

Financial behaviour scores are computed as a count of the number of "financially savvy" behaviours. Raw financial behaviour scores range between 0 and 9, which were then rescaled to range from 0 to 100. Higher scores reflecting higher levels of financially savvy behaviour. More information on the individual survey items used to compute financial behaviour scores is provided in Annex C.

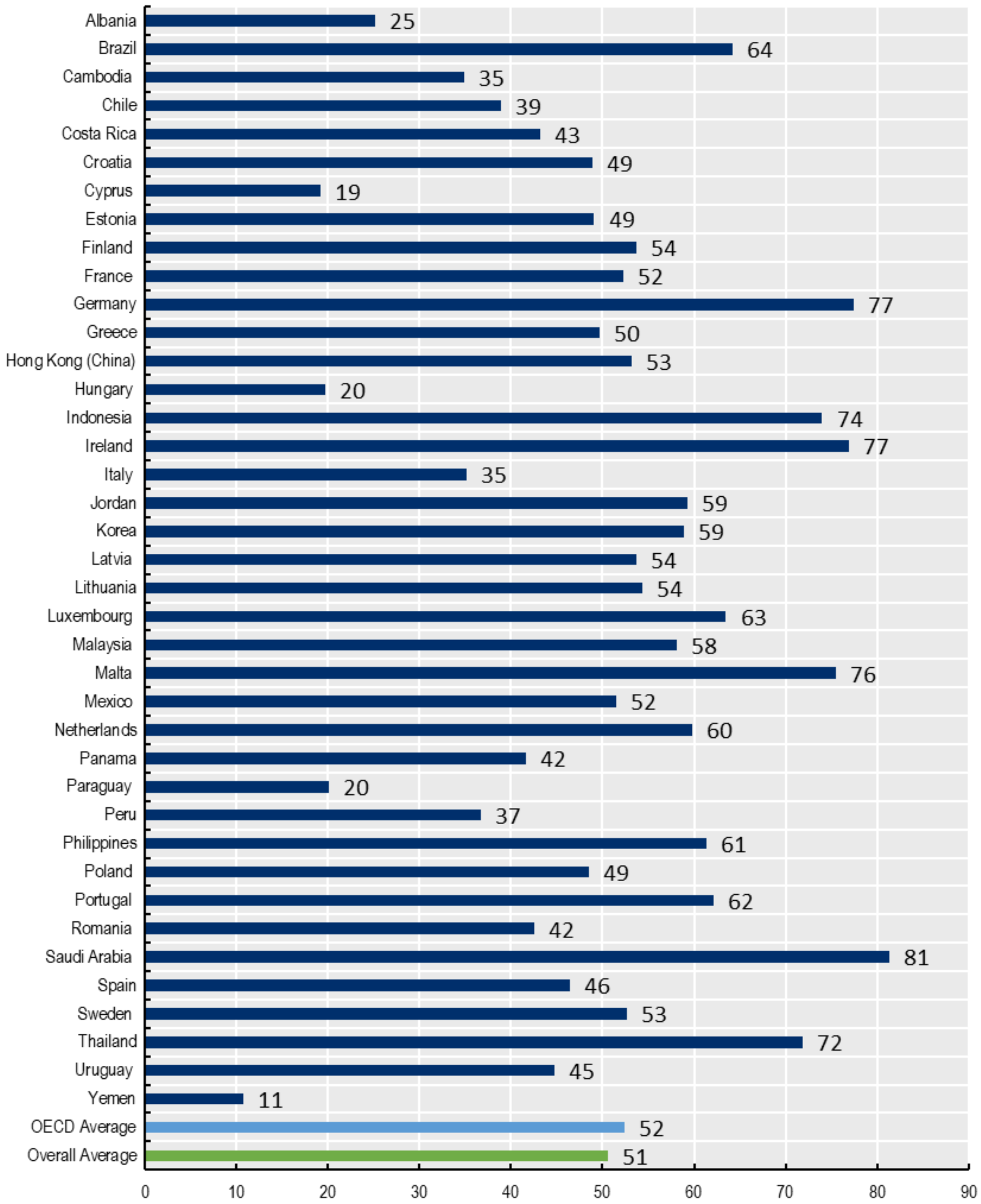
Levels of financial behaviour

Findings reveal that there is considerable variation in financial behaviours within and across participating countries and economies. The average financial behaviour score across all participating countries and economies is 61 out of the maximum 100 points (62 out of 100 across participating OECD countries). Table 2.11 in Annex D reports the average financial behaviour scores by participating country or economy.

In addition to average financial behaviour scores, the report also presents evidence on the percentage of adults who reach a minimum level of financial behaviour. The minimum financial behaviour score is defined as displaying at least six of nine financially literate behaviours. Figure 2.6 shows the percentage of respondents by country or economy who scored the minimum financial behaviour score. Across all participating countries and economies, 51% of adults reached the minimum target behaviour score (52% of adults across participating OECD countries).

Figure 2.6. Minimum target financial behaviour

Percentage of adults who obtained the minimum target financial behaviour score (displaying at least six out of nine financially savvy behaviours)



Notes: The minimum financial behaviour score is defined as displaying at least six of the nine financially savvy behaviours.
Malta's financial behaviour score is defined as displaying five out of seven financially savvy behaviours included in their survey, since not all questions on financial behaviour were included in Malta's survey.
The results for Jordan, Mexico and Saudi Arabia should be interpreted with caution as the national samples may not be representative of the entire adult population. See Annex A for further details.
The results for Malaysia and Spain presented in this chapter are drawn from samples taken in 2021 using the 2018 Toolkit. See Annex A for further details.
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Responses to individual financial behaviour questions

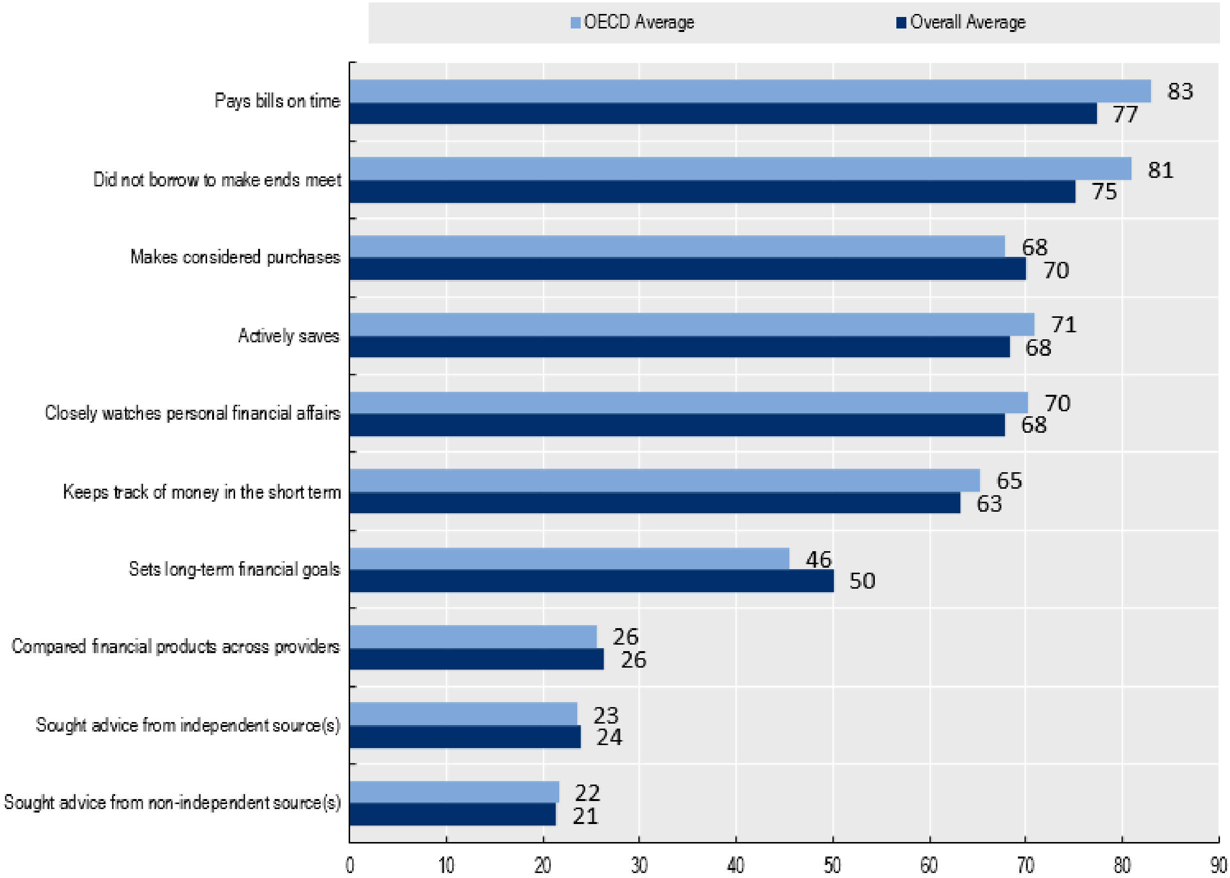
The 2022 Toolkit contains nine financial behaviour questions that respondents are expected to answer. The financial behaviour score is created by allocating one point for each financially savvy behaviour. These financial behaviour questions give an insight into individuals' actions related to their finances that may positively affect their financial situation.

Figure 2.7 reports the percentage of adults who received one point for each financial behaviour question, averaged across all participating countries and economies and across participating OECD countries. There are ten different financial behaviours presented in this figure to show the percentages of adults who sought advice from independent sources separately from the percentage of adults who sought advice from non-independent sources. For the purpose of calculating financial behaviour scores, however, these two indicators are combined to show the percentage of adults who seek advice (either from independent or non-independent sources) before making a purchase.

On average across participating countries and economies, about 77% of adults pay bills on time and did not borrow within the last year to make ends meet. However, only 26% of adults compare products across providers and only 24% of adults seek advice from independent sources when purchasing a financial product or service. Table 2.13 in Annex D reports the percentage of adults by participating country or economy who received one point for each financial behaviour question.

Figure 2.7. Financial behaviour questions

Percentage of adults who reported each financial behaviour



Note: There are ten different financial behaviours presented in this figure to show the percentages of adults who sought advice from independent sources separately from the percentage of adults who sought advice from non-independent sources. For the purpose of calculating financial behaviour scores, however, these two indicators are combined to show the percentage of adults who seek advice (either from independent or non-independent sources) before making a purchase. For more information about the methodology used to calculate financial behaviour scores, please refer to Annex C.
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Financial attitudes

Financial attitudes are the third component of financial literacy. The OECD definition of financial literacy recognises that even if an individual has the knowledge and ability to act in a particular way, their attitudes towards money can also influence their decisions and behaviours. The questionnaire therefore includes a few questions, or statements, to measure respondents' attitudes towards money and planning for the future. Each of the questions focuses on preferences for spending money in the short term through "living for today." The questions ask individuals to use a scale to indicate the extent to which they agree or disagree with the following statements:

- "I find it more satisfying to spend money than to save it for the long-term."
- "I tend to live for today and let tomorrow take care of itself."
- "Money is there to be spent." (optional)

Each of these statements focuses on preferences for the short-term; such attitudes could hinder behaviours that could lead to improved financial resilience and well-being. The results presented in this report consider the extent to which people show financially literate attitudes, that is, the extent to which people *disagree* with these statements.

This section looks at overall levels of financial attitudes across participating countries and economies. This section reports the distribution of average financial attitude scores by country or economy and the proportion of adults who correctly answered each financial attitude question.

The financial attitude score is computed as the average response across the first two attitude questions.[1] The average score is rescaled to range from 0 to 100 points. Higher scores reflect more financially literate attitudes. More information on the individual survey items used to compute financial attitudes scores is provided in Annex C.

Levels of financial attitudes

There is variation in financial attitudes across participating countries and economies. The overall financial attitude score is 56 out of 100 points (58 out of 100 across participating OECD countries). Adults in Thailand (77), Spain (70) and Sweden (67) are more likely to display financial attitudes geared toward the long-term. Table 2.16 in Annex D reports average financial attitude scores by participating country or economy.

Responses to individual financial attitudes questions

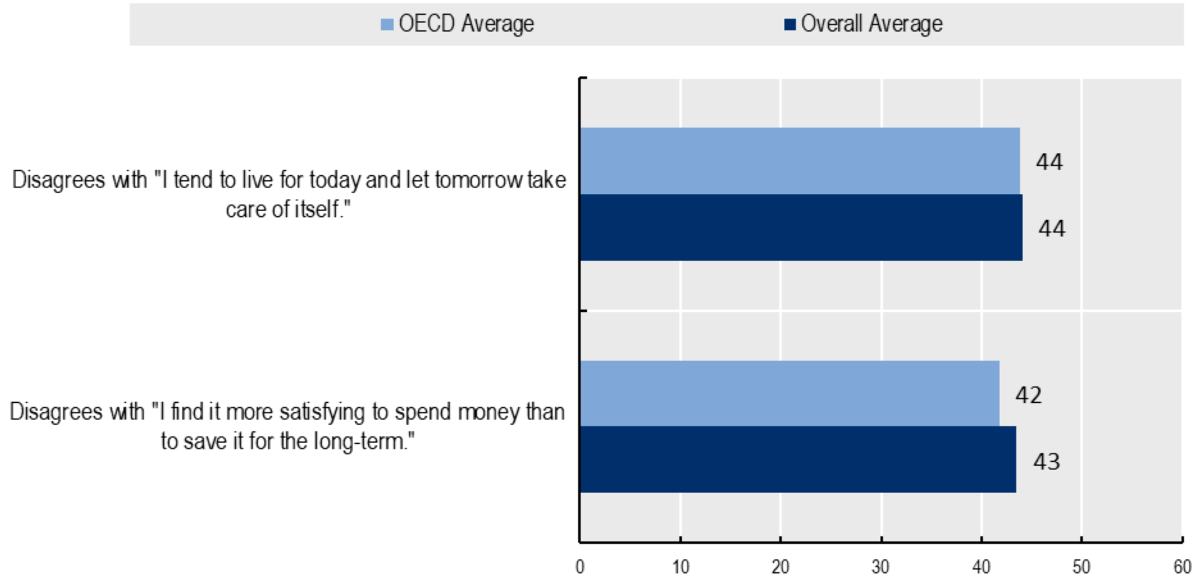
The 2022 Toolkit contains three financial attitude questions, including one that is optional. These financial attitude questions seek to determine individuals' orientations toward spending money in the short term versus planning for the long-term.

Figure 2.8 reports the percentage of adults who displayed long-term financial attitudes, averaged across all participating countries and economies and across participating OECD countries. On average across participating countries and economies, less than half of adults (44%) disagree with the statement "I tend to live for today and let tomorrow take care of itself." Some 43% of adults across all participating countries and economies disagree with the statement "I find it more satisfying to spend money than to save it for the long-term." Since the statement "Money is there to be spent." was optional and was not asked in a large number of participating countries and economies, results based on this statement are not included in the calculation of the financial attitudes score. However, results are available in in Table 2.17 of Annex D.

[1] In previous co-ordinated measurement exercises, the financial attitude score was calculated as an average of three statements, including also "Money is there to be spent" (QS1_3). However, "Money is there to be spent" became an optional question in the 2022 Toolkit and it was not asked in the surveys of a large number of countries participating in the 2022/2023 measurement exercise. For the sake of international comparison, for the 2022/2023 coordinated measurement exercise the optional financial attitude question was not included in the calculations of the financial attitude scores in any of the participating countries or economies irrespective of whether the question was asked on their survey. For more information, please refer to Annex C.

Figure 2.8. Financial attitude questions

Percentage of adults who display long-term financial attitudes



Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Table 2.17 in Annex D reports the percentage of adults by participating countries or economies who displayed attitudes geared toward longer-term financial planning.

Financial literacy levels across socio-demographic groups

While it is helpful to look at overall financial literacy and its components across countries, there can be significant variation in financial literacy (and its components) across individual-level characteristics such as age, gender, level of education, labour force status and income.

Figure 2.9 reports differences in financial literacy levels associated with age, gender, level of education, labour force status and income, considering all these individual-level characteristics at the same time, on average across participating countries and economies. Tables 2.9, 2.15 and 2.19 in Annex D report differences associated with these individual characteristics for the financial knowledge, behaviour and attitudes scores.

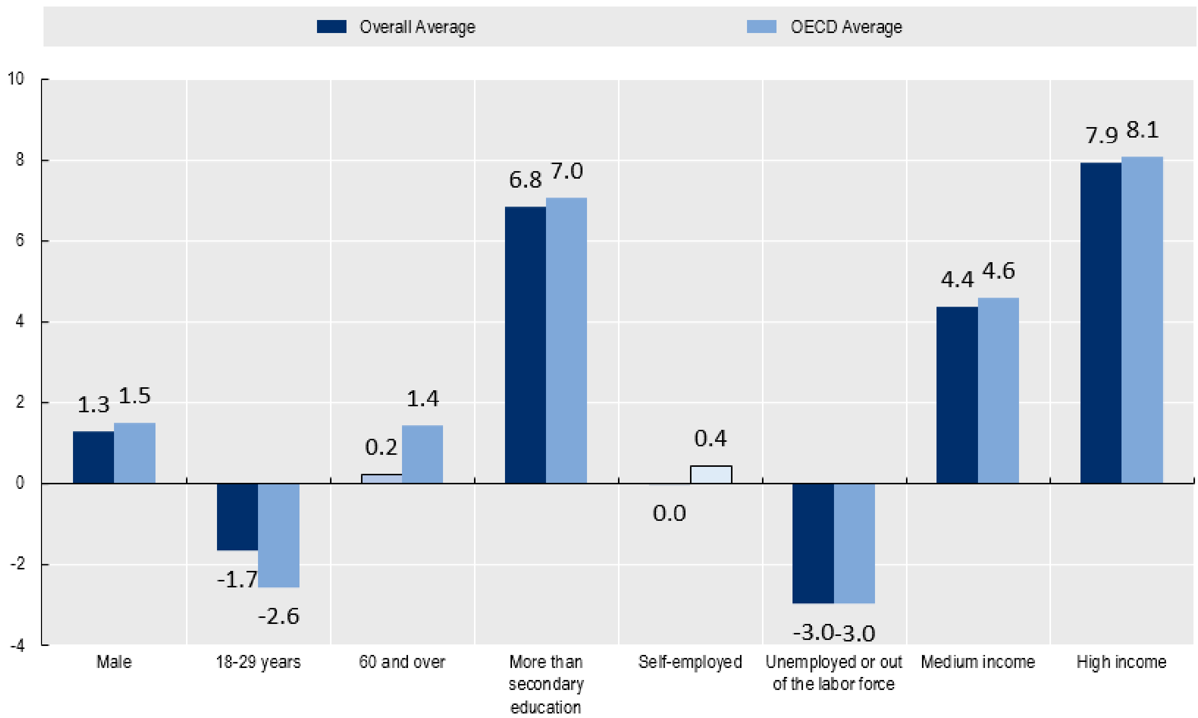
Overall, the analysis of the financial literacy score and its components across socio-demographic groups indicates that:

- *Income*: Financial literacy levels are higher among adults with higher incomes compared to adults with lower incomes. Income is also strongly correlated with financial knowledge, financial behaviour and financial attitudes. (Tables 2.9, 2.15 and 2.19 in Annex D).
- *Education*: on average across participating countries and economies, financial literacy levels are higher among adults who have a tertiary degree compared to adults who have secondary education or less. Levels of financial knowledge, behaviour and attitudes are also higher among adults who have a tertiary degree compared to adults who have secondary education or less (Tables 2.9, 2.15 and 2.19 in Annex D).

- *Employment status*: Adults who are unemployed or out of the labour force have lower levels of financial literacy than adults who are employees. Adults who are self-employed have lower levels of financial knowledge compared to adults who are employees (Table 2.9 in Annex D).
- *Age*: on average across participating countries and economies, financial literacy levels are lower among adults aged 18-29 years old compared to adults aged 30-59 years old, but these differences are small (around 2 points out of 100). However, in some Latin American countries, such as Brazil, Panama and Paraguay, younger adults have slightly higher financial literacy levels than adults aged 30-59 years old. The financial knowledge scores of young adults in Finland, Luxembourg and Sweden are at least 10 points lower than the scores of middle-age (Table 2.9 in Annex D).
- *Gender*: on average across participating countries and economies, men have slightly higher levels of financial literacy on average than women, but these differences are quite small (smaller than 2 points out of 100). To a large extent, gender differences in financial literacy are driven by gender differences in financial knowledge, while gender differences in financial attitudes or behaviour are very small. Gender differences in financial knowledge scores are larger than 10 points in Estonia, Finland, Greece, Jordan, Luxembourg, Saudi Arabia and Sweden, after taking other socio-demographic characteristics into account (Table 2.9 in Annex D).

Figure 2.9. Variation in financial literacy

Score-point differences associated with characteristics of the respondent



Notes: These results are based on a linear regression (OLS), with sampling weights (if available for a given country or economy).
Comparison categories are: women, respondents 30-59 years old, respondents with upper secondary education or less, employees and respondents with low incomes.
Statistically significant values are marked in darker colours (5% level).
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Context for understanding financial literacy levels: financial product holding and experiences in the financial marketplace

The questionnaire includes several questions to investigate the extent to which people are aware of and use various types of financial products to determine whether and how individuals are included in the financial sector and are active financial consumers. Financial products are grouped into the following categories; for more information on the specific survey items in the Toolkit used to create each category, please refer to Annex C:

- **Payment products** include credit cards, current checking/payment accounts, mobile/cell phone accounts and pre-paid debit cards/payment cards.
- **Savings, investment or retirement products** include pension or retirement products (excluding mandatory pensions or saving products), investment accounts, savings accounts, stocks and shares, bonds and crypto-assets.
- **Credit products** include credit cards, mortgage or home loans, loans secured on property, unsecured bank loans, car loans and microfinance loans.
- **Insurance products** are based on a single item in the survey.

This section describes awareness and use of financial products across participating countries and economies. This section also presents individuals' experiences in the financial marketplace, including negative experiences such as being a victim of a scam or fraud.

Awareness of financial products

Across participating countries and economies, awareness of financial products is relatively high. Table 2.20 in Annex D presents the percentage of adults by country or economy who are aware of various types of financial products. Overall, high percentages of adults in each of the participating countries and economies are aware of payment products, credit products, and some type of saving, investment, or retirement product, while awareness of insurance is somewhat lower. In particular:

- *Payment Products:* On average across participating countries and economies, 87% of adults are aware of at least some type of payment product. Almost all adults (at least 99%) in six participating countries and economies are aware of at least one type of payment product.
- *Saving, Investment or Retirement Products:* On average across participating countries and economies, 87% of adults are aware of a saving, investment or retirement product (excluding mandatory pensions or saving products). More than 90% of adults are aware of at least one savings, investment or retirement product in 22 participating countries and economies.
- *Credit Products:* On average across participating countries and economies, around 87% of adults are aware of a credit product. More than 90% of adults in 21 participating countries and economies are aware of a credit product.
- *Insurance Products:* Around three-fourths of all adults are aware of some type of insurance product. In 25 participating countries and economies, more than 75% of adults are aware of some type of insurance product.

Holding financial products

While awareness of many types of financial products is high, holding of these financial products is lower. Table 2.21 in Annex D presents the percentage of adults by country or economy who hold various types of financial products. Overall, the most commonly held financial product is a type of payment product. Box 2.2 reports findings on awareness and holding of sustainable financial products.

Overall averages can mask important variation across participating countries and economies in adults' use of financial products.

- *Payment Products:* On average across participating countries and economies, 67% of adults hold a type of payment product (80% of adults across participating OECD countries).
- *Saving, Investment or Retirement Products:* On average across participating countries and economies, slightly more than half (52%) of adults hold a saving, investment or retirement product (excluding mandatory pensions or saving products). More than 75% of adults hold at least one savings, investment or retirement product in ten participating countries and economies. However, less than half of adults in 21 participating countries and economies hold a savings, investment, or retirement product.
- *Credit Products:* On average across participating countries and economies, 49% of adults hold a credit product (57% of adults across participating OECD countries).
- *Insurance Products:* On average across participating countries and economies, some 36% of adults hold some type of insurance product (46% across participating OECD countries).

Box 2.2. Sustainable finance products

An increasing interest in and demand for sustainable finance products by financial consumers and retail investors has been observed in several countries over the past years (OECD, 2023[23]). The survey explored this by asking respondents about their awareness and holding of any types of sustainable finance products.

Awareness of sustainable financial products

Across participating countries and economies, levels of awareness of sustainable financial products varies substantially. On average across all participating countries and economies, 20% of adults are aware of any sustainable financial products (23% of adults across participating OECD countries). Table 2.20 in Annex D reports the percentages of adults by participating country and economy who are aware of sustainable financial products. More than 50% of adults in Lithuania (53%) and Germany (65%) are aware of sustainable financial products, but less than 10% of adults in six participating countries reported having heard of them.

Holding sustainable financial products

Few adults across participating countries and economies hold financial products that are labelled "sustainable", "green" or otherwise indicate a sustainable designation. On average across all participating countries and economies, 2.2% of adults hold sustainable financial products (2.7% of adults across participating OECD countries). Table 2.21 in Annex D reports the percentages of adults across participating countries and economies who hold sustainable financial products. Less than 1% of adults in eleven participating countries and economies hold sustainable financial products, but in Germany, almost 15% of adults declared to hold sustainable financial products.

Financial product holding and financial literacy

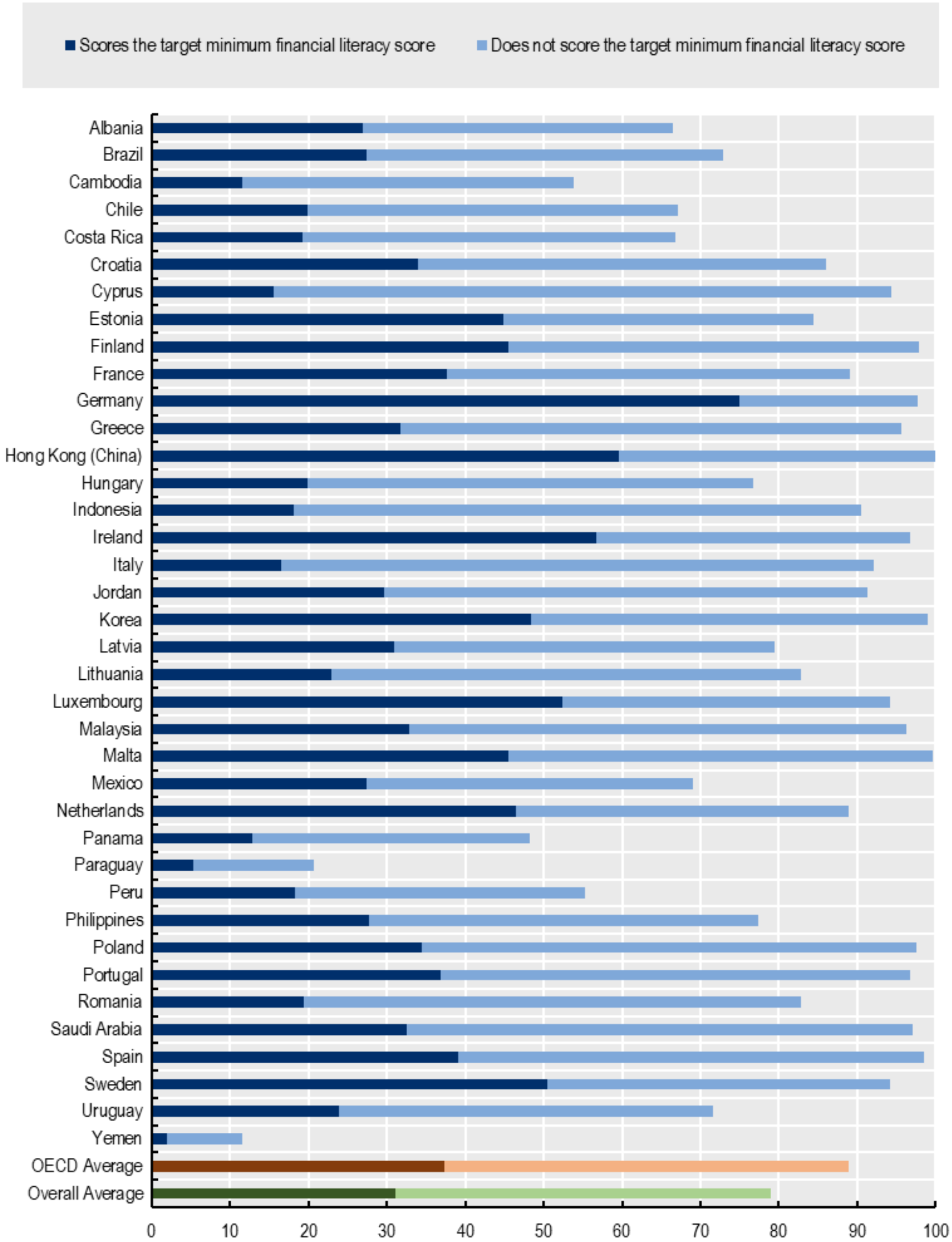
It is helpful for policymakers to also look at measures of awareness and holding of financial products in relation to financial literacy levels. This can help policymakers understand whether and to what extent adults who hold various types of financial products also display the requisite financial knowledge, behaviour and attitudes to make sound financial decisions.

Figure 2.10 displays the percentage of adults who hold any financial product, by their level of financial literacy, across participating countries and economies. Across many participating countries and economies, most adults who hold any type of financial product do not reach the minimum target score of financial literacy (at least 70 out of 100 points). On average across all participating countries and economies, only 37% of adults who hold any type of financial product reach the minimum target financial literacy score (42% of adults across participating OECD countries). In 14 participating countries and economies, less than 25% of adults who hold any type of financial product reach the minimum target financial literacy score. However, in Germany, Hong Kong (China) and Luxembourg over half of adults who hold any type of financial product reach the minimum target financial literacy score. Table 2.22 in Annex D reports the percentage of adults who hold any financial product, by their level of financial literacy in each participating country and economy.

For adults who hold savings, investment or retirement products, an important facet of financial knowledge is understanding compound interest. Figure 2.11 displays the percentage of adults who hold a savings product by knowledge of compound interest across participating countries and economies. On average across participating countries and economies, 46% of adults who hold a savings, investment or retirement product understand compound interest (51% of adults across participating OECD countries). In six participating countries and economies, less than one third of adults who hold savings, investment or retirement products understand compound interest. This is notable given that compound interest is an important feature of these financial products. Table 2.23 in Annex D reports the percentage of adults who hold savings, investment or retirement products, by financial knowledge in each participating country and economy.

Figure 2.10. Financial product holding and financial literacy

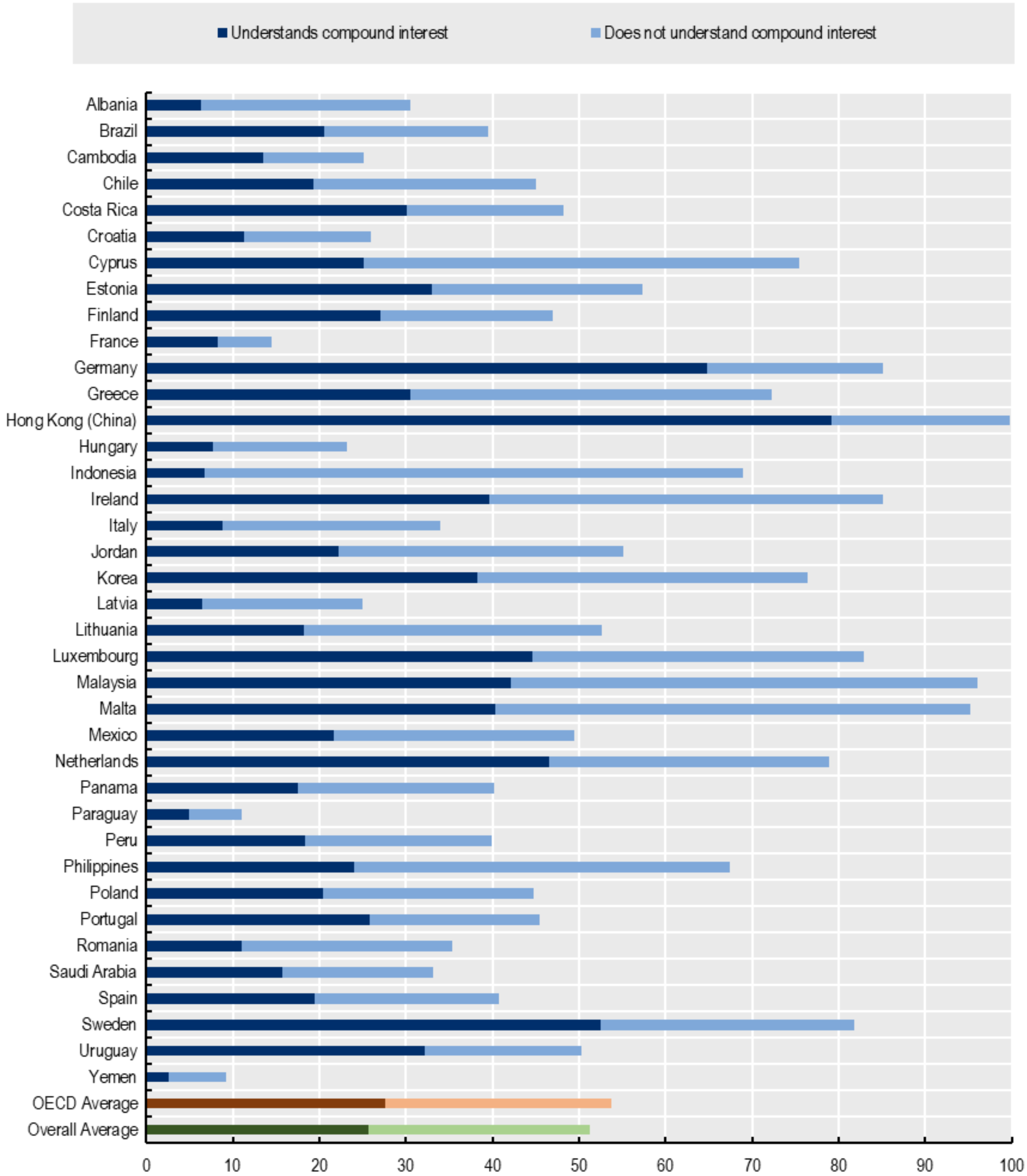
Percentage of adults holding any financial product, by financial literacy



Notes: The minimum target score on financial literacy is defined as scoring at least 70 points out of 100 points.
The results for Jordan and Saudi Arabia should be interpreted with caution as the national samples may not be representative of the entire adult population. See Annex A for further details.
The results for Malaysia and Spain presented in this chapter are drawn from samples taken in 2021 using the 2018 Toolkit. See Annex A for further details.
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Figure 2.11. Holding savings, investment or retirement products and financial knowledge

Percentage of adults who hold a savings, investment or retirement product, by knowledge of compound interest



Notes: The results for Jordan and Saudi Arabia should be interpreted with caution as the national samples may not be representative of the entire adult population. See Annex A for further details.
The results for Malaysia and Spain presented in this chapter are drawn from samples taken in 2021 using the 2018 Toolkit. See Annex A for further details.
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Financial fraud, scams and other issues associated with using financial products and services

In addition to question about financial products awareness and holding, respondents were asked if they had experienced various types of issues associated with accessing and using financial products and services, which included:

- Being a victim of a scams or fraud, such as phishing scams, scams involving personal information, investment scams, and unauthorized or unrecognized transactions,
- Being denied access to financial services, such as a bank account or credit,
- Paying high fees for sending or receiving remittances,
- Being refused an insurance claim,
- Making a formal complaint.

These questions are designed to go beyond simple measures of access to financial products and services to provide a more complete view of the participation in financial markets in countries and economies.

Table 2.25 in Annex D reports the percentages of adults by country who have experienced various issues accessing or using financial products. The following section focuses on experiences related to financial fraud and scams. Other interesting findings include:

- *Denied opening a bank account*. On average across participating countries and economies, some 7% of adults reported that they tried to open a bank account but were refused, for any reason (4% of adults across participating OECD countries). More than one in ten adults in six participating countries and economies have been denied opening a bank account.
- *Denied credit*. On average across participating countries and economies, some one in ten adults have been denied credit for which they had applied (7% across participating OECD countries). More than one in five adults in three participating countries and economies have been denied credit.

Victim of a financial fraud or scam

One negative experience associated with making financial transactions is being a victim of a financial fraud or scam. The OECD/INFE Toolkit asks respondents if they have been a victim of a phishing scam, if they have been a victim of an investment scam, if they had been scammed into providing personal information, or if they had been subject to an unauthorized transaction. On average across participating countries and economies, 15% of adults reported that they have been a victim of at least one of these types of financial frauds or scams (14% of adults across participating OECD countries). Table 2.25 in Annex D reports the percentage on exposure to each type of issue separately.

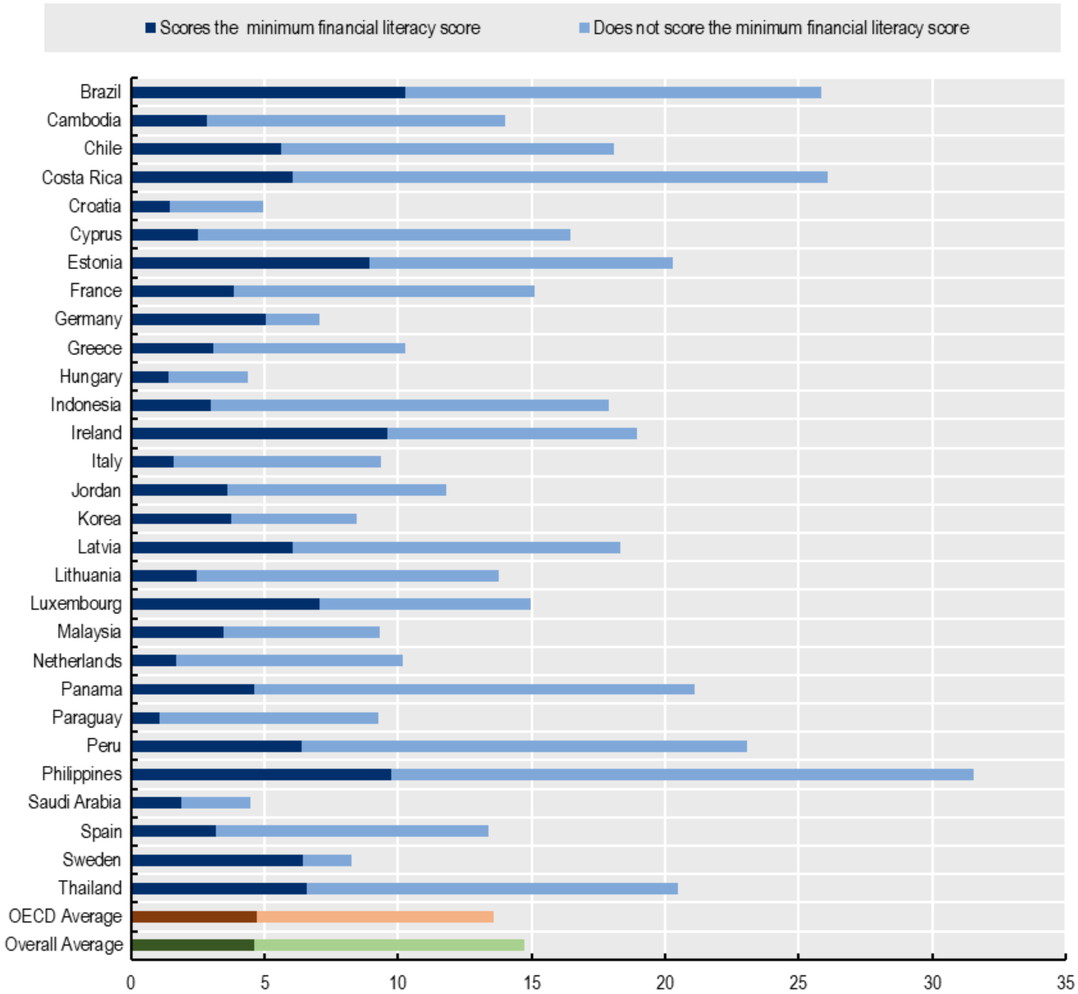
It is helpful for policymakers to also look at financial frauds and scams in relation to financial literacy levels. This can help policymakers understand whether and to what extent adults have the financial literacy to spot and avoid financial frauds and scams.

Figure 2.12 shows the percentage of adults who have been a victim of one of these types of financial frauds or scams (phishing scam, investment scam, scammed into providing personal information, or an unauthorized transaction), by level of financial literacy. It should be noted that the data reported in this figure capture whether a person has been victim of one of these several types of financial frauds and scams at least once, and should not be considered as an indication of the security of the financial system or of the payment system in a given country or economy, as it does not relate to the total number of transactions or the total value of transactions.

Across many participating countries and economies, many adults who have been a victim of one of these types of financial frauds or scams do not reach the minimum target financial literacy score (at least 70 out of 100 points). For instance, across all participating countries and economies, around two out of three adults who have been a victim of one of these types of financial frauds or scams do not reach the minimum target financial literacy score. This suggests that efforts to improve financial literacy levels can also help individuals gain the knowledge, skills and behaviours to protect themselves from financial frauds and scams.

Figure 2.12. Having been a victim of a financial fraud or scam and financial literacy

Percentage of adults who have been a victim of a financial fraud or scam, by financial literacy level



Notes: Having been a victim of a scam or fraud was constructed based on responses from having been scammed into providing personal information, having an unauthorized transaction, having experienced a phishing scam, and having experienced an investment scam.
The data reported in the figure only capture whether a person has been victim of one of these types of financial frauds and scams at least once and should not be considered as an indication of the security of the financial system or of the payment system in each country or economy.
The minimum target score of financial literacy is defined as scoring at least 70 out of 100 points.
Data on the percentage of adults who have been a victim of a financial scam or fraud are not available for Albania, Finland, Hong Kong (China), Malta, Mexico, Poland, Portugal, Romania, Saudi Arabia and Yemen.
The results for Jordan should be interpreted with caution as the national sample may not be representative of the entire adult population. See Annex A for further details.
The results for Malaysia and Spain presented in this chapter are drawn from samples taken in 2021 using the 2018 Toolkit. See Annex A for further details.
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

3 Digital financial literacy

Key results

- The average digital financial literacy score across all participating countries and economies is 53 out of 100 points (55 out of 100 across participating OECD countries).
- Across all participating countries and economies, some 29% of adults score the minimum target digital financial literacy score (at least 70 points out of 100). Across participating OECD countries, 34% of adults score the minimum target digital financial literacy score.
- Digital financial literacy levels are higher among adults who have higher incomes and higher levels of education, compared to adults with lower incomes or lower levels of education.
- On average across participating countries and economies, 38% of adults who manage financial products and services online score the minimum target digital financial literacy score (at least 70 out of 100 points).

The size and nature of the consumer financial services market has grown and changed considerably since the OECD/INFE started to collect data on financial literacy, with new financial products, services and distribution channels along with increased digitalisation. The experience of the COVID-19 pandemic significantly accelerated the pace of digitalisation as lockdowns and confinements led to greater reliance on digital payments (OECD, 2020[24]; OECD, 2021[25]).

The OECD/INFE Toolkit was revised in 2022 to incorporate such changes. The 2022 survey included questions to explore the extent to which individuals use digital financial services and to measure their digital financial literacy. Results discussed in this chapter should be seen as preliminary findings about digital financial literacy in participating countries and economies because the digital financial literacy scores are based on a relatively small number of questions (see Annex C for more information on computing digital financial literacy scores). The OECD/INFE is currently developing a dedicated digital financial literacy survey instrument to provide more complete and robust results in future rounds of data collection (OECD, 2024 Forthcoming[26]).

Overall digital financial literacy scores are constructed in a similar way to the overall financial literacy scores. Overall digital financial literacy are based on three components: knowledge, behaviour, and attitudes. The knowledge component of the digital financial literacy score is computed as the number of correct responses to three questions that measure understanding of digital contracts, personal data use, and crypto-assets. The behaviour component of the digital financial literacy score is computed as a count of the number of “savvy” digital behaviours elicited by four statements. The attitudes component is computed as a count of the number of “savvy” attitudes around digital finance elicited by three statements. Exact question wording and survey items are listed in Annex C. Given the small number of questions for each component, the report does not discuss separate scores for each of them.

The digital financial literacy score is therefore the sum of digital knowledge (3), behaviours (4) and attitudes (3) components. The raw digital financial literacy scores range between 0 to 10 and the final score is rescaled to range between 0 and 100. Higher scores reflect greater levels of digital financial literacy.

The chapter provides results on digital financial literacy and use of digital financial services for both the overall adult population and for adults who have internet access. Results for one of these two samples are not available for certain countries and economies depending on whether participating countries and economies asked respondents if they had internet access, and whether questions on digital financial literacy and use of digital financial services were asked to the overall adult population and only to adults who have internet access. For the sake of simplicity, the discussion of results in the rest of the chapter will only focus on results relevant for the overall adult population, even if relevant results for adults who have internet access are reported in figures and tables.

Digital financial literacy

The results of the 2023 survey provide initial insights on overall levels of digital financial literacy across participating countries and economies. Figure 3.1 reports overall average digital financial literacy levels across participating countries and economies and average digital financial literacy levels for adults with Internet access[2].

On average across participating countries and economies, the digital financial literacy score of the overall adult population is 53 out of 100 (55 out of 100 across participating OECD countries).

[2] There are two separate calculations of digital financial literacy scores: calculating digital financial literacy scores (1) across the entire sample and (2) across the sub-sample of respondents who indicated they had access to the Internet. Please note that for some participating countries and economies, both calculations are available whereas for other participating countries and economies, only one of the two scores are available:

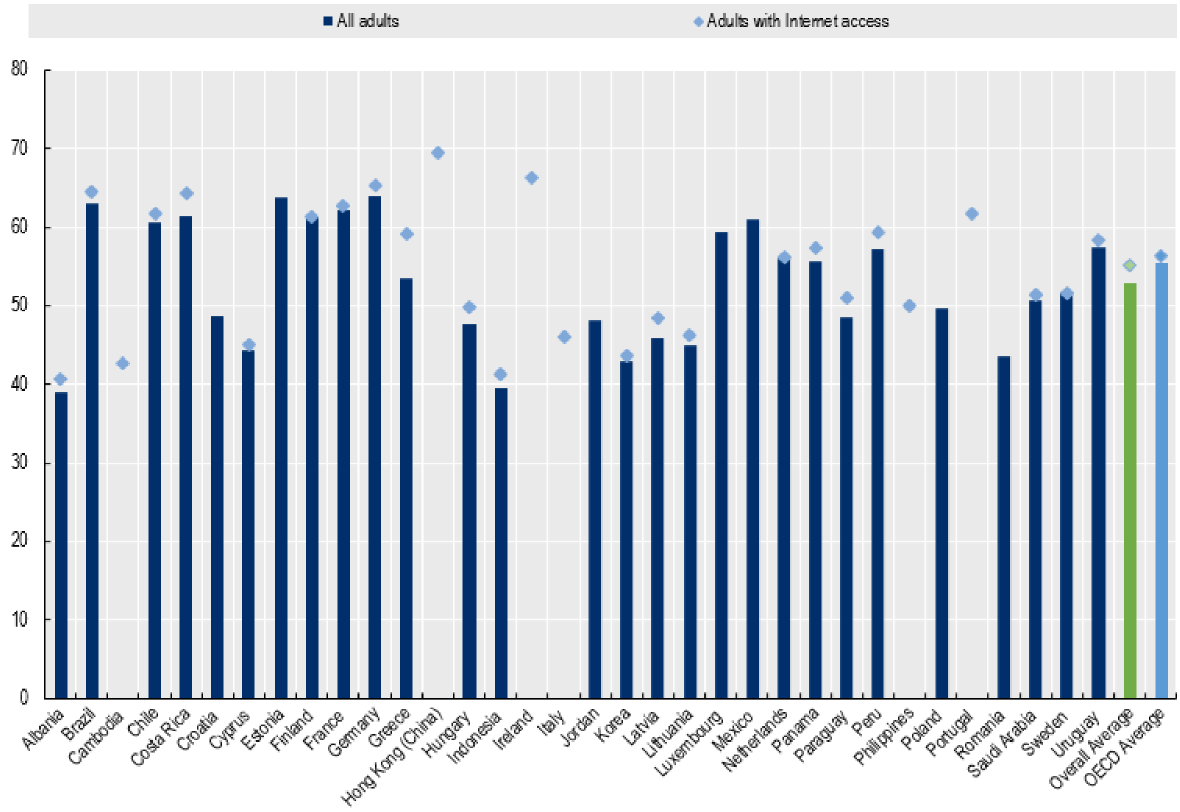
(1) Croatia, Estonia, Jordan, Luxembourg, Mexico, Poland and Romania: The digital financial literacy score is reported for all adults, but not for adults with Internet access, because surveys in these countries did not ask respondents whether they have Internet access.

(2) Cambodia, Hong Kong (China), Ireland, Italy, the Philippines and Portugal: The digital financial literacy score is reported for adults with Internet access, but not for all adults, because surveys in these countries asked at least one question included in the digital financial literacy score only to respondents who indicated they had Internet access.

(3) Finland, the Netherlands and Sweden: The digital financial literacy scores reported in the table is the same for all adults and for adults with Internet access because surveys in these countries were conducted entirely online.

Figure 3.1. Digital financial literacy

Average digital financial literacy scores (out of 100) across all adults and among those with Internet access



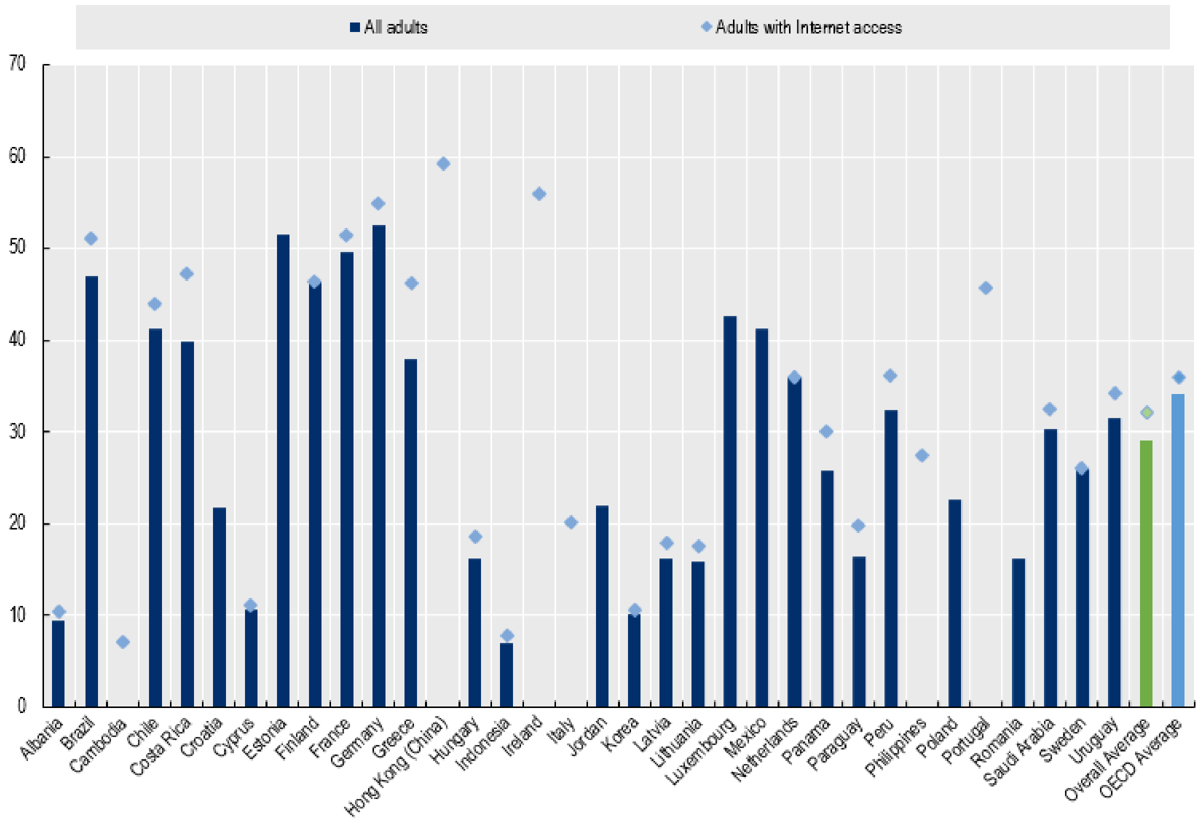
Notes: This figure includes two data points to reflect calculations of digital financial literacy scores (1) across the entire sample and (2) across the sub-sample of respondents who indicated they had access to the Internet. Please note that for some participating countries and economies, both calculations are available whereas for others only one of the two scores are available.
The samples from Jordan, Mexico and Saudi Arabia may not be representative of the entire adult population. See Annex A for more details.
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Minimum target score on digital financial literacy

The minimum target score on digital financial literacy is defined as a scoring at least 70 points out of 100 points. Figure 3.2 reports the percentage of adults who reach the minimum target score on digital financial literacy, showing wide variation across countries and economies. Across all participating countries and economies, 29% of adults reach the minimum target score on digital financial literacy (at least 70 points out of 100). Across participating OECD countries, 34% of adults reach the minimum target score on digital financial literacy.

Figure 3.2. Minimum target score on digital financial literacy

Percentage of adults who scored at least 70 points on digital financial literacy, across all adults and among those with Internet access



Notes: This figure includes two data points to reflect calculations of minimum digital financial literacy scores (1) across the entire sample and (2) across the sub-sample of respondents who indicated they had access to the Internet. Please note that for some participating countries and economies, both calculations are available whereas for others only one of the two scores are available.
The target minimum score of digital financial literacy is defined as scoring at least 70 out of 100 points.
The samples from Jordan, Mexico and Saudi Arabia may not be representative of the entire adult population. See Annex A for more details.
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Digital financial literacy questions

The 2022 Toolkit contains ten questions to measure digital financial literacy. Figure 3.3 presents the percentage of adults who received one point for each digital financial literacy question, averaged across all participating countries and economies and across participating OECD countries.

One digital financial literacy question asks respondents if they agree or disagree with the statement “I share the passwords and PINs of my bank account with close friends.” While in some cases people might have good reasons for sharing passwords and PINs with family members (for instance of case of illness), it usually considered unsafe to share passwords and PINs with friends.

On average across participating countries and economies, 86% of adults do not share the passwords and PINs of their accounts with close friends (87% of adults across participating OECD countries).

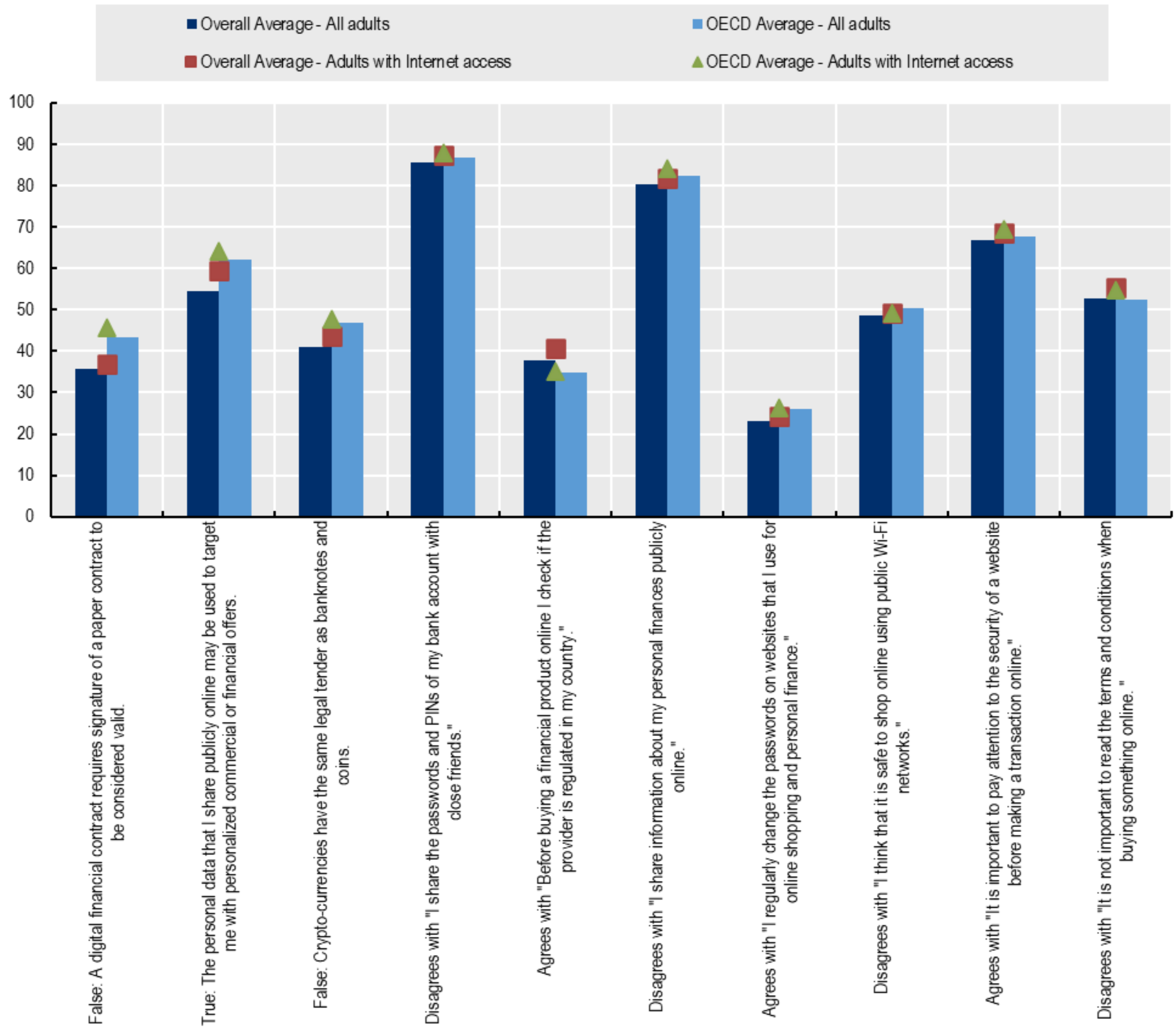
Another digital financial literacy question asks respondents if they agree or disagree with the statement “I share information about my finances publicly online.” On average across participating countries and economies, 81% do not share information about their finances publicly online (83% of adults across participating OECD countries).

While it is usually considered unsafe to share passwords and PINs, or information about finances publicly online, other responses point to potentially risky behaviours. Some 23% of adults on average across participating countries and economies report regularly changing their passwords on websites they use for online shopping or personal finance. Failing to regularly change passwords may put their personal information at risk for cyberattack. In addition, 37% of adults on average across participating countries and economies report checking to see if a provider of a financial product is regulated in their country before making a purchase. Failing to check may put these financial consumers at risk of financial loss or harm if in fact the provider is not regulated in their country. Table 3.3 in Annex D presents the percentage of adults by participating country and economy who received one point for each of the digital financial literacy questions.

Another digital financial literacy question tests respondents' perceptions of the safety of public Wi-Fi networks. On average across participating countries and economies, 49% of adults disagree with the statement "I think that it is safe to shop online using public Wi-Fi networks" (50% of adults across participating OECD countries). This means that many adults do not disagree with this statement, suggesting they may be engaging in risky behaviours. Table 3.2 in Annex D presents the percentage of adults by participating country and economy who disagree with the statement "I think that it is safe to shop online using public Wi-Fi networks."

Figure 3.3. Digital financial literacy questions

Percentage of adults who reported the following aspects of digital financial literacy, across all adults and among those with Internet access



Note: There are four data points to reflect calculations of the percentage of adults who answered each digital financial literacy question (1) across the entire sample and (2) across the sub-sample of respondents who indicated they had access to the Internet.
Source: OECD/INFE Survey of Adult Financial Literacy.

Digital financial literacy levels across socio-demographic groups

While it is helpful to look at overall digital financial literacy and its components across countries, the aggregate country-level scores often mask significant variation in digital financial literacy (and its components) across individual-level characteristics such as age, gender, level of education, labour force status and income.

Table 3.6 in Annex D reports differences in digital financial literacy levels associated with age, gender, level of education, labour force status and income, considering all these individual-level characteristics at the same time, on average across participating countries and economies.

Overall, the analysis of the digital financial literacy score and its components across socio-demographic groups suggests that:

- *Income*: Digital financial literacy levels are higher (6 points out of 100) among adults with higher incomes compared to adults with lower incomes.
- *Education*: Digital financial literacy levels are higher among adults who have a secondary and/or tertiary degree compared to adults who have not finished secondary education. This score-point difference is 6 points on average across all participating countries and economies and 7 points across participating OECD countries.
- *Age*: On average across all participating countries and economies, digital financial literacy levels are lower (3 points out of 100) among older adults aged 60 years or more compared to middle-aged adults.

Context for understanding digital financial literacy levels: digital activities and digital financial services

Digital activities: using digital devices and tools

Another way to put the results on digital financial literacy in perspective is to look at the frequency with which adults carry out non-financial tasks using digital devices and tools.

For instance, Table 3.7 in Annex D reports the percentage of adults across participating countries and economies who have written a document on a computer. On average across participating countries and economies, some 61% of adults have written a document on a personal computer (66% of adults across participating OECD countries). There is also much variation across countries; the percentage of adults who have written a document on a personal computer ranges from a low of 31% in Indonesia to a high of 93% in Luxembourg.

Table 3.7 in Annex D reports the percentages of adults who perform other activities using digital devices and tools. Key findings from this table include:

- A vast majority of adults (94%) across participating countries and economies have used a mobile phone.
- Many adults across the globe use digital devices and tools to look for information online. On average across participating countries and economies, four out of five adults have looked for information online.
- Using instant messaging applications is another digital tool that is frequently used by adults across the globe. Over 90% of adults in Estonia, Hong Kong (China), Jordan, Luxembourg, Portugal and Saudi Arabia have used instant messaging applications.

Using digital financial services

Many financial services can be acquired and managed online, including via mobile phones. The 2022 OECD/INFE Toolkit therefore included questions to see whether and to what extent adults use digital financial services. This includes actions such as opening a payment account or savings account online, checking the balance and transactions of an account, or managing financial products and services completely online. Table 3.8 in Annex D reports the percentages of all adults (and adults with internet access) across participating countries and economies who use digital financial services.

For example, the percentage of adults who have opened a payment or savings account online varies considerably across participating countries and economies. Some 84% of adults in Korea, 63% of adults in Sweden and 51% of adults in Estonia opened a payment or savings account online, compared to only 5% of adults in Paraguay who have done so. On average across all participating countries and economies, 27% of adults have opened a payment or savings account online (31% of adults across participating OECD countries).

The percentage of adults who have checked the balance or transactions of a bank account online also varies considerably across participating countries and economies. On average across all participating countries and economies, 67% of adults have checked the balance or transactions of a bank account online (77% of adults across participating OECD countries). Over 90% of adults in seven participating countries and economies have checked the balance or transactions of a bank account online.

Table 3.8 in Annex D also presents the percentage of adults by participating country and economy who have purchased goods or services online. On average across all participating countries and economies, 59% of adults overall have purchased goods and services online. On average across participating OECD countries, 71% of adults overall have made online purchases.

The percentage of adults who purchase goods and services online varies considerably across participating countries and economies: the percentage of adults who have purchased goods or services online ranges from 6% of adults in Paraguay to 97% of adults in Estonia.

In addition, the percentage of adults who have transferred money online varies considerably across participating countries and economies: the percentage of adults who have transferred money online ranges from 23% of adults in Paraguay to 93% of adults in Luxembourg.

Box 3.1. Crypto-assets

New digital assets such as crypto-assets (which include crypto-currencies) have rapidly expanded in recent years. As retail investor participation in capital markets grew during the COVID-19 pandemic, a desire for returns in the face of challenging and uncertain macro-economic conditions may have led some self-directed investors to more speculative investments in crypto-assets. However, crypto-assets can be highly volatile and thus it is important for individuals to understand the main features and the risks associated with these digital assets. Given the recent growth of crypto-assets, the 2022 Toolkit included survey items about awareness and holding of crypto-assets along with a question about the legal tender status of crypto-assets.

Awareness of crypto-assets

Awareness of crypto-assets varies widely across participating countries and economies. On average across all participating countries and economies, 41% of adults are aware of crypto-assets (49% of adults across participating OECD countries). Table 2.20 in Annex D reports the percentages of adults by participating country and economy who are aware of crypto-assets. Over two-thirds of adults in Spain[3] (84%), Germany (83%), Ireland (75%), Korea (70%) and Hong Kong (China) (69%) are aware of crypto-assets, while less than one-fifth of adults in Malaysia (16%), Peru (16%), France (15%), Yemen (4%) and Indonesia (3%) have heard of them.

Holding crypto-assets

While many adults are aware of crypto-assets, much fewer hold them. On average across all participating countries and economies, 3.2% of adults hold crypto-assets (3.8% of adults across participating OECD

[3] Spain asked respondents about awareness and holding of crypto-currencies rather than crypto-assets.

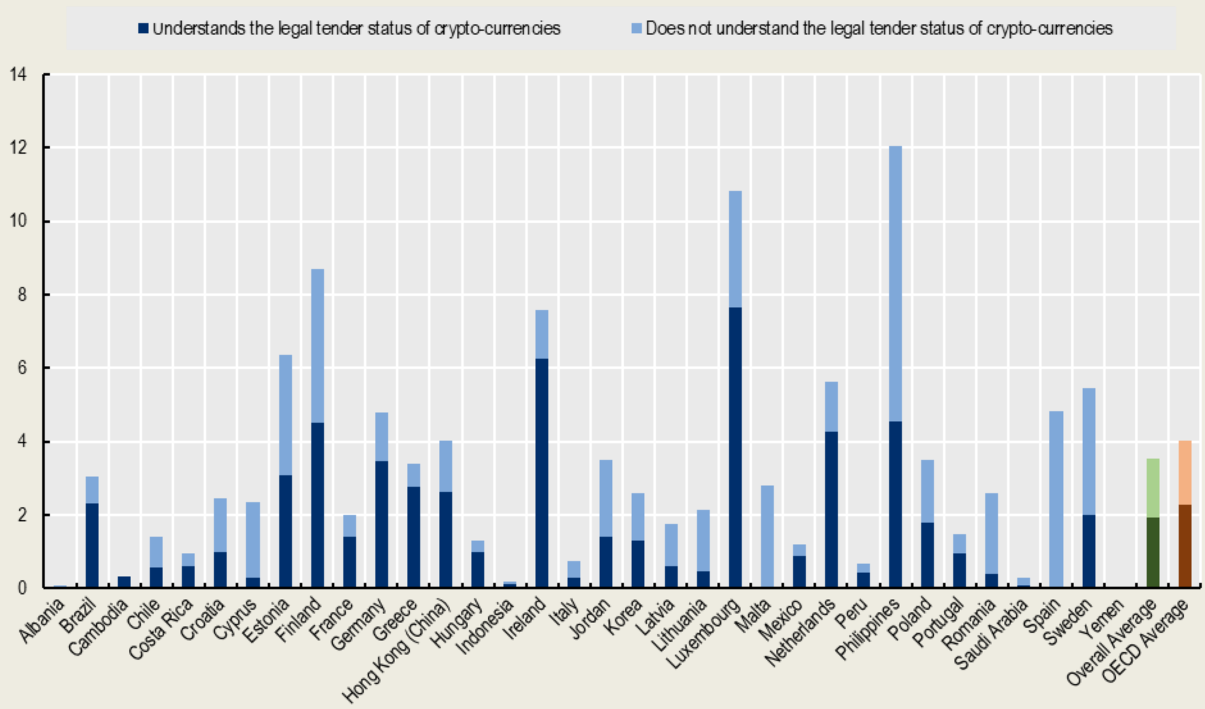
countries). Table 2.21 in Annex D reports the percentages of adults by participating country and economy who hold crypto-assets. Over 5% of adults in Luxembourg (11%), Finland (9%), Ireland (8%), Estonia (6%), the Netherlands (6%) and Sweden (6%) hold crypto-assets. Less than 2% of adults in ten participating countries and economies hold crypto-assets.

Knowledge about crypto-currencies

It is important for individuals, especially those who hold crypto-assets, to understand their main features. A survey item in the 2022 Toolkit asked respondents whether they thought that the statement “crypto-currencies have the same legal tender as bank notes and coins” was true or false. Figure 3.4 displays the percentage of adults who hold crypto-assets, by their answer to this statement, across participating countries and economies. In many participating countries and economies, not all adults who hold crypto-assets also correctly answered that this statement is false (i.e., crypto-currencies do not have the same legal tender as bank notes and coins).

Figure 3.4. Holding crypto-assets and digital financial literacy

Percentage of adults who hold crypto-assets, by digital financial literacy knowledge



Notes: These results should be interpreted with caution, as they are based on a small number of observations.
The results for Jordan, Mexico and Saudi Arabia should be interpreted with caution as the national samples may not be representative of the entire adult population. See Annex A for further details.
Source: OECD/INFE Survey of Adult Financial Literacy.

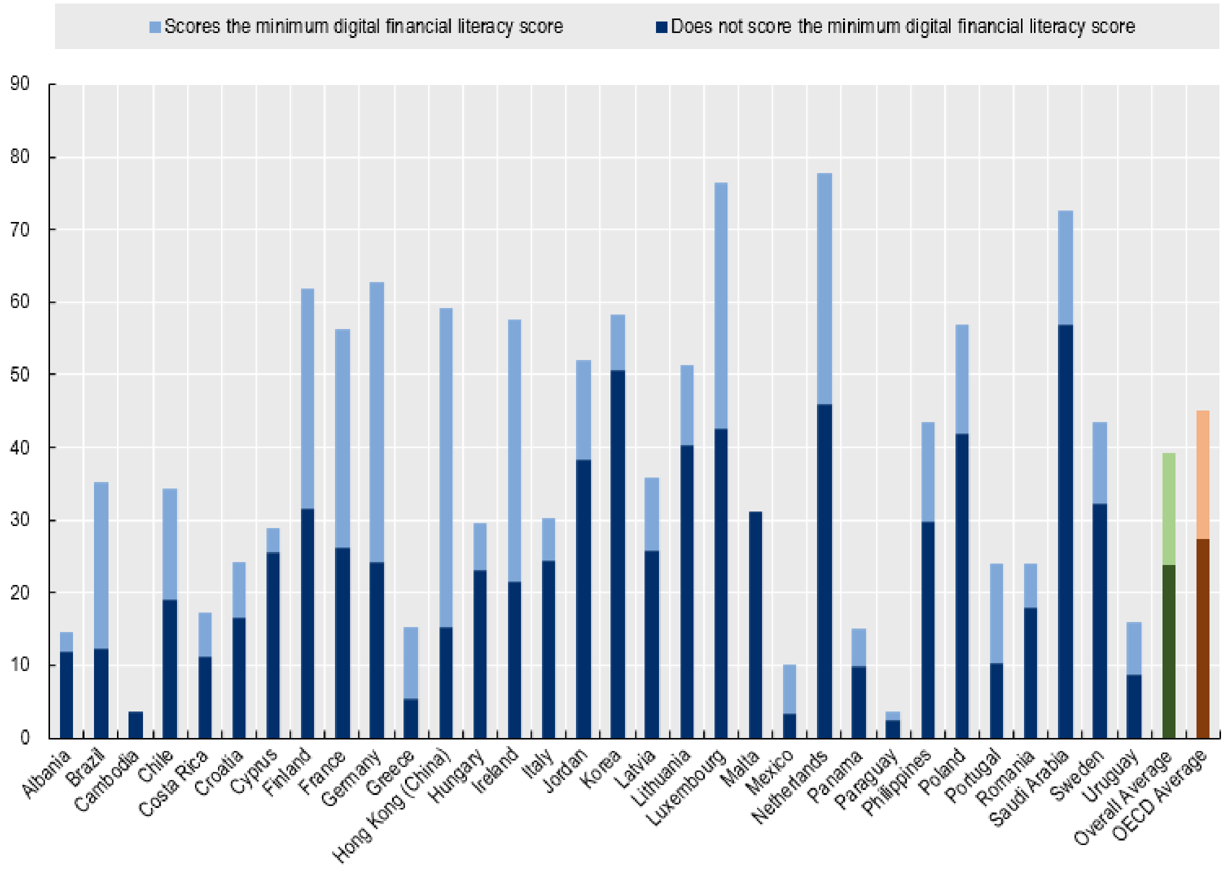
Digital financial services and financial literacy

Given the increased digitalisation of the financial sector, people have more options to acquire and manage financial products and services online. It is therefore important for policymakers to be familiar with the extent to which adults manage financial products and services online in relation to digital financial literacy levels. This can help policymakers understand whether and to what extent adults who engage with digital financial services also display the requisite digital financial knowledge, behaviour and attitudes to make sound financial decisions.

Figure 3.5 displays the percentage of adults who manage financial products and services online by digital financial literacy across participating countries and economies. On average across participating countries and economies, 38% of adults who manage financial products and services online also reached the minimum target score on digital financial literacy. This means that many adults who engage with digital financial services may not display the digital knowledge, behaviour or attitudes to effectively manage digital financial products and services.

Figure 3.5. Managing financial products and services online and digital financial literacy

Percentage of adults who manage financial products and services online, by digital financial literacy



Note: The minimum target score on digital financial literacy is defined as scoring at least 70 out of 100 points on digital financial literacy.
Managing financial products and services online is constructed from survey item QP9_6 which asks "In the last 12 months, how often have you managed financial products and services (such as savings, investments, credit, insurance) online?" Responses of sometimes, often, and very often are coded as (1), all other cases are coded as (0).
The results for Jordan, Mexico and Saudi Arabia should be interpreted with caution as the national samples may not be representative of the entire adult population. See Annex A for further details.
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

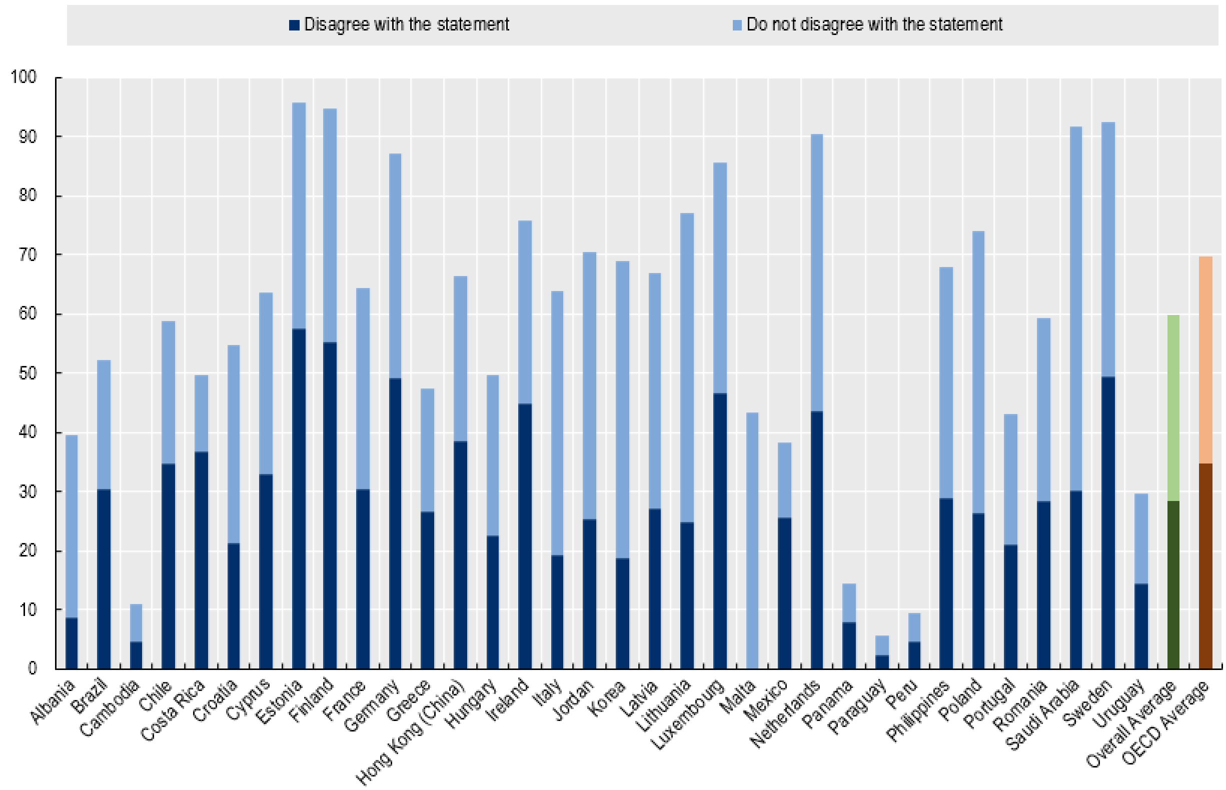
Along with managing financial products and services online, many consumers also purchase goods or services, including financial products and services, online. Yet the safety (or lack thereof) of the Internet connection and of websites consumers use may put them at risk for harm if they are not using a secured and verified Internet connection. It is therefore important for adults who shop online to understand the (lack of) safety of public Wi-Fi.

Figure 3.6 displays the percentage of adults who shop online by whether they agree or disagree with the statement "I think it is safe to shop online using public Wi-Fi networks."

On average across participating countries and economies, 49% of adults who shop online recognize that it is generally considered unsafe to shop online using public Wi-Fi networks, i.e. they *disagree* with the statement (50% of adults who shop online across participating OECD countries disagree with the statement). This means that many adults who shop online believe that public Wi-Fi networks are safe for such activities, and so these adults may be exposing themselves to harm.

Figure 3.6. Shopping online and digital financial literacy

Percentage of adults who shop online, by perception of the safety of public Wi-Fi



Notes: The statement reads: "I think it is safe to shop online using public Wi-Fi networks."
The results for Jordan, Mexico and Saudi Arabia should be interpreted with caution as the national samples may not be representative of the entire adult population. See Annex A for further details.
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

4 Financial well-being

Key results

- Across participating countries and economies, the average financial well-being score is 42 out of 100 points (47 out of 100 across participating OECD countries).
- The score on financial resilience is 46 out of 100 across participating countries and economies (52 for participating OECD countries). The score on the subjective component of financial well-being across participating countries and economies is 38 out of 100 (41 for participating OECD countries).
- Financial well-being levels are significantly higher among adults with higher incomes compared to adults with lower incomes. On average across participating countries and economies, the score-point difference in financial well-being associated with income is 20 points (22 points on average across participating OECD countries). Differences in the financial resilience score associated with income are even higher: on average across participating countries and economies, high income adults have a financial resilience score that is 23 points higher than low-income adults (25 points on average across participating OECD countries).
- Adults who reach the minimum target financial literacy score (at least 70 points out of 100) have higher levels of financial well-being by 10 score points, on average across participating countries and economies. Adults who display high levels of financial literacy also have, on average, higher levels of financial resilience (by 12 score points on average across participating countries and economies).

The concept of individual financial well-being and the related concept of financial resilience have gained prominence in recent years. The 2008 Global financial crisis highlighted the need to focus on financial well-being and to ensure that people's interactions with the financial system was meaningful and beneficial to people's needs. Since then, the impact of the COVID-19 pandemic and cost of living pressures have highlighted the importance of protecting and supporting individuals and households to be able to face unexpected financial shocks. Financial education aims to make individuals better prepared at managing their money and finances, reaching their financial goals and avoiding stress related to financial problems, thereby improving individuals' financial well-being.

The OECD/INFE is conducting further work to define and measure financial well-being, considering that financial well-being is recognised as a goal of financial inclusion, financial consumer protection and financial literacy policies (OECD, 2024 Forthcoming[27]). According to the existing literature, financial well-being has to do with the extent to which individuals can meet their current financial needs and commitments (and whether they can do so comfortably), they can cope with negative financial shocks, they feel secure about their own financial future, and they have the ability to make choices that allow them to meet their future financial goals. There is a general recognition in the literature that financial well-being has both an objective and subjective angle (Sorgente and Lanz, 2017[28]; UNSGSA, 2021[29]).

The OECD/INFE Toolkit offers the opportunity to develop a measure of financial well-being in an international context, based on the questions available in the survey. Such measure will inform further work of the OECD/INFE and will offer a useful contribution to the efforts of other organisations working in this field at a national and international level.

The financial well-being score reported in this chapter is based on twelve variables that cover the different components of financial well-being discussed above. Four questions are related to financial resilience, and can be taken to represent objectives aspects of financial well-being related to the availability of financial resources to cope with negative financial shocks. Eight of the twelve questions are related to subjective elements of financial well-being, such as satisfaction with one's financial situation and feelings of stress about money matters. More details about these variables are included in Annex C.

Given the different focus of the questions on objective and subjective aspects of financial well-being, and given the large number of subjective questions, the report presents results separately for the two components, and gives them equal weight in the overall financial well-being score. Each component (objective and subjective) was rescaled to range between 0 and 50; these two scores were then added together to produce the overall financial well-being score. Overall financial well-being scores therefore range from 0 to 100, with higher scores indicating higher levels of financial well-being.

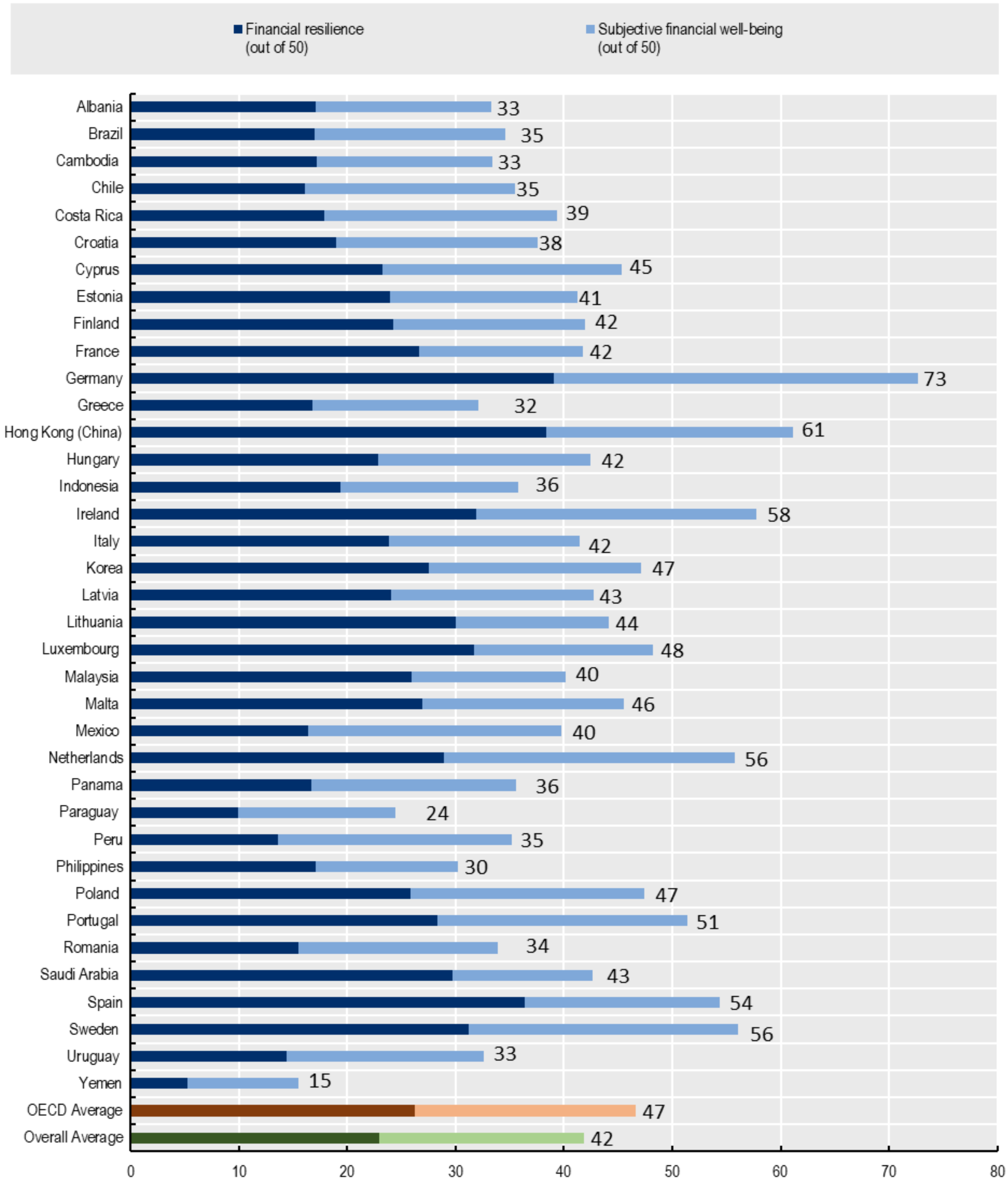
Levels of financial well-being

Overall levels of financial well-being vary widely across participating countries and economies. The overall average financial well-being score across participating countries and economies is 42 out of 100 (47 out of 100 across participating OECD countries). Figure 4.1 reports average financial well-being scores across participating countries and economies.

Some of the highest overall levels of financial well-being are reported among adults in Germany (73), Hong Kong (China) (61), Ireland (58), the Netherlands (56) and Sweden (56). Nineteen of the participating countries and economies have average levels of financial well-being above the overall average of 43. However, nineteen participating countries and economies have average levels of financial well-being below the overall average.

Figure 4.1. Financial well-being

Average financial well-being scores



Notes: The results for Mexico and Saudi Arabia should be interpreted with caution as the national samples may not be representative of the entire adult population. See Annex A for further details.

The results for Malaysia and Spain presented in this chapter are drawn from samples taken in 2021 using the 2018 Toolkit. See Annex A for further details.

Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Tables 4.2 and 4.3 in Annex D report the average scores on the objective and subjective components of financial well-being.

The score on financial resilience across participating countries and economies is 46 out of 100 (52 out of 100 across participating OECD countries). Some 22 participating countries and economies have average financial resilience scores above the overall average. Some of the highest overall levels in financial resilience are among adults in Hong Kong (China) (77), Germany (88) and Spain (73).

The score on the subjective component of financial well-being across participating countries and economies is 38 out of 100 (41 out of 100 across participating OECD countries). Sixteen participating countries and economies have overall average subjective financial well-being scores above the overall average, whereas twenty participating countries and economies have subjective financial well-being levels below the overall average. Some of the highest levels in subjective financial well-being are among adults in Germany (67), Ireland (52) and the Netherlands (54).

Responses to individual financial well-being questions

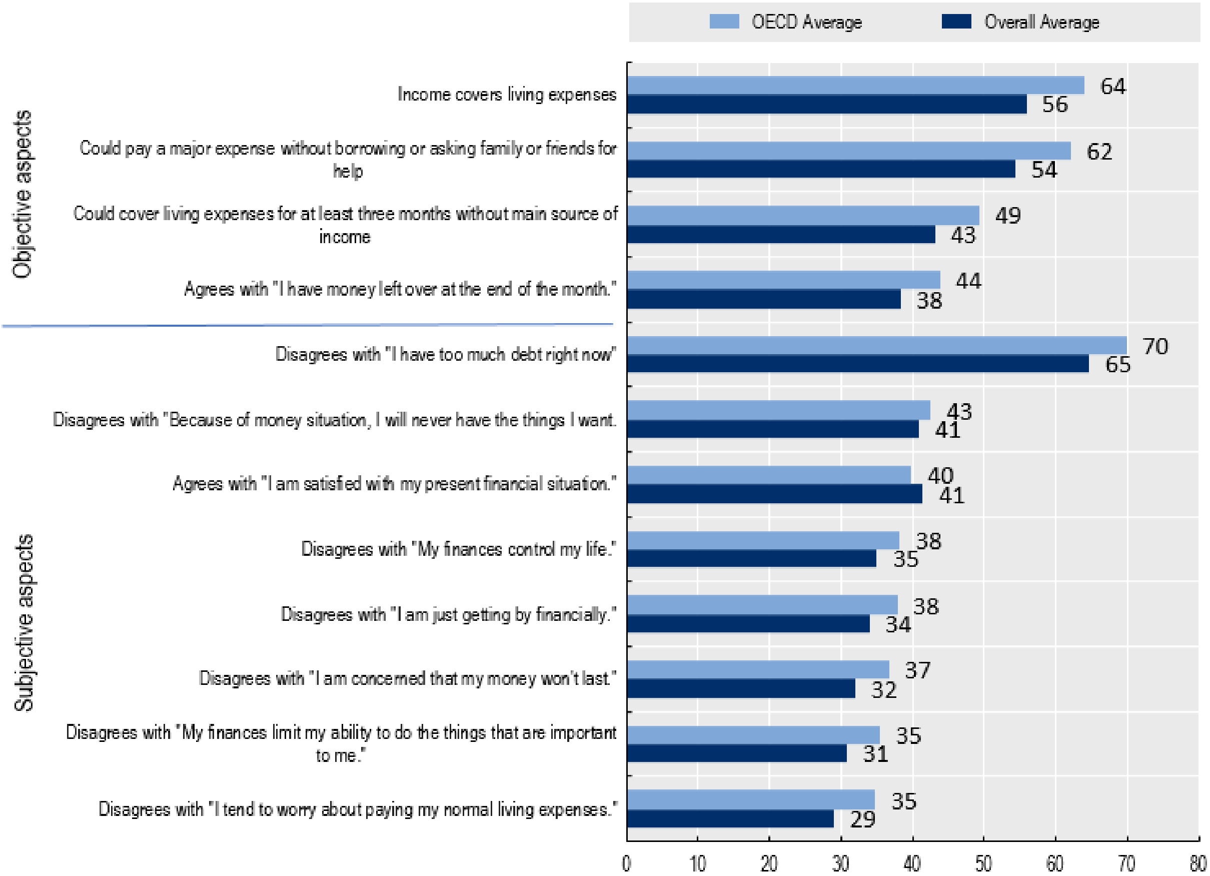
The 2022 Toolkit contains twelve questions to measure financial well-being. Four of the twelve questions are related to financial resilience, and can be taken to represent objectives aspects of financial well-being related to the availability of financial resources to cope with negative financial shocks. These questions ask respondents whether their income covered living expenses in the last 12 months, how long they could continue to cover living expenses without borrowing or moving house if they lost their main source of income, if they could pay a major expense without borrowing money or asking family or friends to help, and whether or not they have money left over at the end of the month.

Eight of the twelve questions measure subjective aspects of financial well-being, or adults' perceptions and feelings about their financial situation. This includes questions asking respondents whether they are satisfied with their current financial situation, whether they feel they have too much debt and if they worry about paying living expenses. Other questions ask respondents whether they are concerned their money won't last, if they feel that their financial situation controls their life, and to what extent their finances limit their ability to do things that are important to them.

Figure 4.2 reports the percentage of adults who received one point for each financial well-being question, averaged across all participating countries and economies and across participating OECD countries.

Figure 4.2. Financial well-being questions

Percentage of adults who reported the following aspects of financial well-being



Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

In terms of financial resilience, on average across participating countries and economies more than half of adults (54%) reported that they could face a major expense, equivalent to their monthly income without borrowing the money or asking family or friends to help (62% on average across participating OECD countries). In addition, more than half (56%) had not experienced situations where their income did not cover their living costs in the 12 months prior to the survey (64% on average across participating OECD countries).

On average across participating countries and economies, fewer than half adults (43%) could continue to cover their living expenses for at least three months without borrowing money or moving house, if they lost their main source of income (49% on average across participating OECD countries). Furthermore, only 38% of adults across all participating countries and economies report having money left over at the end of the month. This suggests that many adults could quickly find themselves in precarious financial situations in the event of an adverse economic shock or unexpected expense.

In terms of subjective aspects of financial well-being, only 41% of adults on average across participating countries and economies agree that they are satisfied with their present financial situation (40% on average across participating OECD countries). On average across participating countries and economies, 35% of adults do not feel that finances control their lives and 32% do not feel concerned that their money won't last. Only 29% of adults report that they do not worry about paying their normal living expenses (35% of adults across OECD countries). These feelings towards one's personal financial situation are consistent with the findings that many adults do not have money left over at the end of the month and/or have experienced situations wherein their income did not cover their living expenses.

Table 4.4 in Annex D reports the percentage of adults by country or economy who reported each aspect of financial well-being.

Box 2. Changes in financial resilience over time

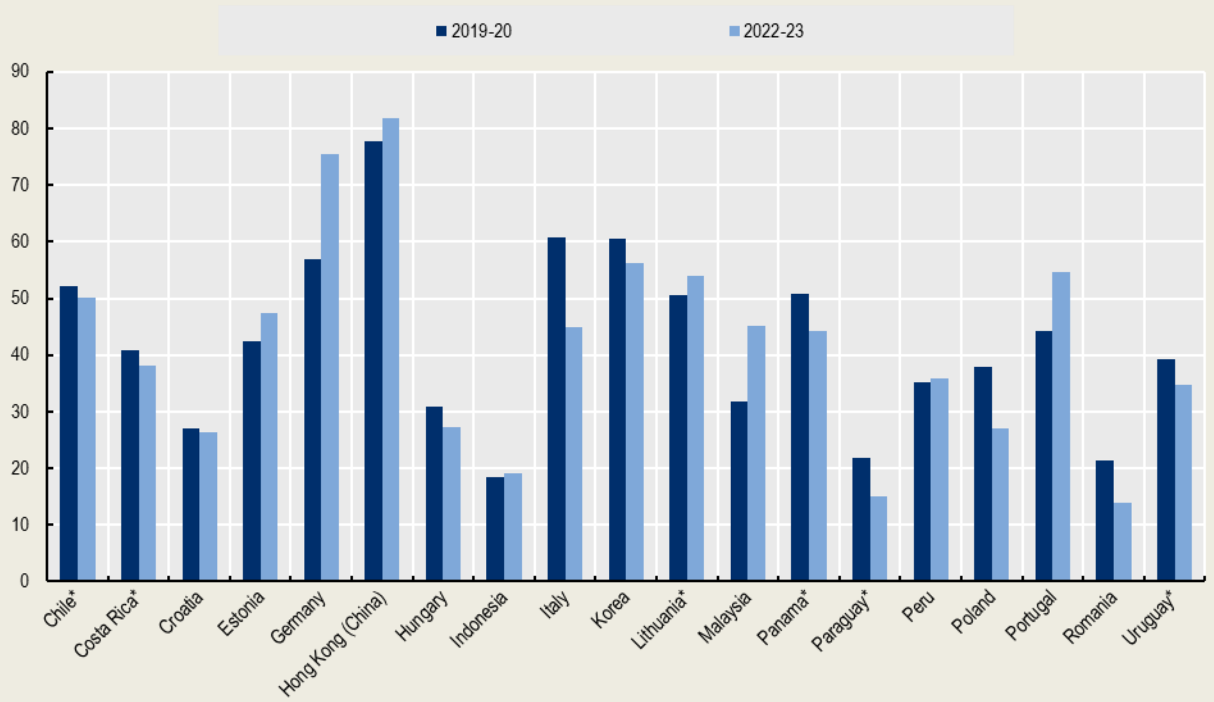
Table 4.14 in Annex D shows changes in two aspects of financial resilience from the last round of data collection in 2019-20 to the current round of data collection in 2022-23 across 24 countries and economies with available data.

Given that the previous data collection took place in 2019-20 before the COVID-19 pandemic, it is interesting to observe how financial resilience has evolved since the pandemic and during the cost-of-living crisis beginning in 2022. One aspect of financial resilience is the ability to cope when faced with an adverse economic shock or financial stress, such as income loss. Figure 4.3 presents the percentage of adults who reported the ability to cover their living expenses for at least three months, without having to borrow, if they were to lose their main source of income, from 2019-20 to 2022-23.

In many participating countries and economies, the percentage of adults who can cover living expenses for at least three months without their main source of income decreased from 2019-20 to 2022-23. This difference is most pronounced in Italy (decrease by 16 percentage points) and Poland (decrease by 11 percentage points). However, in eight participating countries and economies, the percentage of adults who report the ability to cover living expenses for at least three months without their main source of income increased from 2019-20 to 2022-23. This difference is largest in Germany (increase by 19 percentage points) and Malaysia (increase by 13 percentage points).

Figure 4.3. Changes in financial resilience

Changes in the percentage of adults who could cover living expenses for at least three months if they lost their main source of income, from 2019-20 to 2022-23



Notes: These results are based on a comparison of 2019-20 to 2022-23 data.
For countries marked with an asterisk, the 2019-20 data are based on the recollection of respondents elicited during the 2023 survey.
For countries not marked with an asterisk, the 2019-20 data are based on data collected in 2019-20 drawn from OECD (2020), OECD/INFE 2020 International Survey of Adult Financial Literacy.
Source: OECD/INFE Survey of Adult Financial Literacy.

Financial well-being levels across socio-demographic groups

As discussed in the existing literature, financial well-being varies with a variety of individual and aggregate contextual factors (OECD, 2024 Forthcoming[27]). The data collected through the OECD/INFE 2022 Toolkit allows to explore levels of financial well-being across various individual-level characteristics such as age, gender, level of education, labour force status, and income.

Figure 4.4 reports average differences in financial well-being levels, considering these various individual-level characteristics at the same time, across participating countries and economies. Tables 4.9 and 4.10 in Annex D report the variation in the objective and subjective components of financial well-being associated with socio-demographic characteristics.

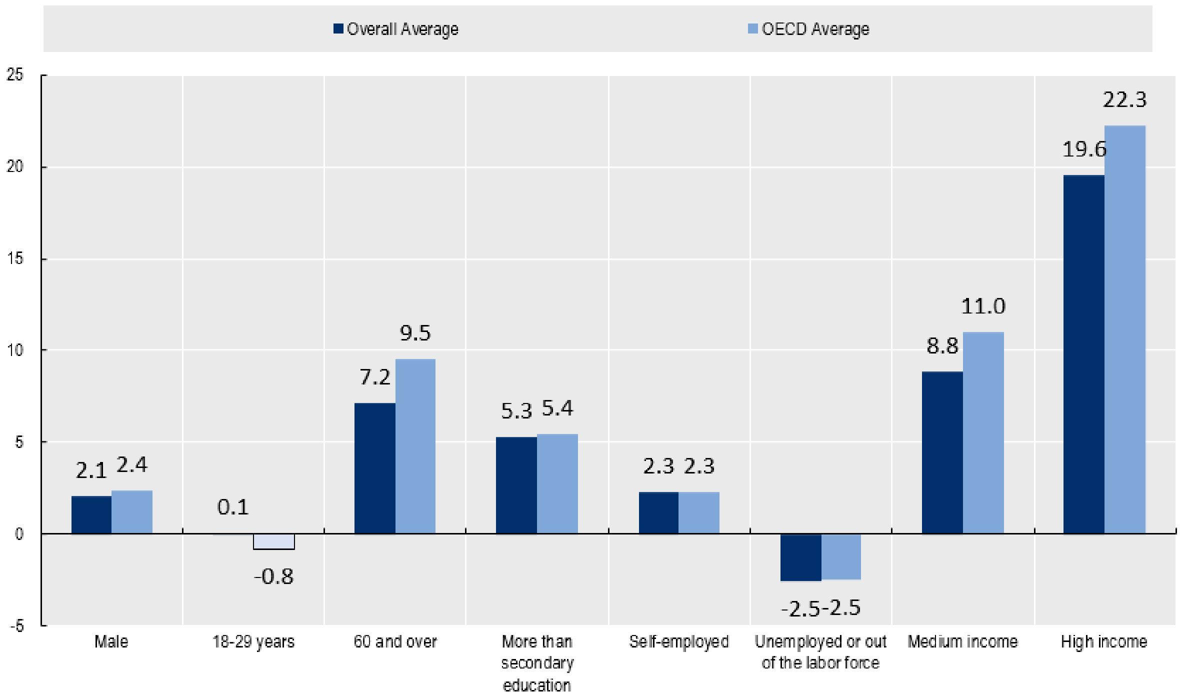
- *Income*: Financial well-being levels are significantly higher among adults with higher incomes compared to adults with lower incomes. On average across participating countries and economies, this score-point difference is 20 points (22 points across participating OECD countries). Differences in the financial resilience scores associated with income are even higher: on average across participating countries and economies, high income adults have a financial resilience score that is

23 points higher than low-income adults (25 points on average across participating OECD countries).

- *Education*: Financial well-being levels are significantly higher among adults who have a tertiary degree compared to adults who have not finished secondary education, on average in participating countries and economies.
- *Age*: On average in participating countries and economies, financial well-being levels are significantly higher among adults 60 years or older compared to adults aged 30-59 years old. On average in participating countries and economies, young people aged 18-29 have lower financial resilience scores than middle-aged adults.
- *Gender*: on average in participating countries and economies, men have slightly higher levels of financial well-being than women by 2 points out of 100. Men also have slightly higher levels of financial resilience than women (by 3 points out of 100 on average across participating countries and economies).

Figure 4.4. Variation in financial well-being

Score-point differences associated with characteristics of the respondent



Notes: These results are based on a linear regression (OLS), with sampling weights (if available for a given country or economy).
Comparison categories are: women, respondents 30-59 years old, respondents with upper secondary education or less, employees, and respondents with low incomes.
Statistically significant values are marked in bold (5% level).
Source: OECD/INFE 2023 Survey of Adult Financial Literacy.

Financial well-being and financial literacy

The OECD Recommendation on Financial Literacy recognises individual financial well-being as the ultimate goals of financial literacy policies and programmes (OECD, 2020). It is therefore important to consider the relationship between levels of financial literacy and financial well-being, while also considering other potentially related factors.

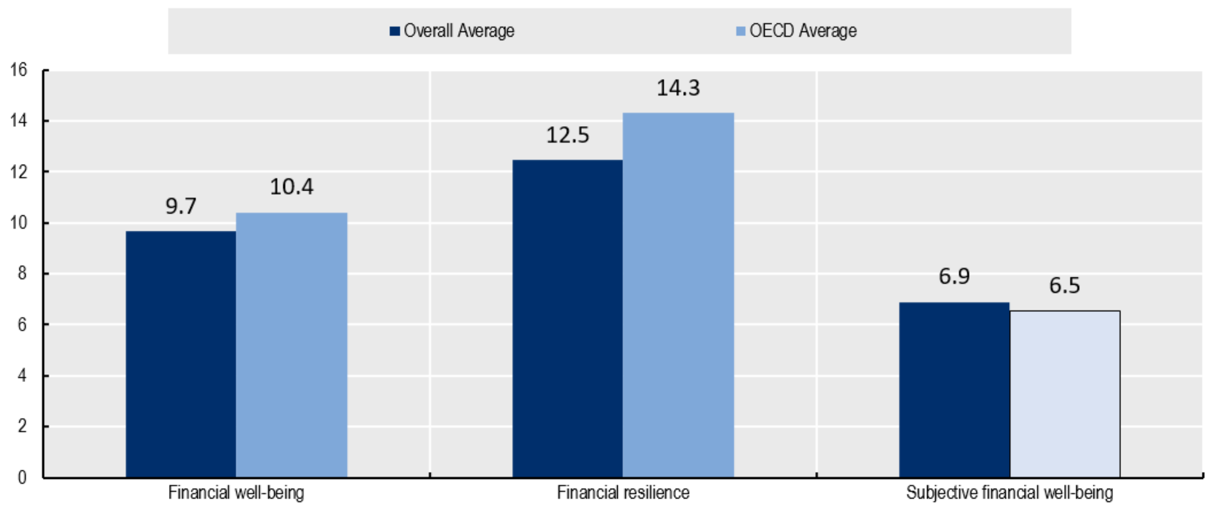
Figure 4.5 shows score-point differences on overall financial well-being, financial resilience, and subjective financial well-being for adults who meet the minimum target score of financial literacy (at least 70 points out of 100) compared to adults who do not meet the minimum target score, taking into account individual-level characteristics (such as age, gender, level of education, labour force status, and income) and holding of financial products.

Adults who scored at or above the minimum target financial literacy score have higher levels of overall financial well-being, financial resilience and subjective financial well-being than adults who scored below the minimum target financial literacy score. For example, adults who reached the minimum target score on financial literacy (at least 70 points out of 100) have higher levels of financial well-being than adults who scored below the minimum target score; on average, this score-point difference is 10 points across all participating countries, taking into account individual-level characteristics and holding of financial products.

Adults who reached the minimum target score for financial literacy also have higher levels of financial resilience; this score-point difference is 13 points across all participating countries and economies (14 points across participating OECD countries), taking into account individual-level characteristics and holding of financial products.

Figure 4.5. Financial well-being and financial literacy

Score-point differences in financial well-being associated with financial literacy, after taking individual characteristics into account



Notes: These results are based on a linear regression (OLS), with sampling weights (if available for a given country).
Comparison categories are: those who do not score the minimum target financial literacy score, those who do not hold any financial products, women, respondents 30-59 years old, respondents with upper secondary education or less, employees, and respondents with low incomes.
Statistically significant values are marked in bold (5% level).
The minimum target score of financial literacy is defined as scoring at least 70 out of 100 points.
Source: OECD/INFE Survey of Adult Financial Literacy.

5 Policy suggestions

Key results highlighted in this Report reveal that:

- Financial literacy levels can be improved to support sound financial decisions in challenging economic contexts. Results from this latest coordinated measurement exercise reveal that there is room for improvement in financial literacy competencies: the overall average financial literacy score across all participating countries and economies is 60 points out of 100 points.
- Digital financial literacy levels may not be sufficient in light of the opportunities and risks posed by digital financial services. Results reveal that digital financial literacy levels are 53 out of 100 points across participating countries and economies.
- Higher financial literacy is associated with greater individual financial well-being. Results indicate that adults who reach the minimum target financial literacy level also have significantly higher levels of financial well-being and financial resilience.

Based on these key results, it is possible to draw a series of policy suggestions for policymakers and stakeholders to consider as they develop financial literacy national strategies and programmes.

Continue to improve basic financial knowledge to support sound financial decisions in the current economic-financial context

Results indicate that in many participating countries and economies, some areas of basic financial knowledge are particularly weak and have remained so since previous assessments (OECD, 2016[8]; OECD, 2020[4]), namely simple and compound interest as well as applying inflation in a real life context. Less than one-third of adults across participating countries and economies correctly understood both simple and compound interest calculations. These financial knowledge competencies are particularly important for adults who use savings and credit products as these are concepts that affect basic money management and the ability to build financial resilience. Strengthening understanding of these concepts would support individuals to make sound financial decisions in the face of challenging economic contexts, such as the current landscape characterised by cost-of-living pressures in many countries.

Strengthen behaviours and attitudes that are more likely to support financial resilience and well-being

The OECD Recommendation on Financial Literacy identifies financial well-being as a goal of financial literacy and financial education (OECD, 2020[1]). Results in Chapter 4 of this report support the idea that financial literacy can support greater financial resilience and well-being, as adults who reach the minimum target financial literacy level also have significantly higher levels of financial well-being and financial resilience. Not only do individuals need to be supported to understand basic financial knowledge concepts, but attention should be given to promoting certain financial behaviours and to fostering certain attitudes which can support financial well-being. This may also support goals beyond individual financial well-being, including supporting the development of competitive financial markets.

For instance, findings in this Report reveal that:

- Certain behaviours such as comparing products, shopping around when buying financial products and services, or seeking advice from independent sources are not common for a large part of the population in most participating countries. Considering trends about the use of crypto-assets and about self-directed investment decisions based on apps or alternative sources of advice (e.g. influencers), having sound financial behaviours in this respect can be key to preserve individual's financial resilience and well-being. Comparing financial products and services across providers and seeking advice from independent sources can help adults make informed decisions and choose products or services that best suit their needs.
- Furthermore, having the kind of critical thinking that is associated with shopping around and relying on formal and independent sources of information and advice can also be a useful skill as people try to protect themselves from more frequent fraud and scam attempts. Results presented in this Report show that most of the people who have fallen victim to financial frauds and scams (around two out of three adults) do not reach the minimum target level of financial literacy.
- Keeping track of money in the short term and sticking to long-term financial goals are also behaviours that can be improved in many countries to ensure that individuals develop effective strategies to ensure their financial resilience and well-being. These are particularly important behaviours considering the financial challenges that emerged for many during the COVID-19 pandemic and subsequent increases in cost-of-living pressures. Improving budgeting and planning may encourage adults to behave in financially prudent ways and increase the number of active savers by helping adults to set and plan for long-term financial goals.
- People may be encouraged to develop longer-term attitudes towards their personal finances. For example, more than half of adults across participating countries and economies find it more satisfying to spend money than to save it for the long-term, which may inhibit them from actively saving. Encouraging adults to develop longer-term attitudes towards their finances could also contribute to greater financial well-being.

Improve knowledge, behaviour and skills to support the safe and responsible use of digital financial products and services

Given the rapid pace of digitalisation of the financial sector, digital financial services are becoming increasingly widespread and even the "new normal" in many countries (OECD, 2020[24]; OECD, 2021[25]). This latest round of data collection revealed that many people regularly buy goods and services online and/or manage their finances online. Yet findings in this Report also reveal the level of skills related to digital financial services does not seem to match the current behaviour and needs. For example, 62% of those who report to manage their finances online do not reach the minimum target level of digital financial literacy. Some 51% of those who shop online do not understand that it may not be safe to use public Wi-Fi networks, while 14% of adults may not understand the risks of sharing the passwords and PINs of their bank account with friends. Many adults are also unaware of the potential risks of not paying attention to the security of a website before making a transaction, and even fewer adults report that they regularly change their passwords on websites used for online shopping and personal finance. Targeted policies or programmes to address gaps in digital financial knowledge, behaviour and attitudes can help adults safely engage with an increasingly digitised financial sector to make sound financial decisions.

Support people with the lowest financial literacy and well-being

Given the wide variation of financial literacy and digital financial literacy within countries and economies, it continues to be important to support those in the population with the lowest financial literacy, digital financial literacy and well-being. Policymakers should consider targeting relevant groups with tailored approaches to financial education provision. Findings in this Report point to differences in levels of financial literacy, digital financial literacy and financial well-being according to various individual-level characteristics. This includes individuals with low incomes and low education levels, however depending on the country context, they may also include other individuals such as women, young people or older people. Those who have the lowest financial literacy levels could also be the ones most in need of focused financial education efforts, as they tend to also have lower levels of financial well-being. Furthermore, the association between these individual-level characteristics (low incomes, low levels of education, etc.) and low financial literacy have not significantly changed since the previous survey in 2019/2020 (OECD, 2020[4]). Policy interventions at national level may need a targeted approach to financial literacy which takes into account the needs and characteristics of these different groups.

Continue to collect and analyse evidence on financial literacy, including with a focus on digital financial literacy, to make sure that financial literacy policies and programmes support individual financial well-being

The importance of assessing levels of financial literacy is recognized by the OECD Recommendation on Financial Literacy (OECD, 2022[22]) and this report is evidence that countries and economies across the globe, including OECD Member countries, are committed to collecting data on financial literacy to help inform their policies and programmes. Continuing to collect data using (appropriately updated versions of) the OECD/INFE Toolkit is important given an evolving economic and financial landscape, including digitalisation of the financial sector.

Countries and economies that have not participated in this coordinated measurement exercise are encouraged to do so in future exercises, not only to provide national baseline evidence but also to contribute to a growing international evidence base on adult financial literacy competencies, digital financial literacy competences, and financial well-being across the world.

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Annex A. Information on data collection

Country / Economy	Organisation commissioning the data collection	Timing of data collection	Method of data collection	Sample Size	Notes on the sample
Albania	Bank of Albania	10 – 29 June 2023	Face-to-face interviews	1000	
Brazil	Central Bank of Brazil	13 March – 10 April 2023	Face-to-face interviews	2000	
Cambodia	OECD (with support from the Government of Japan)	8 – 26 July 2023	Face-to-face (CAPI)	1000	
Chile	Development Bank of Latin America (CAF) in association with the Financial Market Commission (CMF)	29 April - 23 June 2023	Face-to-face interviews	1212	
Costa Rica	Development Bank of Latin America (CAF) in association with the Financial Institutions Superintendence (SUGEF)	7 June – 11 July 2023	Face-to-face interviews	1170	
Croatia	Croatian National Bank and Croatian Financial Services Supervisory Agency	2 March – 21 March 2023	Face-to-face interviews	1000	
Cyprus	OECD (with support from the European Commission DG REFORM)	27 June – 1 August 2023	Mixed method (telephone and face-to-face)	1255	
Estonia	Ministry of Finance	5 April – 3 May 2023	Web interviews (CAWI) and telephone interviews (CATI)	1119	
Finland	Ministry of Justice	25 January – 6 February 2023	Online	1806	

France	Bank of France	1 June – 20 June 2023	Mixed method: online (main) and telephone	2176	
Germany	German Federal Financial Supervisory Authority	19 September – 18 October 2022	Telephone interviews (CATI)	1000	
Greece	OECD (with support from the European Commission DG REFORM)	28 June – 25 July 2022	Telephone interviews (CATI)	1507	
Hong Kong (China)	Investor and Financial Education Council	18 August – 2 September 2022	Face-to-face interviews	1056	
Hungary	Money Compass Foundation and Central Bank of Hungary	14 July – 6 August 2022	Face-to-face interviews	1000	
Indonesia	Indonesian Financial Services Authority (OJK)	29 July – 16 September 2022	Face-to-face (CAPI)	1000	
Ireland	The Competition and Consumer Protection Commission	16 December 2022 – 1 March 2023	Telephone interviews	1505	
Italy	Bank of Italy	17 February – 27 March 2023	Telephone interviews (CATI)	4862	
Jordan	Central Bank of Jordan	26 February – 21 March 2023	Online	3536	Convenience sample of visitors of the CBJ's website, students and academic staff in several universities in Jordan, and customers of banks and non-banking financial institutions.
Korea	Bank of Korea and Financial Supervisory Service	29 August – 30 November 2022	Face-to-face	2400	
Latvia	Central Bank of Latvia	4 October – 3 November 2022	Face-to-face	1007	
Lithuania	Bank of Lithuania	16 March – 25 April 2023	Telephone and face-to-face	1068	
Luxembourg	ABBL foundation for financial education (ABBL) and the Financial Sector Surveillance Commission (CSSF)	15 – 30 December 2022	Online	1017	

Malaysia	Bank Negara Malaysia	October – December 2021	Face-to-face (CAPI)	3007	The results presented in this Report are based on a survey conducted in 2021 using the 2018 Toolkit.
Malta	Ministry of Social Policy and Children's Rights	June – July 2023	Online and CATI	1005	
Mexico	Bank of Mexico	December 2022	Face-to-face	2060	Sample representative of people living in cities with over 50,000 inhabitants
Netherlands	Ministry of Finance	22 November – 5 December 2022	Online	1050	
Panama	Development Bank of Latin America (CAF) and the Superintendency of Banks	30 March – 29 April 2022	Face-to-face	1200	
Paraguay	Development Bank of Latin America (CAF) and Ministry of Finance	8 – 31 July 2022	Face-to-face	1200	
Peru	Development Bank of Latin America (CAF) and the Superintendency of Banking, Insurance and Private Pension Funds (SBS)	10 – 29 December 2022	Face-to-face	1200	
Philippines	OECD (with support from the Government of Japan)	3 August – 14 September 2023	Face-to-face (CAPI)	1000	
Poland	National Bank of Poland	23 January – 13 February 2023	Face-to-face (CAPI)	1000	
Portugal	Bank of Portugal, Portuguese Securities Market Commission and Portuguese Insurance and Pension Funds Supervisory Authority (ASF)	6 January – 13 February 2023	Face-to-face	1473	
Romania	Institute for Financial Studies Foundation	31 January – 21 February 2023	Face-to-face	1005	
Saudi Arabia	Saudi Central Bank	13 November 2022 – 4 February 2023	Face-to-face (CAPI)	2059	Sample representative of the urban and semi-urban population
Spain	Bank of Spain	2 November 2021 – 23 July 2022	Telephone and face-to-face	7764	The results presented in this

					Report are based on a survey conducted in 2021 using the 2018 Toolkit.
Sweden	Swedish Financial Supervisory Authority	5 November 2022 – 15 December 2022	Online	1007	
Thailand	The Bank of Thailand	Q4 2022	Face-to-face	12402	
Uruguay	Development Bank of Latin America (CAF) and the Central Bank of Uruguay	22 April – 26 May 2022	Face-to-face	1200	
Yemen	OECD (with support from the European Commission)	11 March – 1 April 2023	Telephone and face-to-face (CATI and CAPI)	1000	

Annex B. Descriptive statistics

Tables with descriptions of the sample in each participating country and economy are available as a separate Excel file at this link.

Annex C. Notes on methodology

Computing overall financial literacy scores

The overall financial literacy score is obtained as the sum of the three following scores: financial knowledge (7), financial behaviour (9) and financial attitudes (4). The raw score can take any value between 0 and 20; the final score is rescaled to range between 0 and 100.

Answers of don't know (-97), does not apply (-98), or refused to answer (-99) are not excluded from the analyses. Rather, these values are recoded according to the methodology listed in the Toolkit and shared below: these values are recoded either to values of zero (representing an incorrect response) or, for ordinal variables, as the "mid-point" in the scale (e.g. 3 if the scale is 1-5). As such, these answers are then included in the computations of financial knowledge scores, financial attitudes scores, financial behaviours scores and overall financial literacy scores.

Calculation of financial knowledge scores

The knowledge score is computed as the number of correct responses to seven financial knowledge questions (QK3 to QK7_3 in the Toolkit). The concept being tested in each of these questions is listed in the table below. The financial knowledge scores range between 0 and 7.

Question number	Question label	Text of the question	Creating financial knowledge scores
QK3	Time value of money	Five brothers are going to be given a gift of $1,000 in total to share between them. Now imagine that the brothers have to wait for one year to get their share of the $1,000 and inflation stays at <current rate of inflation in country> percent. In one year's time will they be able to buy:	1 for correct response [c, less than they could buy today; or d, it depends on the types of things that they want to buy if mentioned spontaneously] 0 in all other cases.
QK4	Interest on a loan	You lend $25 to a friend one evening and he gives you $25 back the next day. How much interest has he paid on this loan?	1 for correct response [Nothing, zero, "he didn't"] 0 in all other cases.
QK5	Simple interest calculation	Imagine that someone put $100 into a tax-free savings account with a guaranteed interest rate of 2% per year. They don't make any further payments into this account, and they don't withdraw any money. How much would be in the account at the end of the first year once the interest payment is made?	1 for correct response (102). 0 in all other cases.
QK6	Compound interest calculation	How much would be in the account at the end of five years?	1 for correct response to QK6 [a. more than $110] if and only if the response to calculation of interest plus principal (QK5) was all correct. 0 in all other cases.
QK7_1	Risk and return	True or False: An investment with a high return is likely to be high risk.	1 for a correct response [1/True]. 0 in all other cases.
QK7_2	Definition of inflation	True or False: High inflation means that the cost of living is increasing rapidly.	1 for a correct response [1/True]. 0 in all other cases.

QK7_3	Risk diversification	True or False: It is usually possible to reduce the risk of investing in the stock market by buying a wide range of stocks and shares.	1 for a correct response [1/True]. 0 in all other cases.

Calculation of financial attitudes scores

The following two statements (QS1_1 and QS3_11) are used to calculate the financial attitudes scores. The answer choices are a scale of 1-5 where 1= completely agree with the statement and 5= completely disagree with the statement. The attitude score is computed as the average response across these two attitude questions: i.e., the sum of the values for the two statements divided by two (after recoding to account for values -97, -98 and -99 as mentioned above). The average obtained should be rescaled to range from 0 to 4. The attitudes score, therefore, ranges from 0 to 4.

Question label	Text of the question
QS1_1	I find it more satisfying to spend money than to save it for the long term.
QS3_11	I tend to live for today and let tomorrow take care of itself.
QS1_3 (optional)*	Money is there to be spent.

Note: * In previous co-ordinated measurement exercises, the financial attitude score was calculated as an average of three statements, including also “Money is there to be spent” (QS1_3). However, “Money is there to be spent” became an optional question in the 2022 Toolkit and it was not asked in the surveys of a large number of countries participating in the 2022/2023 measurement exercise. For the sake of international comparison, for the 2022/2023 coordinated measurement exercise the optional financial attitude question was not included in the calculations of the financial attitude scores in any of the participating countries or economies irrespective of whether the question was asked on their survey.

Calculation of financial behaviour scores

The behaviour score is computed as a count of the number of “financially savvy” behaviours relating to budgeting (QF1 and QF2), active saving (QF3), avoiding borrowing to make ends meet (QF12) choosing products (various QP questions are used, creating two points on this score), keeping watch on financial affairs (QS1), striving to achieve goals (QS1), making considered purchases (QS2), paying bills on time (QS2). Financial behaviour scores range between 0 and 9.

Question number	Question label	Text of the question	Creating financial behaviour scores:
QF1 QF1_a QF2 Parts 1-6	Keeps track of money in the short term	Who is responsible for making day-to-day decisions about money in your household Do you make day-to-day decisions about your own money? Yes or No: Do you do any of the following for yourself or for your household? Make a plan to manage your income and expenses Keep a note of your spending Keep money for bills separate from day-to-day spending money Make a note of upcoming bills to make sure you don't miss them Use a banking app or money management tool to keep track of your outgoings Arrange automatic payments for regular outgoings	1 point if personally or jointly responsible for money management [QF1=1 or 2 OR QF_a=1] AND actively keeping track of money [at least 2 Yes responses on QF2]. 0 in all other cases.
QF3 Parts 1-8	Actively saving	In the past 12 months have you been personally saving money in any of the following ways, whether or not you still have the money? Please don't take into account any money paid into a pension, but think about all kinds of savings, such as building up a rainy-day fund or putting money aside for a special occasion. 1. Saving cash at home or in your wallet 2. Paying money into a savings/deposit account	1 point for any type of active saving (answers yes to any option including any relevant options added at the national level).

		3. Giving money to family to save on your behalf 4. Saving in an informal savings club 5. Buying bonds or time deposits' 6. Investing in crypto-assets 7. Investing in stocks and shares 8. Saving or investing in some other way, other than a pension	0 in all other cases.
QF11 QF12 Parts 1-6	Did not borrow to make ends meet	Yes or No: Sometimes people find that their income does not quite cover their living expenses. In the last 12 months has this happened to you personally? If yes, what did you do to make ends meet the last time this happened? 1. Drew from existing resources 2. Drew from additional resources 3. Accessed credit by using exiting contacts or resources 4. Borrowed from existing credit line 5. Accessed additional credit 6. Fell behind/ went beyond arranged amount	This variable takes the value of 0 if the respondent borrowed to make ends meet and 1 if the respondent did not borrow to make ends meet or did not face a shortfall. Specifically, it takes a value of 0 if the respondent answered Yes at any _3 [Access credit by using existing contacts or resources] or any _4 [Borrow from existing credit line] or any _5 [Access additional credit] or any _6 [Fall behind] or other country specific responses indicating that he/she used credit to make ends meet. 1 point is awarded in all other cases. Note that this means that missing data will therefore result in 1 point on this measure. This approach assumes that the % of missing data is small.
QP	Sought advice (from independent and non-independent sources)	Financial product awareness and product holding, making informed decisions about product choice	The variable choosing products is constructed by creating two intermediate variables, and then creating a derived variable. Country specific responses can also be coded. The two intermediate variables are the following: Variable 1: QP_D1: Tried to compare across providers taking value of: 1 if variable QP5 is equal to 1 or 4 (I considered several or I looked around but there were no others), and 0 otherwise. Note that 0 includes no recent product choice/not applicable. Variable 2: QP_D2: Sought information or advice taking values • 2 if yes at any of QP7_1 or QP7_2 or QP7_3 (Best-buy guidance / Price comparison website / Recommendation from independent financial adviser) • 1 if yes at any of QP7_4, QP7_5, QP7_6. or QP7_7

			(information from an advert or brochure, recommendation from friends etc., information from bank staff, or other information • 0 otherwise. Note that 0 includes no recent product choice. The final variable Qb7_new Tried to shop around or use independent info or advice takes the following values: • 2 if QP_D2 =2. The value of 2 indicates Used independent info or advice • 1 if QP_D1 =1 or QP_D2 =1. The value of 1 indicates Some attempt to make informed decision 0 Otherwise. The value 0 indicates 'Not shopped around and no attempt to make informed decisions (including no recent product choice).
QS1_5	Closely watches personal financial affairs	I keep a close watch on my personal financial affairs.	1 point for agreeing (1 or 2 on the scale). 0 in all other cases.
QS1_8	Sets long-term financial goals	I set long term financial goals and strive to achieve them.	1 point for agreeing (1 or 2 on the scale) 0 in all other cases.
QS2_3	Makes considered purchases	Before I buy something I carefully consider if I can afford it.	1 point for agreeing (1 or 2 on the scale). 0 in all other cases.
QS2_5	Pays bills on time	I pay my bills on time.	1 point for agreeing (1 or 2 on the scale). 0 in all other cases.

Computing digital financial literacy scores

The knowledge part of the digital financial literacy score is computed as the number of correct responses to three questions (QK7_4, QK7_5, QK7_6). The behaviour part of the digital financial literacy score is computed as a count of the number of "savvy" behaviours elicited by four statements (three in QS2 and one in QS3). The attitudes part of the digital financial literacy score is computed as a count of the number of "savvy" attitudes elicited by three statements in QS4. Data have been processed according to instructions in the table below.

The digital financial literacy score is obtained as the sum of the three previous components: knowledge (3), behaviour (4) and attitudes (3). The raw score can take any value between 0 and 10; the final score has been rescaled to range between 0 and 100.

Question label	Concept being tested or text of the question	Creating digital financial literacy scores
	Digital financial knowledge:	
QK7_4	True or False: A digital financial contract requires signature of a paper contract to be considered valid.	1 for a correct response [0/False – this will be checked at national level in participating countries]. 0 in all other cases.
QK7_5	True or False: The personal data that I share publicly online may be used to target me with personalized commercial or financial offers.	1 for a correct response [1/True – this will be checked at national level in participating countries]. 0 in all other cases.
QK7_6	True or False: Crypto-currencies have the same legal tender as banknotes and coins.	1 for a correct response [0/False – this will be checked at national level in participating countries]. 0 in all other cases.
	Digital financial behaviour:	
QS2_6	I share the passwords and PINs of my bank account with close friends.	1 point for disagreeing (4 or 5 on the scale). 0 in all other cases.
QS2_7	Before buying a financial product online I check if the provider is regulated in my country.	1 point for agreeing (1 or 2 on the scale). 0 in all other cases.
QS2_8	I share information about my personal finances publicly online (e.g., on social media).	1 point for disagreeing (4 or 5 on the scale). 0 in all other cases.
QS3_13	I regularly change the passwords on websites that I use for online shopping and personal finance.	1 point for agreeing (1 or 2 on the scale). 0 in all other cases.
	Digital financial attitudes:	
QS4_1	I think that it is safe to shop online using public Wi-Fi networks.	1 point for disagreeing (4 or 5 on the scale). 0 in all other cases.
QS4_2	It is important to pay attention to the security of a website before making a transaction online.	1 point for agreeing (1 or 2 on the scale). 0 in all other cases.
QS4_3	I think it is not important to read the terms and conditions when buying something online.	1 point for disagreeing (4 or 5 on the scale). 0 in all other cases.

Computing the financial well-being scores

The financial well-being score is computed using 12 dichotomous indicators created from the variables listed in the Table below. The first four variables represent measures of objective financial well-being, or financial resilience. The next eight variables represent measures of subjective financial well-being. Each component (objective and subjective financial well-being) are rescaled to be from 0 to 50. The two components are then added together to produce an overall financial well-being score that ranges from 0 to 100.

Question label	Text of the question	Creating financial well-being scores	
QF4	If you, personally, faced a major expense today – equivalent to your own monthly income – would you be able to pay it without borrowing the money or asking family or friends to help?	1 point for answering Yes	These four objective financial well-being indicators are rescaled to range from 0 to 50.
QF11	Sometimes people find that their income does not quite cover their living expenses. In the last 12 months, has this happened to you, personally?	1 point for answering No	
QF13	If you lost your main source of income today, how long could you continue to cover your living expenses, without borrowing any money or moving house?	1 point for being able to cover living expenses for at least three months [Answer options 4 or 5 on the scale].	
QS2_4	I have money left over at the end of the month.	1 point for agreeing [Answer options 1 or 2]	
QS1_4	I am satisfied with my present financial situation.	1 point for agreeing [Answer options 1 or 2 on the scale].	These eight subjective financial well-being indicators are rescaled to range from 0 to 50.
QS1_7	My financial situation limits my ability to do the things that are important to me.	1 point for disagreeing [4 or 5]	
QS1_10	I have too much debt right now.	1 point for disagreeing [4 or 5]	
QS2_1	I tend to worry about paying my normal living expenses.	1 point for disagreeing [Answer options 4 or 5]	
QS2_2	My finances control my life.	1 point for disagreeing [Answer options 4 or 5]	
QS3_3	Because of my money situation, I feel like I will never have the things I want in life.	1 point for disagreeing [Answer options 4 or 5]	
QS3_9	I am concerned that my money won't last.	1 point for disagreeing [4 or 5]	
QS3_10	I am just getting by financially.	1 point for disagreeing [4 or 5]	
			The objective and subjective components are added together; the overall financial well-being score therefore ranges from 0 to 100.

Calculations of other derived indicators included in this Report

Financial products

Awareness of payment products:

Question Label	Text of the question	Creating "aware of payment product" indicator
QP1_7	A credit card	1 for answering Yes to any of these four survey items. 0 in all other cases.
QP1_8	A current checking/payment account	
QP1_14	Mobile/cell phone payment account [not directly linked to a bank account]	
QP1_15	A prepaid debit card/ payment card [not directly linked to a bank account]	

Holding of payment products:

Question Label	Text of the question	Creating "holding payment product" indicator
QP2_7	A credit card	1 for answering Yes to any of these four survey items. 0 in all other cases.
QP2_8	A current checking/payment account	
QP2_14	Mobile/cell phone payment account [not directly linked to a bank account]	
QP2_15	A prepaid debit card/ payment card [not directly linked to a bank account]	

Awareness of savings, investment or retirement products:

Question Label	Text of the question	Creating "aware of savings, investment or retirement product" indicator
QP1_1	A pension or retirement product [NOTE TO AGENCY: The phrasing of this option should be clear as to exclude compulsory products]	1 for answering Yes to any of these six survey items. 0 in all other cases.
QP1_2	An investment account (provide <national examples>, such as a unit trust or income trust)	
QP1_9	A savings account	
QP1_12	Stocks and shares	
QP1_13	Bonds	
QP1_16	Crypto-assets	

Holding of savings, investment or retirement products:

Question Label	Text of the question	Creating "holding savings, investment or retirement product" indicator
QP2_1	A pension or retirement product [NOTE TO AGENCY: The phrasing of this option should be clear as to exclude compulsory products]	1 for answering Yes to any of these six survey items. 0 in all other cases.
QP2_2	An investment account (provide <national examples>, such as a unit trust or income trust)	
QP2_9	A savings account	
QP2_12	Stocks and shares	
QP2_13	Bonds	
QP2_16	Crypto-assets	

Awareness of credit products:

Question Label	Text of the question	Creating “aware of credit product” indicator
QP1_3	A mortgage or home-loan	1 for answering Yes to any of these six survey items. 0 in all other cases.
QP1_4	A loan secured on property	
QP1_5	An unsecured bank loan	
QP1_6	A car loan	
QP1_7	A credit card	
QP1_10	A microfinance loan	

Holding of credit products:

Question Label	Text of the question	Creating “holding credit product” indicator
QP2_3	A mortgage or home-loan	1 for answering Yes to any of these six survey items. 0 in all other cases.
QP2_4	A loan secured on property	
QP2_5	An unsecured bank loan	
QP2_6	A car loan	
QP2_7	A credit card	
QP2_10	A microfinance loan	

Victim of a financial fraud or scam

Question Label	Text of the question	Creating indictor for having been a victim of a financial fraud or scam:
QP10_1	Have you accepted advice to invest in a financial product that you later found to be a scam, such as a <pyramid> scheme?	1 for answering Yes to any of these four survey items. 0 in all other cases.
QP10_2	Have you accidently provided personal financial information (such as passwords or card number) in response to an email, phone call or social media message that your later found out was not genuine?	
QP10_3	Have you discovered that someone has used your <card> details to pay for goods without your authorisation?	
QP10_10	Have you lost money as a result of hackers or phishing scams?	

Digital financial services

Manage financial products and services online:

Question Label	Text of the question	Creating indictor for managing financial products and services online:
QP9_6	In the last 12 months, how often have you managed financial products and services (such as savings, investments, credit, insurance) online?	1 for answering 2=Sometimes, 3=Often, 4=Very often. 0 in all other cases.

Annex D. Tables

Tables of the results included in the report are available as a separate Excel file at this link.

OECD/INFE TOOLKIT FOR MEASURING FINANCIAL LITERACY AND FINANCIAL INCLUSION 2022

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1 The purpose of the OECD/INFE Toolkit

1.1. Background

The OECD International Network on Financial Education (OECD/INFE) started developing the OECD/INFE Toolkit for measuring financial literacy and financial inclusion in 2009 via a dedicated working group and drawing on an OECD working paper (Kempson, 2009[1]), national surveys, international research and expert advice. The first Toolkit, developed in 2010, was welcomed by G20 leaders in September 2013. The initial questionnaire was first piloted in 2010 as part of the first OECD international financial literacy and financial inclusion measurement exercise, which led to the publication of the working paper "Measuring Financial Literacy: Results of the OECD/INFE Pilot Study" (Atkinson and Messy, 2012[2]).

The Toolkit was then revised in 2015, and used in 2015/16 by around 40 countries and economies that participated in an international survey of adult financial literacy competencies. Results were published for a first set of 30 countries in the OECD/INFE International Survey of Adult Financial Literacy Competencies (OECD, 2016[3]). A complementary report was released focusing on the G20 (OECD, 2017[4]).

A subsequent revision took place in 2018 with the aim of updating its content and enlarging its scope to also cover subjective financial well-being. The 2018 version of the toolkit was used for an international survey in 2019/20, whose results are collected in the OECD/INFE 2020 International Survey of Adult Financial Literacy (OECD, 2020[5]). The Toolkit has also been used to collect financial literacy data in a variety of technical assistance projects implemented by the OECD (such as in the Commonwealth of Independent States and in Southeast Europe), with results collected in regional reports (OECD, 2018[6]; OECD, 2020[7]).

1.2. The content of this Toolkit

The OECD/INFE financial literacy and financial inclusion measurement toolkit incorporates:

- Methodological guidance.
- A questionnaire designed to capture information about financial behaviour, attitudes and knowledge, as well as a number of financial outcomes, in order to assess levels of financial literacy, financial inclusion, financial resilience and financial well-being (see Section 1.3).
- A list of the questions included in the questionnaire, and information about whether they will be used to create core financial literacy scores used in previous OECD reports (Annex A).
- Guidance on how to create the financial literacy scores (Annex A).
- Guidance on briefing interviewers (Annex B) and discussion around online surveys (Annex C).
- A checklist for countries wishing to submit data to the OECD (Annex D).
- Countries may wish to use a prepared dataset template, available upon request from the OECD/INFE Secretariat in SPSS, Stata, and Excel formats.

1.3. Scope of the questionnaire

The questionnaire included in this toolkit is primarily designed to measure financial literacy in an internationally comparable way.

The financial literacy component of the questionnaire reflects the OECD definition of financial literacy as included in the 2020 OECD Recommendation on Financial Literacy, namely: 'A combination of financial awareness, knowledge, skills, attitudes and behaviours necessary to make sound financial decisions and ultimately achieve individual financial well-being.'

The financial literacy questions themselves are largely drawn from existing surveys, and represent good practice in financial literacy and financial inclusion measurement. The financial literacy questions cover:

- Financial behaviours related to financial literacy, such as around budgeting, planning and managing finances
- Financial attitudes related to financial literacy
- Financial knowledge

The 2022 version of the questionnaire also includes questions to measure digital financial literacy, developed with the collaboration of the OECD/INFE Working Group on Digital Financial Literacy. These questions cover the three components of behaviour, attitudes and knowledge.

In addition, the questionnaire collects information on a number of related outcomes to which financial literacy is expected to contribute, such as financial inclusion, financial resilience and financial well-being. In particular, the questionnaire includes:

- Questions about choosing and using financial products that can be used to collect information about levels of financial inclusion. This section also includes questions about holding and use of digital financial products and services, and sustainable finance.
- Questions about the availability of financial resources to face income and expenditure shocks, and making ends meet, that can be used to collect information about financial resilience.
- Five financial well-being questions incorporated in the short financial well-being survey developed by the Consumer Financial Protection Bureau in the US, and questions reflecting aspects identified through the OECD work on financial well-being.
- Questions to identify whether respondents have had experiences such as being a victim of a financial scam; questions relating to integrity, trust and financial consumer protection; and questions about attitudes towards sustainable finance.
- Socio-demographic questions.

1.4. The benefit to policy makers of using the Toolkit to collect internationally-comparable data

Institutions can use the toolkit to collect valuable information at a point in time, or through regular tracking surveys. This process will result in data that can be used to identify target groups and prioritise initiatives, whilst also giving an important signal that national financial education efforts are being implemented following international good practices.

Each of the questions has been chosen to provide valuable information about a specific aspect of financial literacy, digital financial literacy, financial inclusion, financial resilience or financial well-being. The responses to various questions can also be combined to produce financial literacy scores or other scores using the methodology devised by the OECD/INFE.

Importantly, the toolkit is also designed to provide comparative data across countries. In particular, it can allow countries to benchmark themselves against other countries with similar characteristics (whether in terms of baseline levels of financial literacy or by some other variable such as national income or geographical location). Institutions are encouraged to share their data with the OECD in order to create an international dataset for comparison purposes.

1.5. Updates in the 2022 version

The definition of financial literacy used to develop this questionnaire is now widely recognised, including in the OECD Recommendation on Financial Literacy and by the G20. For this reason, the financial literacy questions contained in this toolkit closely match those included in previous versions.

However, both the state of knowledge and the financial landscape change rapidly, and so some modifications, additions and deletions have been made in other sections of the questionnaire, to create a questionnaire that can provide cross-comparable data on emerging and important topics whilst still providing the depth of information necessary to inform a national strategic approach to financial education.

New questions and response options in the 2022 version include:

- Questions about holding and use of digital financial products and services
- Questions about digital financial knowledge, attitudes and behaviours, that can be combined to compute a digital financial literacy score
- Questions about holding of sustainable finance products, and questions about attitudes towards sustainable finance
- Some pre-existing questions have been made optional to compensate the introduction of new questions

Further information about the questions contained in this toolkit can be found in Annex A, including the method employed by the OECD to create measures of financial literacy, financial inclusion, and financial well-being.

This document represents the 2022 update of the Toolkit, in preparation for a new coordinated survey in 2022/23. Queries should be addressed to the OECD/INFE Secretariat: SecretariatINFE@oecd.org.

2 Methodology

The OECD/INFE questionnaire included in this toolkit is designed to collect relevant information about financial literacy, financial inclusion, financial resilience and financial well-being within a country,[1] and to compare such levels across countries.

2.1. Target population

The survey should be representative of adults in the country. For the sake of international comparisons, the intended population is **adult individuals aged between 18 and 79**. If additional respondents outside of this age range are included, the sample size should be increased as necessary, to ensure a sufficiently large sample of individuals within the international target. In countries where 79 is outside of the normal range for surveying, it would be preferable to set the upper age boundary to 69, in keeping with the suggested age bands used for analysis.

2.2. Data collection methods

The interviews should preferably be undertaken by telephone or face-to-face, in order to overcome issues related to low levels of literacy. However, in countries with very high levels of literacy and high levels of internet penetration, online questionnaires may be preferred, and have been shown to be effective (see Annex C for further discussion of online questionnaires). Some countries may wish to consider using a combination of methods. In this case, the methods used can be identified in the dataset and taken into account during analyses. Countries and institutions implementing the survey should also take into account possible restrictions to physical interactions related to the COVID-19 pandemic in choosing the method of data collection.

2.3. Minimum sample size

The descriptive power of a sample size does not depend on the size of the population. A **minimum** *achieved* sample size of 1,000 participants per country should be collected for international comparisons and in order to analyse the national data by key socio-demographics such as gender and age. In order to interview 1,000 participants, survey agencies should have an original sample of 1,700 valid contact details from which to draw participants.[2] With an achieved sample of 1,000 participants, this will give a 95%

[1] The questionnaire can also be used to measure the financial literacy of a smaller population, such as the population of a region, or the employed population. Users should note that there may be relatively little variation in scores if the population being surveyed is particularly homogenous.

[2] It is important to strive for a good response rate. However recent statistics suggest that it is becoming increasingly difficult to encourage participation in surveys, and so it may be necessary to adjust the original sample accordingly in order to interview 1000 respondents.

confidence interval on a finding of 50% of around 47% to 53% (assuming a random sample). Countries should be aware that if they intend to undertake detailed analyses of differences within differences (such as financial literacy by gender within regions), or if they wish to increase the precision of the estimates, they will require larger sample sizes.[3]

2.4. Adaptations

There are various approaches to using the questions contained within this questionnaire, depending on whether they will be used alone, or in combination with questions from other sources:

- If the core questions will be added to a larger survey, they should be grouped with other questions that address similar topics (and care should be taken not to make the questionnaire too long).
- If additional questions are going to be added to the questions they should either be placed after the financial literacy questions and before the socio-demographic questions, or grouped with similar topics within the financial literacy questions – this will depend on the topics to be covered. As above, the length of the questionnaire should be taken into account.
- If the questions are used without any additional questions, the question order should be retained.
- In all cases, it is important to remember to avoid providing any information that might influence responses to the questions or give the answer to particular questions, whether through discussion with the respondent before beginning the survey, or through additional questions.

Some questions should be adapted to the national context in order to be fully relevant to respondents. This refers in particular to questions containing currency values and lists of financial products and services. This is indicated in the ‘notes to agency’ provided above the questions concerned, or in <> within the text of certain questions.

2.5. Coordinating and sharing with the OECD/INFE

This Toolkit and the related questionnaire is made available for public use by interested parties. Institutions using the questionnaire are requested to cite it and to inform the OECD/INFE Secretariat (SecretariatINFE@oecd.org) about any publication using data collected with the questionnaire.

- **Using the questionnaire in the framework of the 2022/23 OECD/INFE coordinated survey**. Institutions wishing to participate in the 2022/23 OECD/INFE coordinated survey are strongly encouraged to:
    - Inform the OECD/INFE Secretariat in order to facilitate co-ordination and comparisons across countries.
    - Use a dataset template, available from the OECD/INFE Secretariat in SPSS, Stata, and Excel formats, for submitting their data.

  Data submitted as part of the 2022/23 measurement exercise will be analysed by the OECD/INFE Secretariat. Scores will be created following the same approach as in previous waves (see Annex A), and comparisons will be made across countries and key demographic groups. The commissioning body and/or survey agency can also analyse their national data and may wish to publish their own results ahead of the OECD/INFE publication.
- **Institutions wishing to use the questionnaire outside of coordinated OECD/INFE exercises** are invited to inform the OECD/INFE Secretariat, in order to ensure that they have the most up-to-

[3] There are many tools developed to help with sample size determination. See for example https://www.surveysystem.com/sscalc.htm

date questionnaire. Countries and institutions using the questionnaire on representative national samples are also encouraged to consider giving the OECD permission to use and/or share the anonymised raw data for research purposes and for further international comparisons.

2.6. Preparing the fieldwork

Institutions seeking to commission a survey based on this questionnaire should identify a reputable agency (this may be a private company or government body), with proven experience and the capacity to complete the process within the required timeframe. The survey agency should be able to provide information about all aspects of the process including, but not limited to the following:

2.6.1. Achieving a robust sample

It is important to discuss with the survey agency how the sample will be drawn. It should be possible to draw a sample where each individual has a known probability of being selected. In some cases it may also be necessary to stratify the population to reach particular groups, or even to replace probability sampling with quotas in order to ensure that the sample includes certain minorities. A good survey agency will be able to recommend the best approach for a given population.[4] In many countries, the approach taken is to randomly select locations to sample from, and then set a quota to make sure that the interviewees are representative of the groups of interest. Commissioning institutions should discuss with survey agencies the benefit of setting quotas and/or including booster samples of hard to reach groups and the implications in terms of sample size and confidence in the results. They should also consider the policy implications of (not) having robust data on certain subgroups.

The survey agency should have a reputation for ensuring good response rates. It is recommended that survey agencies are given a target response rate of 60% - that means that at least 60% of the people that they contact to take part in the survey should be interviewed. This may mean attempting to make contact with a sampled individual several times before quitting. The agency should be able to show that they have strategies in place (such as contacting people at different times of the day) in order to reach a representative cross-section of the population.

2.6.2. Preparing the questionnaire for fieldwork

The entire questionnaire (except any optional questions that have not been chosen), including all interviewer instructions, should be translated into national languages, as appropriate.

It is important that questions are translated so that they retain the same meaning; translators should have a good understanding of idiosyncratic phrases such as ‘keeping an eye on’ or ‘making ends meet’ or words that could be translated in more than one way, such as ‘saving’. It is advisable to have more than one translator work on the document in parallel, and to discuss any discrepancies/disagreements with the commissioning body before fielding the translated document.

Whether or not the questionnaire will be translated, it will be necessary to modify contextual information and some examples given on specific questions– these questions are indicated in the questionnaire.

The translated and modified questions should be tested on a few individuals before starting fieldwork to make sure that the translation is easy to understand and the options are clear. If the questions are not well

[4] For further information on sampling refer to Dorofeev, S. and P. Grant, (2006), Statistics for Real-life Sample Surveys, Cambridge University Press, Cambridge.

understood, or there is any concern that the question wording is ambiguous, then this must be addressed before fieldwork begins.

A small number of questions ask the respondent about their household. For the purpose of this survey, please consider a household to be represented by the following basic definition:

> *A household is composed of either a) a group of people (adults and/or children) living in the same dwelling space who each acknowledge the authority of the same person or couple as the head(s) of household or b) a lone individual. Note that a young adult living at home should be encouraged to discuss their own financial situation rather than that of their parents – this is indicated in the questionnaire.*

Several questions also refer to living expenses. These are considered to be all the bills and expenses that support an individual's basic needs such as housing, water, food, heat, medical expenses and essential transport as well as all formal financial commitments such as debt repayments, child support or court fines.

Once the questionnaire has been prepared in the national language(s) it may be necessary to enter it into a software package designed to make it easier for the interviewer to collect the data. Care should be taken to make sure that the package allows responses to be stored in the required formats (e.g. letters or digits, decimal places) and that the questions fit a single page of the screen where possible – to aid the interviewer when reading. The programme will need to take into account all filters indicated in the paper questionnaire, in order to make sure that the intended respondents are questioned in sufficient depth and unintended respondents are not asked irrelevant questions.

2.6.3. Field work and data collection

The survey agency will either contact the people that they need to interview by telephone or make a personal call to their home (or possibly by email, depending on the method chosen). They will describe the purpose of the survey and its likely length to the potential participant and encourage them to take part in this important research. The institution commissioning the survey should work with the agency to ensure that the description is clear and unambiguous.

It is important that interviews are conducted at different times of day and throughout the week. It is also important to try to make contact with the identified person several times, if the first attempt is unsuccessful. Without these steps, it is very likely that people who are most often home, such as the elderly, homemakers, students or the unemployed, will be more likely to participate than would be the case in a truly random selection and the results may well be biased as a result.

When introducing the questionnaire, the interviewer should make it clear to the respondent that the commissioning body is interested in their own personal situation and views rather than that of the household or main earner, unless otherwise stated. For languages that differentiate between 'you' in the singular, and 'you' in the plural, the singular version should be used for translation purposes in all questions that do not explicitly ask for information about the household.

The interviewers should ask the questions in the order that they are laid out in the national questionnaire, without changing the wording and they should immediately record the responses. If necessary, they can go back to previous questions to make a correction or clarify a point (such as when asking about the product chosen most recently). The questionnaire is designed so that respondents do not need to read any of the questions or write down their answers.[5] It is important to inform and reassure respondents that their responses are confidential and encourage them to participate in order to have complete information.

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[5] In practice, some agencies have preferred to create a card of potential options for respondents to read through. Such a decision should be made at the country level taking into account the levels of literacy and possible bias that such an approach may have.

However, they must never be put under pressure or rushed to answer anything that they don't want to answer – doing so is unethical and is also likely to significantly bias their responses.

Interviewers should not read out response category options that are written in italics (such as "don't know"). However, if the respondent spontaneously gives a response that matches an option in italics, the interviewer should record this accordingly.

2.6.4. Data handling and preparation for analysis

The information provided by participants will become the raw data for the financial literacy measure. This raw data will need to be held in a software package such as Excel, SPSS or Stata in order to facilitate detailed analysis. For the international comparison it is important to use the coding guide provided in the right hand column of the questionnaire when inputting data in order to have data that can be included in the cross-country analyses. Similarly, for international comparisons, it will be important to store the data in the dataset template prepared by the OECD/INFE Secretariat, available upon request in SPSS, Stata, and Excel formats.

Commissioning institutions should check that the data are being stored and handled securely and in accordance with appropriate national or international data protection regulations and guidelines. At a minimum, the survey agency should not store any financial data (such as household income) alongside personal information such as name, phone number or address. They must also ensure that none of the contact details collected during fieldwork are used for any purpose other than to validate the survey responses or to follow up the respondent during the next phase of fieldwork (if conducting a longitudinal study). Data confidentiality statements should be provided to participants and adhered to.

The survey agency will be responsible for providing appropriate weights[6] for the analysis, taking into account the probability of selection and making sure that the data are representative of the population in terms of i) individuals (not households); ii) gender mix; and iii) age profile. It may also be necessary to weight the data according to region; if this is likely to be the case the survey agency should ensure that this information is recorded. It is important for international comparisons that the weights are labelled appropriately, and that documentation is created describing how they were established, and their purpose, with clear instructions for use.

The survey agency will need to prepare the data for analysis (using the dataset template provided by the OECD/INFE). The survey agency should check that values have been entered correctly, for example, and add relevant labels. They may create basic tables at this stage, to show that each of the questions has been asked, and to report the number of valid responses to each question. This will enable the commissioning institution to check the quality of the data and to identify potential issues (such as oversampling of certain groups).

It is important that the commissioning body also has the opportunity to go back to the original records collected by the survey agency, and to individual interviewers if necessary, in order to clarify any issues that are highlighted by the analysis process. It is recommended that this is written into any contract with the survey agency for a minimum of 4 months after the receipt of data (12 months is recommended).

[6] Weighting is designed to adjust samples when certain groups are over, or under-represented in the sample.

3 OECD/INFE Questionnaire (2022)

These questions are intended to be read out loud by an interviewer. When applied in this way, there is no requirement for the respondent to be able to read or write. The introduction of the questions and notes for the interviewer may need to be adapted if the survey is administered on the phone or online.

The right hand column of each question indicates the variable name and label that should be used to facilitate international comparison. If an additional question is asked or the wording of a question is changed, alternative labels should be used to avoid confusion.

Some questions need editing before use to reflect country specificities. This is indicated in the 'notes to agency' provided above the questions concerned. Further information about the use of the questions can be found in Annex A.

This questionnaire has been developed through an iterative process, taking into account the experiences of countries that have measured financial literacy using previous versions and incorporating new questions.

3.1. Colour coding

Questions in black are required to prepare financial literacy scores or are expected to be used to undertake key supporting analyses in the future publication presenting the results of the 2022/23 survey.

Questions in green are considered as "optional". They are not used in the financial literacy score or major analyses reported by the OECD in previous international analyses. Countries are however still encouraged to use them, as they are considered to be important for national level analyses, and may be used in future analyses at the international level.

3.2. Questionnaire

Personal and household characteristics

NOTE TO AGENCY: the option "Other answer" may be removed if deemed sensitive in the country.

RECORD OR ASK ALL

Gender	**Question: QD1**
	Label: Gender
Male	1
Female	0
Other answer	-98
Refused	-99

Regional data is collected for national analyses only; it is not used for international comparisons.

RECORD OR ASK ALL

Region	**Question: QD2**
	Label: Region
Codes and labels will need adding here by each country wishing to collect this information	*1*

NOTE TO AGENCY: If this question is read out (for a telephone interview) or included in an online questionnaire, the respondent should be asked about the community they live in. Those who are away from their usual community, such as temporary migrants, adults being cared for away from home, or students in a different city, can provide information about the community they are living in at the time of the interview, even if it is not their usual community.

RECORD ALL OR ASK ALL.

Could you tell me which of these best describes the community you currently live in, please? Interviewer to record <u>the size of the community in which the respondent is living on the day of the interview</u>	**Question: QD3**
	Label: Urban
A village, hamlet or rural area (fewer than 3 000 people)	1
A small town (3 000 to about 15 000 people)	2
A town (15 000 to about 100 000 people)	3
A city (100 000 to about 1 000 000 people)	4
A large city (with over 1 000 000 people)	5

Language is collected for national analyses only; it is not used for international comparisons.

RECORD FOR ALL

Language/dialect of interview	**Question: QD4**
	Label: Language
Codes will need adding here by each country	***1***

Note to agency: *A household is considered to be either a) a group of people (adults and/or children) living in the same dwelling space who each acknowledge the authority of the same person or couple as the head(s) of household or b) a lone individual.*

Family composition is extremely complicated, and this questionnaire is not designed to give a detailed insight. If, for example, the composition of a household is very fluid the priority is to know whether the respondent lives with dependent children and/or a partner. If the respondent comments that they have dependents living elsewhere, it is better not to record them as part of the household, to ensure consistency.

ASK ALL

Who do you usually live with in your household? Do you live...	**Question: QD5**
MULTICODED. Create a single variable for each response. Record responses as: 1='Yes' 0=No.	
INTERVIEWER READ OUT: MARK ALL THAT APPLY.	**Labels: Household_**
Entirely alone [STOP READING IF YES]	_1
With a partner/spouse	_2
With children under the age of 18	_3
With children aged 18 or over	_4
With other adult relatives	_5
With friends, colleagues or students	_6
With other adults; not related	_7
Refused to answer the entire question	_99

ASK if QD5_1=0 (if respondent does not live alone)

How many adults (aged 18 or over) live in your household, including yourself?	**Question: QD5_ad**
INTERVIEWER READ OUT: MARK ALL THAT APPLY.	**Labels: Household count_**
Record response [Minimum value=1]	___
Does not apply	-98
Refused to answer	-99

ASK if QD5_1=0 (if respondent does not live alone) AND QD5_3=1 (if respondent lives with children under the age of 18)

How many children under the age of 18 live in your household?	**Question: QD5_ch**
INTERVIEWER READ OUT: MARK ALL THAT APPLY.	**Labels: Household count_**
Record response [Minimum value=1]	___
Does not apply	-98
Refused to answer	-99

Note to agency: this question is relevant if data collection takes place face-to-face or via the telephone. It may therefore need to be adapted or dropped depending on the method of data collection. It may also be used as a filter for subsequent questions (especially QP8, QP9 and relevant statements in QS1, QS2, QS3 and QS4).

ASK ALL

Do you have access to the internet?	**Question: QD14**
	Label: Internet
Yes	1
No	0
Do not know	-97
Refused	-99

Planning and managing finances

INTERVIEWER READ OUT: ***The next set of questions will help us to understand how people think about, and plan their finances. There are no right and wrong answers to these questions, and your answers will be kept entirely confidential, so please do answer as accurately as you can.***

Note to agency: QF1_a, QF1 and QF2 explore whether the respondent has responsibility for decision about household or personal money, and their approaches to money management. It is important to note that young people living with parents or other responsible adults are very likely to report that someone else makes the decision; this response is acceptable.

Budgeting

ASK ALL

Do you make day-to-day decisions about your own money?	**Question: QF1_a**
	Label: Personal budget
Yes	1
No	0
Don't know	-97
Refused	-99

ASK ALL

And who is responsible for making day-to-day decisions about money in your household?	**Question: QF1**
INTERVIEWER: READ OUT 1- 3:	**Label: Decisions**
You make these decisions by yourself	1
You make these decisions with someone else	2
Someone else makes these decisions	3
Don't know	-97
Refused	-99

ASK ALL

Do you do any of the following for yourself or your household?	**Question: QF2**
MULTICODED. Create a single variable for each response. Record responses as: 1='Yes,' 0='No,' -99=Refused	
INTERVIEWER: READ OUT. MARK ALL THAT APPLY.	**Label: Budget_<statement>**
Make a plan to manage your income and expenses	_1
Keep a note of your spending	_2
Keep money for bills separate from day-to-day spending money	_3
Make a note of upcoming bills to make sure you don't miss them	_4
Use a banking app or money management tool to keep track of your outgoings	_5
Arrange automatic payments for regular outgoings	_6
Refused entire question	_99

Active saving and financial shocks

Note to agency: Please do not include pension savings in question QF3, since these are compulsory or automatic in some jurisdictions. Please replace <savings/deposit> and <informal savings club> with the appropriate term (or, if it is not relevant, drop it from the list of options). If necessary, remind the participant that this is entirely confidential, and that their data will be anonymised.

INTERVIEWER READ OUT IF RESPONDENT IS NOT LIVING ENTIRELY ALONE AT QD5: *Now thinking about yourself, rather than your household…*

ASK ALL

In the past 12 months have you been [personally] saving money in any of the following ways, whether or not you still have the money? Please don't take into account any money paid into a pension, but think about all kinds of savings, such as building up a rainy-day fund or putting money aside for a special occasion.	**Question: QF3**
MULTICODED. Create a single variable for each response. Record responses as: 1='Yes,' 0='No,' -99=Refused.	
Rotate list	
INTERVIEWER: READ OUT 1-8. MARK ALL THAT APPLY.	**Labels: Active saving_[statement]**
Saving cash at home or in your wallet	_1
Paying money into a <savings/deposit> account	_2
Giving money to family to save on your behalf	_3
Saving in <an informal savings club>	_4
Buying bonds or time deposits	_5
Investing in crypto-assets	_6
Investing in stocks and shares	_7
Saving or investing in some other way, other than a pension (INTERVIEWER: examples can be given, possibly including remitting money to be invested in home country, or buying livestock, gold, real estate or other property)	_8

ASK ALL

If you, personally, faced a major expense today – equivalent to your own monthly income – would you be able to pay it without borrowing the money or asking family or friends to help? [Add if necessary, **if you do not currently have an income, please think about an unexpected expense equivalent to the amount of money you typically spend in a month.]**	**Question: QF4** **Label: Expenditure shock**
Yes	1
No	0
Don't know	-97
Not applicable (I don't have any personal income)	-98
Refused	-99

Optional question for countries that have not participated in the 2019/2020 OECD INFE survey and that would like to compare the results of QF4 with the pre-COVID19 situation

ASK ALL

If you, personally, had faced a major expense – equivalent to your own monthly income – in December 2019, before the beginning of the COVID-19 pandemic, would you have been able to pay it without borrowing the money or asking family or friends to help? **[**Add if necessary, **if you did not have an income, please think about an unexpected expense equivalent to the amount of money you typically spent in a month.]**	**Question: QF4pre** **Label: Expenditure shock pre**
Yes	1
No	0
Don't know	-97
Not applicable (I don't have any personal income)	-98
Refused	-99

Financial goals

Note to agency: The following questions further explore the ways in which people plan for financial goals. A pilot test could be used to add suitable examples and pre-codes for QF6 and QF7. Note that QF7 should explore the behaviour of the respondent, even if the goal is set as a couple or at the household level.

ASK ALL

Some people set themselves financial goals, such as paying university fees, buying a car or becoming debt free. Do you (personally, or with your partner) have any financial goals?	**Question: QF5** **Label: Goals**
Yes	1
No	0
Don't know	-97
Refused	-99

ASK if QF5=1 (this goal could be personal, or with a partner)

Could you tell me, briefly, what is your most important financial goal?	**Question: QF6** **Label: Important goal**
Record response	____
Don't know	-97
Refused	-99

ASK if QF5=1

What actions have you (personally) taken to meet your most important financial goal…	**Question: QF7**
MULTICODED. Create a single variable for each response. Record responses as: 1='Yes,' 0=No	
INTERVIEWER: PROMPT, PARTICULARLY IF THE RESPONDENT SAYS 'NOTHING'. **DO NOT READ OUT**. MARK ALL THAT APPLY.	**Labels: Actions**
Prepared a plan of action	_1
Increased your credit card or loan repayments	_2
Saved or invested money	_3
Looked for new/different/additional source of income	_4
Identified a source of credit	_5
Cut-back on spending	_6
Something else [Agency may wish to record what]	_7
Nothing	_8
Don't know	_97
Refused to answer the entire question	_99

Retirement plans

INTERVIEWER READ OUT: ***The next question is about retirement planning, and is relevant whether or not you are already retired.***

ASK ALL

Overall, on a scale of 1 to 5 where 1 is very confident, and 5 is not at all confident; how confident are you that you have done a good job of making financial plans for your retirement?	**Question: QF8**
Record responses as: 1='very' confident, 2, 3, 4, 5='not' at all confident	
INTERVIEWER: REPEAT CATEGORIES TO RESPONDENT IF NECESSARY; PROBE ON LEVEL OF CONFIDENCE IF NOT CLEAR.	**Label: Retirement confidence**
1 very confident	1
2	2
3	3
4	4
5 not at all confident	5
Respondent has no retirement plan [do not read out]	*6*
Don't know	*-97*
Refused	*-99*

ASK ALL

Note to interviewer: if respondents plan to rely on inheritance, please encourage them to indicate the specific type of assets or goods (i.e., if they plan to rely on inheritance in the form of liquid savings, they should reply “yes” to QF9_9).

and how will you - or do you - fund your retirement?	**Question: QF9**
MULTICODED. Create a single variable for each response. Record responses as: 1='Yes,' 0='No,' -97 Don't know, -99=Refused.	
INTERVIEWER: READ OUT 1-12. MARK ALL THAT APPLY.	**Labels: Retirement plans_**
Draw a government pension/ old-age benefit	_1
Draw an occupational or workplace pension plan	_2
Draw a private pension plan	_3
Sell your financial assets (such as: stocks, bonds or mutual funds)	_4
Sell your non-financial assets (such as a car, property, art, jewels, antiques, etc.)	_5
From income generated by your financial or non-financial assets (such as dividends or rental income)	_6
Rely on a spouse or partner to support you	_7
Rely on your children or other family members to support you	_8
Draw on your savings	_9
Continue to work	10
From the revenues of a business that you own	11
Something else [agency may wish to record what]	_12
Do not know to the entire question	_97
Refused to answer the entire question	_99

Making ends meet

INTERVIEWER READ OUT: ***The next section discusses some of the financial decisions and experiences that people face. The answers we collect may be used to design better information and advice for people who face such decisions or experiences in the future.***

ASK ALL

Sometimes people find that their income does not quite cover their living expenses. In the last 12 months, has this happened to you, personally?	**Question: QF11** **Label: Not covering costs**
Yes	1
No	0
Don’t know	-97
Not applicable (I don't have any personal income)	-98
Refused	-99

Note to agency: Please add in country specific options under each category. This question is multi-coded. Create a single variable for each response, plus a variable for 'don't know' and one for 'refused'. For the purpose of measuring financial literacy, the number of codes can be reduced by simply using the main category headings (such as Existing resources. Additional resources, etc.) or by dropping options that may not be relevant in the country. However, the more detailed information may be useful.

ASK only if QF11=1

What did you do to make ends meet the last time this happened?	**Question: QF12**
MULTICODED. Create a single variable for each response. Record responses as: 1='Yes,' 0=No, -98= Not applicable, -97 = Do not know.	
INTERVIEWER: PROBE WITH: DID YOU DO ANYTHING ELSE? MARK ALL THAT APPLY. DO NOT READ OUT OPTIONS: ALTHOUGH EXAMPLES CAN BE GIVEN	**Labels: Making ends meet**
_1 Existing resources	
Draw money out of savings or transfer savings into <current> account	_1_1
Cut back on spending, spend less, do without, delay a planned expense	_1_2
Sell something that you own	_1_3
_2 Additional resources	
Work overtime, take an extra job, earn extra money	_2_1
Claim support from the government	_2_2
Ask for help from family, friends or the community	_2_3
_3 Access credit by using existing contacts or resources	
Borrow from family, friends or the community	_3_1
Borrow from employer/salary advance	_3_2
Pawn something that you own	_3_3
Take a loan from your savings and loans clubs or other <informal savings club>	_3_4
Use someone else's credit card	_3_5
Take money out of a flexible mortgage account	_3_6
Apply for loan/withdrawal on pension fund	_3_7
_4 Borrow from existing credit line	
Use authorised, arranged overdraft or line of credit	_4_1
Use credit card for a cash advance or to pay bills/buy food	_4_2
_5 Access additional credit	
Take out a personal loan from a financial service provider (including bank, credit union or microfinance)	_5_1
Take out a payday loan	_5_2
Take out a loan from an informal provider/moneylender	_5_3
Take an SMS loan	_5_4
Take an online <instant cash> loan	_5_5
_6 Fall behind/ go beyond arranged amount	
Use unauthorised overdraft	_6_1
Pay bills late; miss payments	_6_2
_7 Other responses	
Other	_7_1
Don't know	*_97*
Refused	*_99*

ASK ALL

If you lost your main source of income today, how long could you continue to cover your living expenses, without borrowing any money or moving house?	Question: QF13
Record responses as: 1='less' than a week, 2, 3, 4, 5='6' months or more	
INTERVIEWER: (if necessary) READ OUT a-e	**Label: Lost income**
a) Less than a week	1
b)At least a week, but not one month	2
c) At least one month, but not three months	3
d) At least three months, but not six months	4
e) Six months or more	5
Don't know	-97
Refused	-99

Optional question for countries that have not participated in the 2019/2020 OECD INFE survey and that would like to compare the results of QF13 with the pre-COVID19 situation

ASK ALL

If you had lost your main source of income in December 2019 (before the COVID-19 pandemic), how long could you continue to cover your living expenses, without borrowing any money or moving house?	Question: QF13pre
Record responses as: 1='less' than a week, 2, 3, 4, 5='6' months or more	
INTERVIEWER: (if necessary) READ OUT a-e	**Label: Lost income pre**
a) Less than a week	1
b)At least a week, but not one month	2
c) At least one month, but not three months	3
d) At least three months, but not six months	4
e) Six months or more	5
Don't know	-97
Refused	-99

Choosing and using financial products and services

INTERVIEWER READ OUT: The following set of questions is about financial products and services. I will not ask you about the balance of any accounts you hold, we are just interested in whether you have heard of them or used them on your own or together with someone else.

NOTES TO AGENCY/INTERVIEWER:

- These three questions are used to develop indicators of financial inclusion; and to provide context for the financial literacy questions that follow. If space is at a premium they could be shortened or omitted.
- The list of product types used in the national questionnaire **should be specific to the country**, and should cover payment products, savings, investments, credit (unsecured and secured if relevant) and insurance products as relevant. If necessary, give examples.
- QP1 should be asked of every product type that you are interest in, and used to filter the list of products for the following questions.
- QP2 should only be asked for product types that the respondent has heard of at QP1.
- QP3 is asking about recent product choice, irrespective of current product holdings. For this reason, it should be asked about all products that the respondent has heard of at QP1, not only product types mentioned at QP2.
- For each question, create one variable for each product type, plus one variable for don't know, and another for refused. For example, the first question will have one variable named QP1 _1 and labelled Heard of a pension or retirement product. This variable will take the value 0 if respondent says No, and 1 if respondent says Yes.

ASK ALL

			Questions: QP1 / QP2 / QP3
			Labels: Heard of [followed by product]; Currently holds [ ]; Recently chosen [ ].
MULTICODED. Create a single variable for each response. Record responses as: 1='Yes,' 0='No,' -97='Don't' know, -99=Refused.			
INTERVIEWER READ OUT *RELEVANT* PRODUCT TYPES EACH TIME. MARK ALL THAT APPLY.	ASK ALL **Please can you tell me whether you have heard of any of these types of financial products**	ASK IF QP1=Yes **and now can you tell me whether you [personally or jointly] currently hold any of these types of products**	ASK IF QP1=Yes. **and in the last two years, which of the following types of financial products have you chosen [Personally or jointly] whether or not you still hold them… Please do not include products that were renewed automatically**
A pension or retirement product [NOTE TO AGENCY: The phrasing of this option should be clear so as to exclude compulsory products]	_1	_1	_1
An investment account (provide <national examples>, such as a unit trust or income trust)	_2	_2	_2
A mortgage or home-loan	_3	_3	_3
A loan secured on property	_4	_4	_4
An unsecured bank loan	_5	_5	_5
A car loan	_6	_6	_6
A credit card	_7	_7	_7
A current/checking/payment account	_8	_8	_8
A savings account	_9	_9	_9
A microfinance loan	_10	_10	_10
Insurance	_11	_11	_11
Stocks and shares	_12	_12	_12
Bonds	_13	_13	_13
Mobile/cell phone payment account [not directly linked to a bank account]	_14	_14	_14
A prepaid debit card/ payment card [not directly linked to a bank account]	_15	_15	_15
Crypto-assets	_16	_16	_16
Financial products labelled as sustainable, or "ESG", or "green" [Note to agency: This may include investments, pensions, mortgages, bonds, etc. and does not replace other items in the list asking about these products more generally]	_17	_17	_17
[country specific product 1]	_add_1	_add_1	_add_1
Don't know response given to the question as a whole	_97	_97	_97
None	_98	_98	_98
Refused to respond to the question as a whole	_99	_99	_99

ASK ALL THOSE WHO ANSWERED YES AT MORE THAN ONE PRODUCT OUT OF QP3_1 (pension), QP3_2 (investment), QP3_3. QP3_4. QP3_5. QP3_6, QP3_10 (loans), QP3_7, QP3_15 (card), QP3_8. QP3_9, QP3_14 (account). QP3_11 (insurance).

Which of these did you choose most recently?	**Question: QP4**
INTERVIEWER: READ OUT PRODUCTS LISTED AT QPROD1 IF NECESSARY	**Label: Most recent product**
RECORD RESPONSE________________________	Record response using same phrasing as in QP3
Don't know	-97
Not applicable	-98
Refused	-99

ASK ALL THOSE WHO ANSWERED YES AT ANY OF QP3_1 (pension), QP3_2 (investment), QP3_3, QP3_4. QP3_5. QP3_6, QP3_10 (loans), QP3_7, QP3_15 (card), QP3_8. QP3_9, QP3_14 (account), QP3_11 (insurance).

and which of the following statements best describes how you made your most recent choice?	**Question: QP5**
INTERVIEWER: READ OUT; RECORD ONLY ONE THAT BEST DESCRIBES…	**Label: Shopping around**
I considered several options from different companies before making my decision	1
I considered various options from one company	2
I didn't consider any other options at all	3
I looked around but there were no other options to consider	4
Don't know	-97
Not applicable	-98
Refused	-99

ASK ALL THOSE WHO ANSWERED YES AT ANY OF QP3_1 (pension), QP3_2 (investment), QP3_3. QP3_4. QP3_5. QP3_6, QP3_10 (loans), QP3_7, QP3_15 (card), QP3_8. QP3_9, QP3_14 (account). QP3_11 (insurance).

and still thinking about the time when you made your most recent choice, do any of these statements apply?	**Question: QP6**
MULTICODED. Create a single variable for each statement. Record responses as 1='Yes,' 0='No,' -97='Don't' know. -98 not applicable, -99=Refused	
INTERVIEWER: READ OUT; RECORD ALL THAT APPLY…	**Label: Product statement**
It was important for me to have a quick decision from the company	_1
I trusted the company providing the product	_2
I had already used other financial products from this company when I made this choice	_3
I had not heard of this company before I chose this product	_4
Do not know to the entire question	_97

NOTE TO AGENCY: This is an abridged version of the detailed question asked previously. The intention is to identify people who seek unbiased information. Such information could be received in a variety of ways, including through printed materials and information provided online.

ASK ALL THOSE WHO ANSWERED YES AT ANY OF QP3_1 (pension), QP3_2 (investment), QP3_3. QP3_4. QP3_5. QP3_6, QP3_10 (loans), QP3_7, QP3_15 (card), QP3_8. QP3_9, QP3_14 (account). QP3_11 (insurance).

and which of these sources of information do you feel significantly influenced your decision {about which one to take out}?	**Question: QP7**
MULTICODED. Create a single variable for each source. Record responses as 1='Yes,' 0=No,-97='Don't' know, -98 Not relevant, -99=Refused.	
INTERVIEWER: READ OUT; MARK ALL THAT APPLY…	**Label: Information source**
Specialist product comparisons or best-buy guidance (such as specialist magazines)	_1
A price comparison website	_2
A recommendation from an independent financial advisor [Note to agency: if necessary clarify that independent advisors are fee-based, and should not include commission-based ones]	_3
Information from an advert or <brochure> about this specific product	_4
A recommendation from friends, family or acquaintances	_5
A recommendation from people you do not know (such as social media or “influencers”)	_6
Information provided by staff of the financial product provider (in person, online or over the phone)	_7
Some other type of information	_8
Refused the entire question	_99

ASK ALL or filter using QD14

Note to agency: if necessary clarify that in the following questions, “online” means via the internet through a computer or mobile device.

Have you ever done any of the following?	**Question: QP8**
MULTICODED. Create a single variable for each statement. Record responses as 1='Yes,' 0='No,' -97='Don't' know. -98 not applicable, -99=Refused	**<Label using statement>**
Opened a <current/payment> account or <savings/deposit> account completely online	_1
Requested a payment, debit or credit card completely online	_2
Subscribed to an insurance policy completely online	_3
Taken out credit completely online	_4
Borrowed, lent, or invested money via a crowdfunding, crowd investing, or peer-to-peer lending platform (<provide national examples if any>)	_5

ASK ALL or filter using QD14

Note to agency: if necessary clarify that in the following questions, “online” means via the internet through a computer or mobile device.

In the last 12 months, how often have you done the following?	**Question: QP9**
MULTICODED. Create a single variable for each statement. Record responses as 1='Never,' 2='Sometimes,' 3='Often', 4='Very often' -97='Don't' know. -98 =Not applicable, -99=Refused	**<Label using statement>**
Checked the balance and transactions of my bank account online	_1
Recharged a pre-paid card online [Note to interviewer: this means charging/loading/putting money onto a prepaid card before using it to pay. It does not refer to using a prepaid card to make purchases online and 'charging' expenses on the card.]	_2
Paid bills online	_3
Bought goods and services online	_4
Transferred money to others online [note to agency: this should not include money sent through agents]	_5
Managed financial products and services (such savings, investments, credit, insurance) online	_6
Paid for goods and services in a physical shop with a mobile phone (e.g. using a mobile wallet, such as Apple Pay, Google Pay, <national examples>)	_7
Used a website or app that aggregates several financial accounts (e.g. <national examples>)	_8
Used an online platform for trading stocks and shares	_9
Consulted an online platform for automated financial advice (e.g., <national examples of robo-advice>)	_10

Note to agency: Use an appropriate word or phrase in place of those words in <> if necessary (e.g. Ponzi scheme bank card, payment card).

ASK ALL

Thinking about financial products and services in general, in the last 2 years, have you experienced any of the following issues?	**Question: QP10**
Create a single variable for each statement. Record responses as: 1='Yes,' 0='No,' -95='Don't' understand the question, -97='Don't' know, -98 Not relevant,-99=Refused	
Rotate list	**Label: Issues**
INTERVIEWER: READ OUT. MARK ALL THAT APPLY.	.
{Have you} accepted advice to invest in a financial product that you later found to be a scam, such as a <pyramid> scheme?	_1
{Have you} accidently provided personal financial information (such as passwords or card number) in response to an email, phone call or social media message that you later found out was not genuine?	_2
{Have you} discovered that someone has used your <card> details to pay for goods without your authorisation?	_3
{Have you} queried a transaction listed on your bank or credit card statement that you did not recognise?	_4
{Have you} made a formal complaint about the service you have received from a bank or other financial institution?	_5
{Have you} tried to open a bank account and been refused for any reason?	_6
{Have you} been refused a claim on an insurance product that you expected to cover you?	_7
{Have you} been denied credit for which you had applied?	_8
{Have you} complained to a remittance provider about high charges when sending or receiving money?	_9
{Have you} lost money as a result of hackers or phishing scams?	_10

Attitudes and behaviour

INTERVIEWER: repeat the scales as many times as necessary. For QS1_1, if respondent answers (dis)agree: check 'Would you say you completely (dis)agree'? If they say they don't know, check whether they feel they neither agree nor disagree (record as 3 on scale), or if they are really uncertain (in which case record their response as don't know). For statement 10: If the respondent says 'I don't have any debt', record the response as 5 'completely disagrees'.

Note to agency: the numbering of some items (e.g. QS1_5, QS1_7, etc) is not consecutive on purpose, in order to match the numbering of the previous version of the Toolkit.

ASK ALL

I am now going to read out some statements. I would like to know how much you agree or disagree with each of these statements (as it relates to you) Please use a scale of 1 to 5, where: 1 tells me that you completely agree with the statement, and 5 shows that you completely disagree	**Question: QS1**
Create a single variable for each statement. Record responses as: 1='completely' agree, 2, 3, 4, 5 completely disagree. -97='Don't' know, -98 Not relevant, -99=Refused.	
Rotate list	
INTERVIEWER: READ OUT EACH STATEMENT AND WAIT FOR RESPONSE.	**<Label using the statement>**
I find it more satisfying to spend money than to save it for the long term	_1
I am prepared to risk some of my own money when saving or making an investment	_2
Money is there to be spent	_3
I am satisfied with my present financial situation	_4
I keep a close personal watch on my financial affairs	_5
My financial situation limits my ability to do the things that are important to me	_7
I set long term financial goals and strive to achieve them	_8
I believe that money in a bank will be safe even if the bank fails	_9
I have too much debt right now	_10
If I borrow money I have a responsibility to pay it back	_11
I believe that banks should check the ethics of companies before providing them with banking services	_12

ASK ALL

And how often would you say this statement applies to you? **For each statement could you tell me whether it** Always, often, sometimes, rarely or never **applies to you?**	**Question: QS2**
Create a single variable for each statement. Record responses as: 1='Always,' 2, 3, 4, 5='Never,' -97='Don't' know, -98 Not relevant, or -99=Refused.	
Rotate list	
INTERVIEWER: READ OUT EACH STATEMENT AND WAIT FOR RESPONSE.	**<Label using the statement>**
I tend to worry about paying my normal living expenses	_1
My finances control my life	_2
Before I buy something I carefully consider whether I can afford it	_3
I have money left over at the end of the month	_4
I pay my bills on time	_5
I share the passwords and PINs of my bank account with my close friends	_6
Before buying a financial product online I check if the provider is regulated in my country	_7
I share information about my personal finances publicly online (e.g. on social media)	_8
Before I buy something I consider whether the company strives to improve its social or environmental impact	_9
I buy goods and services that I do not need	_10

Note to agency: the numbering of some items (e.g. QS3_1, QS3_3, QS3_4, QS3_6, etc.) is not consecutive on purpose, in order to match the numbering of the previous version of the Toolkit.

ASK ALL

I would also like to know how well this statement describes you or your situation. For each statement could you let me know whether it describes your situation or thoughts completely, very well, somewhat, very little or not at all.	**Question: QS3**
Create a single variable for each statement. Record responses as: 1='completely,' 2, 3, 4, 5='not' at all, -97='Don't' know, -98 Not relevant, or -99=Refused.	
Rotate list	
INTERVIEWER: READ OUT EACH STATEMENT AND WAIT FOR RESPONSE.	**<Label using the statement>**
I tend to ignore the small print unless something goes wrong	_1
Because of my money situation, I feel like I will never have the things I want in life	_3
I am honest even if it puts me at a financial disadvantage	_4
I am happy to discuss my financial situation with people I know well	_6
I trust financial service providers to treat me fairly	_7
If a shop keeper gave me too much change, I would probably keep it	_8
I am concerned that my money won't last	_9
I am just getting by financially	_10
I tend to live for today and let tomorrow take care of itself	_11
I sometimes buy a lottery ticket when I feel like I don't have enough money	_12
I regularly change the passwords on websites that I use for online shopping and personal finances	_13

ASK ALL or filter using QD14

I am now going to read out some statements. I would like to know how much you agree or disagree with each of these statements (as it relates to you) Please use a scale of 1 to 5, where: 1 tells me that you completely agree with the statement, and 5 shows that you completely disagree	**Question: QS4**
Create a single variable for each statement. Record responses as: 1='completely' agree, 2, 3, 4, 5 completely disagree. -97='Don't' know, -98 Not relevant, -99=Refused.	
Rotate list	
INTERVIEWER: READ OUT EACH STATEMENT AND WAIT FOR RESPONSE.	**<Label using the statement>**
I think that it is safe to shop online using public Wi-Fi networks (e.g., in cafés, airports, shopping malls)	_1
It is important to pay attention to the security of a website before making a transaction online (e.g. https sites, safety logo or certificate)	_2
I think it is not important to read the terms and conditions when buying something online	_3
Digital tools facilitate the management of my personal finances	_4
I trust the financial services provided by online banks and FinTechs (such as <national examples>)	_5
I believe that financial service providers should use a wide range of non-financial personal data, including from social media, in decisions about granting credit	_6
I am more likely to buy impulsively when I buy online than in person in a shop	_7
It is more likely that I would read the small print of a contract if it is on paper than online	_8

ASK ALL

I am now going to read out some statements. I would like to know how much you agree or disagree with each of these statements (as it relates to you)	Question: QS5
Please use a scale of 1 to 5, where: 1 tells me that you completely agree with the statement, and 5 shows that you completely disagree	
Create a single variable for each statement. Record responses as: 1='completely' agree, 2, 3, 4, 5 completely disagree. -97='Don't' know, -98 Not relevant, -99=Refused.	
Rotate list	
INTERVIEWER: READ OUT EACH STATEMENT AND WAIT FOR RESPONSE.	**<Label using the statement>**
It is important to invest in companies that strive to minimise their negative impact on the environment	_1
It is important to invest in companies that strive to improve their social impact	_2
It is important to invest in companies that strive to improve their risk management, ethics and accountability	_3
It is more important to invest in companies that are making a profit than in companies that strive to minimise their negative impact on the environment	_4
It is more important to invest in companies that are making a profit than in companies that strive to improve their social impact	_5
It is more important to invest in companies that are making a profit than in companies that strive to improve their risk management, ethics and accountability	_6

Financial knowledge

ASK ALL

Thank you. And, now something slightly different. Could you tell me how you would rate your overall knowledge about financial matters compared with other adults in <COUNTRY NAME>? **Would you say it was… [INTERVIEWER PROBE LEVEL IF NOT CLEAR FROM FIRST RESPONSE]**	**Question: QK1**
Record responses as: 1='very' high, 2, 3, 4, 5='very' low	
INTERVIEWER: READ OUT a-e	**Label: Self-rated knowledge**
a) Very high	1
b) Quite high	2
c) About average	3
d) Quite low	4
e) Very low	5
Don't know	-97
Refused	-99

INTERVIEWER READ OUT: "The next section of the questionnaire is more like a quiz" [translation note: a quiz is a fun activity, or game and should not be translated to 'test'. If in doubt leave this sentence out]. "The questions are not designed to catch you out, so if you think you have the right answer, you probably do. <u>If you don't know the answer, just say so</u>."

Note to agency on this quiz section. It is anticipated that the questions can be answered without a calculator. However, respondents should not be prevented from using a calculator as this is a valid approach to handling numeracy problems in real life.

Code -999 should only be used if the interviewer is absolutely convinced that the response does not fit within the normal boundaries of the question. The interviewer should not provide hints about the type of response expected, but may ask the respondent to repeat themselves.

Note to agency: Change to local currency. Change the relationship between the individuals, if this is likely to be culturally sensitive, or if brothers would not typically share money equally, and provide a note of this for international comparisons.

ASK ALL

Imagine that five <brothers> are given a gift of <$>1,000 in total. If the <brothers> have to share the money equally how much does each one get?	Question: QK2
INTERVIEWER: READ QUESTION AGAIN IF ASKED	Label: Five brothers are given a gift of X
Record response [Minimum value=0]	___
Don't know	-97
Refused	-99
Irrelevant answer	-999

Note to agency: Change to local currency. Change the relationship between the individuals, if this is likely to be culturally sensitive and provide a note of this for international comparisons. Add in current inflation rate in your country and provide a note on the rate used and the date from which this was taken. Option D is considered to be correct if reported spontaneously but it is not to be read out loud; note that for online versions it may be necessary to provide an open ended response option to replicate this.

INTERVIEWER: IF QUESTION QK2 IS NOT ASKED READ OUT: **Five brothers are going to be given a gift of $1,000 in total to share between them.**

ASK ALL

Now imagine that the <brothers> have to wait for one year to get their share of the $1,000 and inflation stays at <X> percent. In one year's time will they be able to buy:	Question: QK3
INTERVIEWER: READ OUT a-c	Label: Brothers have to wait for one year with inflation at X percent
a)More with their share of the money than they could today	1
b)The same amount; or	2
c)Less than they could buy today	3
[Spontaneous] d) *It depends on the types of things that they want to buy*	4
Don't know	-97
Refused	-99
Irrelevant answer	-999

Note to agency: Change to local currency; and consider whether the term interest may be culturally sensitive (possibly replace with return).

ASK ALL

You lend $25 to a <friend/acquaintance> one evening and he gives you $25 back the next day. How much interest has he paid on this loan?	Question: QK4
INTERVIEWER: READ QUESTION AGAIN IF ASKED	Label: Interest on loan
OPEN RESPONSE [INTERVIEWER: If words such as nothing or zero are given, or responses such as 'he didn't 'are used, please convert these to a number and record]	__
Don't know	-97
Refused	-99
Irrelevant answer	-999

Note to agency: Change to local currency. Do not change percentage rate. If savings accounts incur fees in your country, please include a phrase to reflect the wording in <> and provide a note to this effect for international comparisons.

ASK ALL

Imagine that someone puts $100 into a <no fee, tax free> savings account with a guaranteed interest rate of 2% per year. They don't make any further payments into this account and they don't withdraw any money. How much would be in the account at the end of the first year, once the interest payment is made?	**Question: QK5**
INTERVIEWER: READ QUESTION AGAIN IF ASKED	**Label: Simple interest**
Record Response [Minimum value=0]	__
Don't know	-97
Refused	-99
Irrelevant answer	-999

Note to agency: Change to local currency. Note that this question is intended to indicate whether the respondent knows about compound interest, and so the amount in each of the options must be exactly equal to the total interest without compounding.

If savings accounts do not automatically compound interest please ask *and how much would be in the account at the end of five years if the interest was also saved in the account at the end of each year* ***[add if necessary: remembering there are no fees or tax deductions]?***

ASK ALL

and how much would be in the account at the end of five years [add if necessary: remembering there are no fees or tax deductions]? Would it be:	**Question: QK6**
INTERVIEWER: READ LIST a-d	**Label: Compound interest**
a) More than $110	1
b) Exactly $110	2
c) Less than $110; *or is it*	3
d) Impossible to tell from the information given	4
Don't know	-97
Refused	-99
Irrelevant answer	-999

Note to agency: if the word 'risk' is difficult to translate, it may be preferable to us question QK5a_alt instead of QK5a. For countries/regions where the stock market may not be widely understood QK5c_alt may be more appropriate than QK5c. Countries may wish to test both versions of these two questions.

ASK ALL

I would like to know whether you think the following statements are true or false	**Question: QK7**
Create a single variable for each statement. Record responses as: 1=True, 0='False,' -97='Don't' know, -99=Refused	
INTERVIEWER: READ OUT EACH STATEMENT AND WAIT FOR RESPONSE	**Label QK7_**
An investment with a high return is likely to be high risk	_1
If someone offers you the chance to make a lot of money it is likely that there is also a chance that you will lose a lot of money	_1alt
High inflation means that the cost of living is increasing rapidly	_2
It is usually possible to reduce the risk of investing in the stock market by buying a wide range of stocks and shares	_3
It is less likely that you will lose all of your money if you save it in more than one place	_3alt
A digital financial contract requires signature of a paper contract to be considered valid	_4
The personal data that I share publicly online may be used to target me with personalised commercial or financial offers	_5
Crypto-currencies have the same legal tender as banknotes and coins	_6

Background information

INTERVIEWER READ OUT: ***I would now like to ask you a few more questions about yourself and your household. As I mentioned before, we want to make sure that we have talked to people from all kinds of households, to reflect our national population.***

ASK ALL

In the last 12 months, how often have you done the following?	**Question: QD6**
MULTICODED. Create a single variable for each statement. Record responses as 1='Never,' 2='Sometimes,' 3='Often', 4='Very often' -97='Don't' know. -99=Refused	**Label: <Label using statements>**
Rotate list	
INTERVIEWER: READ OUT EACH STATEMENT AND WAIT FOR RESPONSE.	
Written document on a personal computer (desktop or laptop)	_1
Sent or received an email	_2
Used a mobile phone to make calls	_3
Made calls over the internet (including video calls)	_4
Participated in social networks online (such as <national examples>)	_5
Used instant messaging applications (such as <national examples>)	_6
Looked for information online (such as reading the news or finding information about goods and services)	_7
Read a magazine on paper	_8
Read a newspaper on paper	_9
Listened to the radio	_10
Watched TV	_11
Played a game on an electronic device	_12

Note to agency: the following question is optional as it is not necessary to know the precise age for the purpose of the international comparison.

ASK ALL

Please could you tell me how old you are, currently?	**Question: QD7**
	Label: Age
Age: Minimum value='18'	__
Refused	-99

Note to agency: For face-to-face interviews this can be put onto a showcard and the respondent can give the corresponding letter. Do not include ‘refused’ on a showcard. If the interviewer is reading out the categories it is not necessary to start from 18 if it is clear that the respondent is older.

ASK ALL or ask IF QD7=-99)

Would you {instead} tell me which of these age bands you fall into?	**Question: QD7_a**
INTERVIEWER: READ OUT:	**Label: Age bands**
18-19	1
20-29	2
30-39	3
40-49	4
50-59	5
60-69	6
70-79	7
80+	8
Refused	-99

ASK ALL

Please can you tell me how you would describe your ethnicity?	**Question: QD8**
	Label: Ethnicity
AGENCY TO ADD IN CODES	
Don’t know	*-97*
Refused	*-99*

Note to agency: Reverse the order of the levels if more appropriate in your country –but make sure values remain as shown (e.g. Post-graduate should still be recorded as 1). For face-to-face interviews 1-6 can be put onto a showcard and the respondent can give the corresponding number.

ASK ALL

What is the highest level of education that you have completed?	**Question: QD9**
INTERVIEWER: READ OUT THE LIST, STOP AND MARK THE FIRST THAT APPLIES	**Label: Educational level**
Post-graduate education or equivalent (e.g. master’s degree, PhD or advanced professional training)	1
University-level education (e.g. degree or higher-level vocational training)	2
Upper secondary school or high school	3
Lower secondary school or middle school (where relevant)	4
Primary school	5
No formal education	6
Refused	-99

Note to agency: the questions on work status may need to be further refined for the purpose of identifying target groups, such as those on parental leave. Additional questions could be added to explore the type of employer, size of enterprise, self-employed status, amount of time in business etc. as required at the national level. For international comparisons, it will be beneficial to keep the suggested high-level categories.

For face-to-face interviews this can be put onto a showcard and the respondent can give the corresponding letter. Do not include ‘don’t know’ or ‘refused’ on the showcard.

ASK ALL

And which of these best describes your current work situation? Please refer to your *main* working status	Question: QD10
INTERVIEWER: READ OUT FROM TOP, STOP AND MARK THE FIRST THAT APPLIES	**Label: Work situation**
Self-employed [work for yourself]	1
In paid employment [work for someone else]	2
Apprentice	3
Looking after the home	4
Looking for work [unemployed]	5
Retired	6
Unable to work due to sickness or ill-health	7
Not working and not looking for work	8
Student	9
Other	10
Don't know	-97
Refused	-99

Note to agency: For face-to-face interviews this can be put onto a showcard and the respondent can give the corresponding letter. Do not include 'don't know' or 'refused' on the showcard.]

ASK ALL

And are any others also relevant?	Question: QD11
MULTICODED. Create a single variable for each response. Record responses as: 1='Yes,' 0=No, -97=Do not know, -99 = Refused	
	Label: Additional work situation
INTERVIEWER: READ OUT: MARK ALL THAT APPLY.	
Self-employed [work for yourself]	_1
In paid employment [work for someone else]	_2
Apprentice	_3
Looking after the home	_4
Looking for work [unemployed]	_5
Retired	_6
Unable to work due to sickness or ill-health	_7
Not working and not looking for work	_8
Student	_9
Other	_10
Refused	_99

Note to agency: this optional question has been included for countries where migrants are an important target group. However it may be a sensitive question in some countries.

ASK ALL

Were you born in < Name of country/region, as required>?	Question: QD12
	Label: Place of birth
Yes	1
No	0
Refused	*-99*

Note to interviewer: please stress confidentiality, and inform the respondent that the information is needed to make sure that the sample is representative of the population

Note to agency: X= 75% of median household income; Y=125% of median household income; currency should be changed to local currency. Please make sure the **median (not mean)** monthly income for a household is used – before or after tax, depending which is prevalent in your country. If monthly incomes are very uncommon, please choose a different time period and record this. Please provide information with the dataset to describe the source and date of the median income data, and the amount. Please create a table of household income before and after tax if necessary in order to be able identify the correct bands regardless of how the respondent chooses to answer. It may also be necessary to create a conversion table of weekly or fortnightly income for the interviewer to use.

ASK ALL

And finally, could you tell me which of these categories your household income usually falls into [Use as appropriate: before/after tax]? Would you say it is…	**Question: QD13**
INTERVIEWER: READ OUT a- c.	**Label: Income band**
a) Up to $X a month	1
b) Between $X and $Y a month; or	2
c) $Y or more a month	3
Don't know	-97
Refused	-99

Note to interviewer: please thank the respondent for their time, and close the interview. Remind the respondent that the data will remain confidential, and provide them with contact details in case of questions.

References

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OECD (2020), *Financial Literacy of Adults in South East Europe*, OECD, https://www.oecd.org/financial/education/Financial-Literacy-of-Adults-in-South-East-Europe.pdf (accessed on 28 March 2022). [7]

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OECD (2016), *OECD/INFE International Survey of Adult Financial Literacy Competencies*, OECD, http://www.oecd.org/daf/fin/financial-education/OECD-INFE-International-Survey-of-Adult-FInancial-Literacy-Competencies.pdf (accessed on 9 January 2018). [3]

Annex A. Overview of questions and scores

Overview of questions

The questionnaire in this toolkit has been updated since the previous international studies were published.[7] The table below is intended to help users of the current questionnaire to prioritise the choice of questions, and track changes with respect to previous versions.

Table A A.1. Summary of questions

Question number	How/whether this question has been used in previous OECD studies	Information collected	Additional information	Creating financial literacy scores
QD1	Demographic variable	Gender		
QD2		Region	Useful for country level analysis	
QD3	Explanatory variable	Size of settlement	The size of the settlement can make a difference to access to services, including financial services. Previous versions of this question asked about the usual community, but the question has been simplified following feedback	
QD4		The language of the interview	Differences by language may indicate inequalities and identify whether there is a need to develop financial education in various languages	
QD5, QD5_ad,	Demographic variable	Household composition	National institutions using the questionnaire may wish to add additional	

[7] OECD/INFE 2020 International Survey of Adult Financial Literacy https://www.oecd.org/financial/education/oecd-infe-2020-international-survey-of-adult-financial-literacy.pdf

Question number	How/whether this question has been used in previous OECD studies	Information collected	Additional information	Creating financial literacy scores
QD5_ch			questions to explore the *financial* relationships between household members	
QD14	New question	Access to Internet	Depending on the data collection method, the question can be used to filter subsequent questions or create weights.	
QF1_a	Used to create the budgeting variable	Day to day financial decision making	Question that takes into account people who take care of their own money but not that of their household	Financial literacy score - Financial behaviour: 1 point if personally or jointly responsible for money management [QF1='1' or 2 OR QF1_a='1]' AND actively keeping track of money [at least 2 Yes responses on QF2]. 0 in all other cases.
QF1	Used to create the budgeting variable	Day to day financial decisions of the household	To identify those who take responsibility for financial decisions	
QF2	Used to create the budgeting variable	Various behaviours that are related to budgeting	Actively keeping track of money	
QF3	Used to create the active saving variable. Minor edits with respect to the 2018 Toolkit, the computation of the score is not affected.	Various forms of active saving	Allows the respondent to identify a range of ways in which they are exhibiting saving behaviour.	Financial literacy score - Financial behaviour: 1 point for any type of active saving (answers yes to any option including any relevant options added at the national level). 0 in all other cases.
QF4		Financial resilience in the face of an expenditure shock –at the time of interview	Indicates access to existing resources for an unexpected expense and may be an aspect of financial well-being	
QF4pre	New question	Financial resilience in the face of an expenditure shock – before COVID-19	New optional question for countries that have not participated in the 2019/2020 OECD INFE survey and that would like to compare the results of QF4 with the pre-COVID19 situation	
QF5	Used in additional analyses	Goal setting	Identifies people that have one or more financial goals, either alone or with their partner	
QF6		Most important goal	This question could be useful when designing financial education programmes targeted to specific needs	
QF7	Used in additional analyses. Small edit in the body of the question, to clarify that the question is about financial goals	Action to meet a goal	Identifies the types and combination of actions taken to meet a goal. The question is intended to identify the	

Question number	How/whether this question has been used in previous OECD studies	Information collected	Additional information	Creating financial literacy scores
			behaviour of the respondent	
QF8	Used in additional analyses	Confidence that retirement plans are adequate	Creates a simple indicator of the level of confidence that the respondent is/will be comfortable in retirement	
QF9	Clarifications added in the note to interviewers	Method of funding retirement	Identifies the types and combination of actions taken to fund retirement. Useful when designing financial education programmes and analysing national trends. Countries may wish to reorder, or add new codes	
QF10	*Does not exist anymore. It included behaviour and attitudes statement in the 2015 Toolkit*			
QF11	Used to filter respondents to QF12	Making ends meet	This question is used as a filter to find out how people manage a shortfall	
QF12	Used to create the borrowing to make ends meet variable	Approach taken to making ends meet	One response option was added with respect to the 2018 Toolkit (Use someone else's credit card) The various responses are used to create a variable that identifies people who borrowed to make ends meet	Financial literacy score - Financial behaviour. This variable takes the value of 0 if the respondent borrowed to make ends meet and 1 if the respondent did not borrow to make ends meet or did not face a shortfall. Specifically, it takes a value of 0 if the respondent answered Yes at any _3 [Access credit by using existing contacts or resources] or any _4 [Borrow from existing credit line] or any _5 [Access additional credit] or any _6 [Fall behind] or other country specific responses indicating that he/she used credit to make ends meet. 1 point is awarded in all other cases. Note that this means that missing data will therefore result in 1 point on this measure. This approach assumes that the % of missing data is small.
QF13		Financial resilience in the face of an income shock –at the time of interview	Indicates flexibility in the face of an income shock and may be an aspect of financial well-being. Note that the previous version of this question asked about the household, but this was not relevant to all respondents	
QF13pre		Financial resilience in the face of an income shock – before COVID-19	New optional question for countries that have not participated in the 2019/2020 OECD INFE survey and that would like to compare the results of QF13 with the	

Question number	How/whether this question has been used in previous OECD studies	Information collected	Additional information	Creating financial literacy scores
			pre-COVID19 situation	
QP1	Used as a measure of financial inclusion; and used as a filter for QP2 and QP3. The name of the variable has changed (it was Qprod1_a in the 2018 Toolkit). One response option was added (products labelled as ESG or sustainable)	Financial product awareness	Awareness is considered to be an important aspect of inclusion. **Edits should be made to ensure that the list of products provides relevant data at the national level**	Financial literacy score - Financial behaviour: The variable choosing products is constructed by creating two intermediate variables, and then creating a derived variable. Country specific responses can also be coded. The two intermediate variables are the following: 1. QP_D1: Tried to compare across providers taking value of: 1 if variable QP5 is equal to 1 or 4 (I considered several or I looked around but there were no others), and 0 otherwise. Note that 0 includes no recent product choice/not applicable. 2. QP_D2: Sought information or advice taking values • 2 if yes at any of QP7_1 or QP7_2 or QP7_3 (Best-buy guidance / Price comparison website / Recommendation from independent financial adviser) • 1 if yes at any of QP7_4, QP7_5, QP7_6. or QP7_7 (information from an advert or brochure, recommendation from friends etc., information from bank staff, or other information • 0 otherwise. Note that 0 includes no recent product choice. The final variable Qb7_new Tried to shop around or use independent info or advice takes the following values: • 2 if QP_D2 =2. The value of 2 indicates Used independent info or advice • 1 if QP_D1 =1 or QP_D2 =1. The value of 1 indicates Some attempt to make informed decision • 0 Otherwise. The value 0 indicates 'Not shopped around and no attempt to make informed decisions (including no recent product choice).
QP2	Used to create variables of product holding as an indicator of financial inclusion. The name of the variable has changed (it was Qprod1_b in the 2018 Toolkit). One response option was added (products labelled as ESG or sustainable)	Product holding		
QP3	Used as filter to find out about financial product choice. The name of the variable has changed (it was Qprod1_c in the 2018 Toolkit). One response option was added (products labelled as ESG or sustainable)	Product choice		
QP4	The name of the variable has changed (it was Qprod1_d in the 2018 Toolkit).	Most recent product	This question may be useful for national analyses, to explore whether product choice behaviour depends on the product being chosen. It is not used in international comparisons	
QP5	Used to create a variable on product choice behaviour. The name of the variable has changed (it was Qprod2 in the 2018 Toolkit).	How the most recent product choice was made	This question is intended to show whether people are shopping around for financial products	
QP6	Question to further explore product choice. The name of the variable has changed (it was Qprod2_a in the 2018 Toolkit).	Question to explore aspects of the importance of the company	The options are intended to highlight the relevance of speed, trust and customer loyalty	
QP7	Used to create the product choice variable. The name of the variable has changed (it was Qprod3_INT in the 2018 Toolkit).	Short question about the information that influenced the most recent product choice decision		
QP8	New question about use of digital financial	Information about using	This question focuses on actions related	

Question number	How/whether this question has been used in previous OECD studies	Information collected	Additional information	Creating financial literacy scores
	services	digital financial services	to digital financial services that are not carried out often, such as opening accounts or taking out credit.	
QP9	New question about use of digital financial services	Information about using digital financial services	This question focuses on actions related to digital financial services that are carried more often	
QP10	The name of the variable has changed (it was Qprod4 in the 2018 Toolkit). Item _2 was edited and one item was added (about being denied credit)	Information about issues related to financial product use	This question provides information that could be used to inform financial education and financial consumer protection policy	
QS1	Some items were dropped because they are covered elsewhere. Item _3 (Money is there to be spent, has become optional).	Various statements that are designed to indicate attitudes and behaviours	Statement 1 and 3 go into the attitude score. Statement 4, 7 and 10 are included in order to explore financial well-being (but are not part of the CFPB score) Statement 5 and 8 are included in the financial behaviour score	Financial literacy score - Financial behaviours: • I keep a close personal watch on my financial affairs: 1 point for respondents who put themselves at 1 or 2 on the scale [agrees]. 0 in all other cases. • I set long term financial goals and strive to achieve them: 1 point for respondents who put themselves at 1 or 2 on the scale [agrees]. 0 in all other cases. Financial literacy score - Financial attitude: I find it more satisfying to spend money than to save it for the long term (and Money is there to be spent, if it asked). Recoded so that invalid responses (-97, -98 and -99 are equal to 3)
QS2	New items were added (Statements 6 to 11)	Various statements that are designed to indicate attitudes and behaviours	Statement 1, 2 and 4 are included in order to explore subjective financial well-being. Statement 3 and 5 are included in the financial behaviour score. New statements: Statement 6 to 8 are about digital financial literacy Statement 9 is about sustainability Statement 10 is about over-consumption	Financial literacy score - Financial behaviours: • Before I buy something I carefully consider whether I can afford it: 1 point for respondents who put themselves at 1 or 2 on the scale [always]. 0 in all other cases. • I pay my bills on time: 1 point for respondents who put themselves at 1 or 2 on the scale [always]. 0 in all other cases. Digital financial literacy – behaviour: • I share the passwords and PINs of my bank account with my close friends: 1 point for respondents who put themselves at 4 or 5 on the scale [never]. 0 in all other cases. • Before buying a financial product online I check if the provider is regulated in my country: 1 point for

Question number	How/whether this question has been used in previous OECD studies	Information collected	Additional information	Creating financial literacy scores
				respondents who put themselves at 1 or 2 on the scale [always]. 0 in all other cases. • I share information about my personal finances publicly online (e.g. on social media): 1 point for respondents who put themselves at 4 or 5 the scale [never]. 0 in all other cases.
QS3	Some items were dropped because they are covered elsewhere.	Various statements that are designed to indicate attitudes and behaviours	Statements 4 to 8 are included to explore aspects of integrity Statements 3, 9, 10 and 11 are included in order to explore subjective financial well-being. Statements 13 to 15 are about digital financial literacy	Financial literacy score - Financial attitude: I tend to live for today and let tomorrow take care of itself Recoded so that invalid responses (-97, -98 and -99 are equal to 3) Digital financial literacy – behaviour: • I regularly change the passwords on websites that I use for online shopping and personal finance: 1 point for respondents who put themselves at 1 or 2 on the scale [completely]. 0 in all other cases.
QS4	New question	Various statements about attitudes related to digital financial services	Statements 1 to 3 are included in the digital financial literacy score. The other statements refer to attitudes and behaviours that are not part of the score.	Digital financial literacy – attitudes: • I think that it is safe to shop online using public Wi-Fi networks: 1 point for respondents who put themselves at 4 or 5 on the scale [disagree]. 0 in all other cases. • It is important to pay attention to the security of a website before making a transaction online: 1 point for respondents who put themselves at 1 or 2 on the scale [agree]. 0 in all other cases. • I think it is not important to read the terms and conditions when buying something online: 1 point for respondents who put themselves at 4 or 5 on the scale [disagree]. 0 in all other cases.
QS5	New question	Various statements about attitudes related to sustainable finance		
QK1	Compared with the financial knowledge score	Self-rated assessment of financial knowledge		
QK2		Division	Question to test basic numeracy. This is very easy in some countries, and therefore does not add value in a knowledge score	

Question number	How/whether this question has been used in previous OECD studies	Information collected	Additional information	Creating financial literacy scores
Qk3		Impact of inflation on spending power	Included in financial literacy score (knowledge)	Financial literacy score - Financial knowledge: 1 for correct responses [c, unless the country indicates otherwise; or d, if mentioned spontaneously]. 0 in all other cases.
QK4		Identification of interest	Included in financial literacy score (knowledge)	Financial literacy score - Financial knowledge: 1 for correct response [0]. 0 in all other cases.
QK5		Simple interest calculation	Included in financial literacy score (knowledge). This question has been slightly reworded since 2015 to say someone instead of you, in order to avoid implying that the respondent would consider an interest bearing account	Financial literacy score - Financial knowledge: 1 for correct response [102]. 0 in all other cases.
QK6		Understanding the implication of compounding	Included in financial literacy score (knowledge)	Financial literacy score - Financial knowledge: 1 for a correct response to QK6 if and only if the response to Calculation of interest plus principal (QK5) was also correct. 0 in all other cases.
QK7_1		Relationship between risk and reward	Included in financial literacy score (knowledge)	Financial literacy score - Financial knowledge: 1 for a correct response [1/True]. 0 in all other cases.
QK7_2		Definition of inflation	Included in financial literacy score (knowledge)	Financial literacy score - Financial knowledge: 1 for a correct response [1/True]. 0 in all other cases.
QK7_3		Risk diversification	Included in financial literacy score (knowledge)	Financial literacy score - Financial knowledge: 1 for a correct response [1/True]. 0 in all other cases.
QK7_4	New question	Understanding of digital contracts	Included in the digital financial literacy score (knowledge)	Digital financial literacy – knowledge: 1 for a correct response [0/False – this will be checked at national level in participating countries]. 0 in all other cases.
QK7_5	New question	Understanding of personal data use	Included in the digital financial literacy score (knowledge)	Digital financial literacy – knowledge: 1 for a correct response [1/True – this will be checked at national level in participating countries]. 0 in all other cases.
QK7_6	New question	Understanding of crypto-assets	Included in the digital financial literacy score (knowledge)	Digital financial literacy – knowledge: 1 for a correct response [0/False – this will be checked at national level in participating countries]. 0 in all other cases.
QD6	Modified question	Media use	This question can be useful to understand levels of familiarity with digital media and tools, and possibly to identify	

Question number	How/whether this question has been used in previous OECD studies	Information collected	Additional information	Creating financial literacy scores
			suitable delivery channels for financial education	
QD7		Age	If countries want to create different age categories, this question could be useful	
QD7_a	Demographic variable	Age	Categories should be kept the same for international comparisons	
QD8		Ethnicity	Ethnicity may be useful in analyses of vulnerability or inequality at the national level	
QD9	Demographic variable; updated to simplify and reflect international standard levels	Education level	Question wording and responses are different from those used in the 2015 Toolkit	
QD10	Demographic variable	Employment status (main)		
QD11		Employment status (additional)	Added to account for people with multiple roles, to be used in national analyses	
QD12		Place of birth	Added to indicate migrants in a similar manner to that used in PISA	
QD13	Demographic variable	Income level	Countries need relevant household statistics to create this variable	

Creating financial literacy scores

Financial knowledge score

The knowledge score is computed as the number of correct responses to the seven financial knowledge questions (QK3 to QK7_3). It ranges between 0 and 7. Data should be processed according to the instructions in Table A1 above to ensure that there are no missing, or invalid values.

Financial behaviour score

The behaviour score is computed as a count of the number of "financially savvy" behaviours relating to budgeting (QF1 and QF2), active saving (QF3), avoiding borrowing to make ends meet (QF11 and QF12) choosing products (various QP questions are used, creating two points on this score), keeping watch on financial affairs (QS1), striving to achieve goals (QS1), making considered purchases (QS2), paying bills on time (QS2). It ranges between 0 and 9. Data should be processed according to the instructions in Table A1 above to ensure that there are no missing, or invalid values.

Financial attitudes score

The attitude score is computed as the average response across two attitude questions: i.e., the sum of the values for the three statements divided by two (after recoding to account for values -97, -98 and -99 as mentioned above). If the statement "Money is there to be spent" is asked in a given country, the average will be computed over the three statements. The average obtained should be rescaled to range from 0 to 4 (instead of from 1 to 5). The attitudes score, therefore, ranges from 0 to 4.

Overall financial literacy score

The overall financial literacy score is obtained as the sum of the three previous scores: financial knowledge (7), financial behaviour (9) and financial attitudes (4). It can take any value between 0 and 20. If required, it could be normalised to 100 for reporting by multiplying by 100/20.

- Institutions and researchers comparing data collected with the 2022 version of the toolkit with previous data should take into account: Starting from the 2015 version of the Toolkit, question QK2 became optional. Comparisons of older data with data collected with the 2012 toolkit should be computed without QK2.
- Starting from the 2022 version of the Toolkit, the attitudes score is scaled to range from 0 to 4 (for consistency with the other behaviour and knowledge components). This means that the overall financial literacy score ranges from 0 to 20. Comparisons with older data should take this into account and recompute previous scores applying the same rescaling.
- Starting from the 2022 version of the Toolkit, the statement "Money is there to be spent" became optional. Comparisons with older data should exclude this statement.

Digital financial literacy score

Knowledge

The knowledge component of the digital financial literacy score is computed as the number of correct responses to the three questions (QK7_4, QK7_5, QK7_6). It ranges between 0 and 3. Data should be processed according to the instructions in Table A1 above to ensure that there are no missing, or invalid values.

Behaviour

The behaviour component of the digital financial literacy score is computed as a count of the number of "savvy" behaviours elicited by four statements (three in QS2 and one in QS3). It ranges between 0 and 4. Data should be processed according to the instructions in Table A1 above to ensure that there are no missing, or invalid values.

Attitudes

The attitudes component of the digital financial literacy score is computed as a count of the number of "savvy" attitudes elicited by three statements in QS4. It ranges between 0 and 3. Data should be processed according to the instructions in Table A1 above to ensure that there are no missing, or invalid values.

Overall score

The overall digital financial literacy score is obtained as the sum of the three previous components: knowledge (3), behaviour (4) and attitudes (3). It can take any value between 0 and 10. If required, it could be normalised to 100 for reporting by multiplying by 100/10.

Financial inclusion indicators

Financial inclusion indicators can be created by drawing on various questions, as described in Table A2.

Table A A.2. Computing financial inclusion indicators

Indicator	Question number	Discussion	Method used
Holds payment product	QP2	Identifies payment products across country level data, such as prepaid cards, current accounts etc.	Binary variable: takes value of 1 if any payment product is held, otherwise 0
Holds savings, investment or retirement product	QP2	Identifies savings, investment and retirement products across country level data, such as pensions, investment accounts, savings accounts. savings clubs, bonds, crypto-assets etc.	Binary variable: takes value of 1 if any savings, investment or retirement product is held, otherwise 0
Holds insurance	QP2	Identifies insurance products across country level data, such as car insurance, home insurance, etc.	Binary variable: takes value of 1 if any insurance product is held, otherwise 0
Holds credit product	QP2	Identifies credit products across country level data, such as mortgages, credit cards, microloans etc.	Binary variable: takes value of 1 if any credit product is held, otherwise 0
Aware of at least 5 products	QP1	Counts all positive responses across QP1	Binary variable: takes value of 1 if at least five positive responses, otherwise 0
Recent financial product choice	QP3	Identifies individuals that have made at least one product choice	Binary variable: takes value of 1 for any recent choice, otherwise 0
Relying on family and friends	QF3 and QF12	Identifies people who turn to family or friends to save money for them, or to help them to make ends meet	Binary variable: takes value of 1 if saving through family and friends **or** turning to family and friends to make ends meet, otherwise 0

Annex B. Interviewer briefings

Interviewers and their managers should be provided with a thorough briefing before undertaking the financial literacy survey, to ensure that they fully understand the purpose of the survey and the mechanics of the questionnaire. The interviewers are working on behalf of the commissioning body, and a poorly prepared interviewer will not only collect low quality data, but will also risk damaging the public image of the body commissioning the research.

This section details a recommended approach for such a briefing.

What is an interviewer briefing?

An interviewer briefing is typically a structured meeting between representatives of the commissioning body and fieldwork agency staff held in advance of fieldwork.[8] The meeting provides an opportunity for the fieldwork team to discuss the project directly with the authority; this opportunity for conversation can help to create a common sense of purpose which will encourage the fieldwork team to collect data of the highest quality.

Note that if the fieldwork will be conducted in several languages it is important to make sure the briefing(s) reflect this.

Who should conduct the briefing?

The briefing should be conducted by someone who can represent the commissioning body, or ‘client’; in other words, it should be given by someone who has detailed knowledge of the purpose of the survey, and some experience of research processes. This person (or team) will need to understand why the data is required and how it will be used.

Where and when should the briefing occur?

Ideally the briefing should occur in the offices of the fieldwork agency or in a nearby facility, to maximise the number of interviewers that can be briefed. It may be necessary to return on more than one occasion if the interviewers tend to work shifts.

If it is not possible to undertake onsite/local briefings (perhaps because the agency uses regional interviewers) an alternative approach would be to use a teleconference or even a video conference if technology permits.

Other methods of briefing the interviewers are possible. For example, it is possible to video a briefing to share with remote workers or part-time staff. Alternatively a written guidebook can be useful. Both of these methods will be less effective than a two-way conversation because the interviewers will be less likely to refer to the commissioning body at a later date to ask questions and seek clarification, but they do have

[8] The term fieldwork here refers to the data collection process, which may occur in people’s homes, or via the telephone.

the distinct advantage of providing a reference tool that can be returned to on numerous occasions and that can be accessed at a time that suits. Indeed such materials are of value in all cases for interviewers who were unable to attend the briefing or who would welcome the opportunity to prepare further.

It is a good idea to plan for the briefing to occur about a week before fieldwork begins. This means that the discussion will be fresh in the minds of the interviewers, but still gives the commissioning body time to get back to interviewers with responses to unanswered questions and solutions to issues raised.

However, if it is necessary to use inexperienced interviewers, it will be important to take ensure that they are trained appropriately and appropriately supervised.

Note that there is also a small possibility that the briefing session highlights concerns over the choice of fieldwork agency or the interviewers that have been assigned to the survey. In such cases it will be essential to allocate time to address these difficulties before fieldwork begins even if this puts pressure on timelines.

Who should attend the briefing?

The briefing is designed to ensure that the interviewers know why they are conducting the survey, what the rules and expectations are, and how to deal with any issues that might arise during the survey process. It is therefore important that the briefing is attended by all staff who anticipate working on the survey, and it is imperative that their managers attend as well, so that they fully appreciate the purpose of the survey and hear first-hand any concerns of their staff in order to properly monitor the survey process to ensure consistency and rigour.

How should the briefing be structured?

A briefing will typically have two components:

- a motivational presentation to make the interviewers feel involved and engaged with the project, and
- an instructional seminar that makes sure that the survey process is undertaken consistently and professionally. This should also include plenty of time for discussion, practice and questions.

It is beneficial to circulate the questionnaire amongst the interviewers before the briefing so that they have time to read it and make a note of any questions they may be uncomfortable with or uncertain about.

For the briefing itself, the following structure could be employed, tailored as necessary to fit the time and resources available (note that this assumes an interactive briefing, but a similar format could be employed for paper/video based briefings):

Opening remarks

- Introduce individuals, the commissioning body, and the purpose of the commissioning body.
- Provide an overview of the issues that led to the survey being commissioned – making points that will resonate with the interviewers, in order to make them enthusiastic about the project.

Overview of the survey

- Explain that the survey has a small number of questions that are designed to understand what people know about financial matters and how well people control their finances, make ends meet, plan for their future and choose financial products.
- Explain that the survey is being undertaken around the world, and stress that this is why it is so important that they follow the agreed approach. They might be interested to know which other countries will be participating.

It is essential that the overview of the survey provides the interviewers with a clear message about its importance. This message can then be developed into an introduction for the interviewers to use when speaking to potential participants in order to encourage participation.

In-depth discussion of the questions

It is worth going through each question in turn during the briefing session, or talking about a few questions that work as a cluster of items asking about similar things.

- First of all, read the question out loud. Let the interviewers hear the sound of it, and the intonations used to stress various elements of the question. Some of them may want to mark-up a questionnaire to make sure that they ask the question in the same way. For example, underlining a word that may otherwise be overlooked, or stressing a phrase that needs contemplating carefully.
- Ask them to consider how they would respond, and then to look at the response codes. If they feel that there are any gaps in the codes, make a note of them, and advise them on how to code answers that do not easily fit within the existing categories. If the question allows contextual changes, this can also provide an opportunity to edit questions.
- Explain the purpose of the question. It is much easier for the fieldworker to ask a question and listen to the answer if they understand why they are asking it.
- Pay particular attention to questions that require probing. The interviewers are sometimes expected to listen to the answers given, and probe for additional answers. Many of them will be very experienced at doing this. It is often worth letting them come up with ideas of how to approach such questions. This has two advantages. First, it allows some of them to show their skills, which will build their own confidence, and second, it helps those less experienced members of the fieldwork team to learn from their colleagues. However, if they cannot come up with any suggestions, you will need to be able to offer guidance. One solution may be to get them to role play these questions during the briefing session.
- Check that the interviewers are comfortable with the idea of asking each of the questions. Some interviewers may feel that the survey is very personal and private. If necessary, allow the interviewers time to discuss how they might deal with sensitive questions and encourage them to propose solutions.

Addressing potential issues

- Interviewers will be experienced at undertaking interviews on a range of topics, acting in a professional manner to make sure that the respondents feel comfortable and respected. However, it is still important to address specific issues that they may face whilst undertaking this specific survey and making sure that the necessary procedures and measures are in place to ensure the wellbeing of the respondent and the fieldworker.

- Discuss how the interviewers are going to encourage participation. Go over the way in which the interviewers will introduce themselves and the survey to potential respondents.
- It is particularly important that participants do not feel that their participation will be linked to any services or privileges provided by the state, or privately such as social benefits, bankruptcy proceedings or access to financial services. If necessary, provide the interviewers with some suggested words to make sure that the respondent feels that they are not under any obligation to take part, and that they will not receive or lose any benefits or goodwill from doing so.
- If the interviewers are going to be visiting people at home, discuss ways to ensure the personal safety of the interviewers (the fieldwork agency almost certainly has a policy on this, but this shows that the commissioning body also cares about the welfare of the interviewers).
- Ask the interviewers to try to ensure that they can conduct the interviews in private, or away from distractions. This is not always possible, but the respondent is less likely to answer honestly if there are people who might overhear – whether this is household members at home or strangers in a public place. If people are close enough to overhear the conversation it may be necessary to stop the interview to protect confidentiality.
- Whether the interview is conducted by phone or face-to-face, it is possible that the respondent will indicate that they have serious financial problems, or that they have an unmet need for information. It is good practice to have leaflets, telephone numbers or addresses to give to respondents, but only if you have good, reliable, reputable, impartial agencies that you are comfortable recommending. At no time and under no circumstances should the interviewer provide any kind of advice or guidance to the respondent, or try to access any service on their behalf. If they are asked their opinion they should politely explain that they are not allowed to provide this as they do not have the necessary training.

Do remember to give the interviewers plenty of opportunity to discuss the process with each other and with you. Provide them with your contact details so that they can get in touch if they have additional questions or concerns, and make sure that any questions that you couldn’t answer immediately are recorded and answered before fieldwork begins.

Annex C. Online surveys

The OECD/INFE includes several countries with almost total internet penetration and high levels of functional literacy. In some of these countries, online data collection methods have become commonplace. Online surveys have several advantages in such settings, most notably including reduced cost and ease of collecting and managing the resulting data, and also allowing people to respond to potentially sensitive questions in an anonymous and private manner. However, as with all approaches to collecting data, online surveys also pose certain challenges. In particular, as reading and digital literacy are pre-requisites for an online survey, it is difficult to get a fully diversified sample, and it is difficult to verify that the questions were actually answered by the intended respondent. The recent shift towards accessing the internet via mobile phones and tablets also poses certain challenges during the design phase, given the relatively small screen and lack of separate keyboard. A further challenge that must be addressed is the need to ensure full data protection and confidentiality whilst ensuring that all respondents are unique people drawn from a defined population. Moreover, respondents accessing the survey via a mobile or tablet may devote less attention to answering it than in a face-to-face interview.

In some countries, national statistics offices have found ways to gather robust data using mixed modes, but relying primarily on online methodologies. This approach typically involves providing internet access and equipment where necessary, and undertaking small numbers of face-to-face interviews to substitute the data collection with information from harder to reach groups. In order to facilitate this approach with the OECD/INFE survey, it is recommended that every effort is made to ensure that the core questionnaire can be migrated to an online platform in such countries.

This suggests that the survey should be as easy and unambiguous as possible to complete without an interviewer present. Questions should be as short as practicable to keep the respondent interested and focused and to avoid tiring them out.

Countries wishing to use the questionnaire should also apply good design principles. The layout should avoid formats that require very long (or wide) lists, because people will not scroll down (or sideways). This may mean splitting the attitude and behaviour questions over two or three screens.

Other good practices suggest that it may be more appropriate to use drop down boxes for scaled questions, rather than radio buttons, but that these must have neutral text in their original position, otherwise the responses will be biased according to the first text that respondents read. The use of a don’t know option should be considered carefully, and should never be put alongside a scale, as it makes the scale appear longer than it is, biasing responses. When using open-ended questions, care should be taken to present them appropriately (with sufficient space within the response box for a long response, for example, or a currency symbol already added for responses requiring only the digits to be entered). Filters will also need to be carefully designed, and question numbers must not be added to the screen. Respondents can be told how far through the questionnaire they are via a progress bar, and data should be saved regularly in order to ensure that as many useable responses as possible are saved, even if the respondent stops before the end.

Annex D. Checklist for submitting data to the OECD

The OECD encourages users of this toolkit to share their data for comparative analyses. When submitting data to the OECD/INFE Secretariat (SecretariatINFE@oecd.org), please provide

- The raw anonymised microdata
- The questionnaire used to collect data at national level (in the national language, or back translated into English) with a clear indication of any changes made to the questionnaire
- Replies to questions in the following table:

Please provide answers to the following questions, and supporting materials, such as questionnaires, where relevant.
Which authority or body commissioned the research? (with contact details)
Which survey agency undertook the research?
What were the dates of fieldwork?
What sample size has been achieved?
Have any groups of the population been over-sampled? If so, which?
How was the sample drawn? (e.g. random digit dialling, stratified sampling)
What was the data collection method? (e.g. face-to-face, telephone, online, mixed methods)
How were weights created? How should they be applied (if relevant)?
Which languages has the questionnaire been used in/translated into? Can the OECD share the questionnaire with researchers/the public?
The OECD plans to use the data collected through this exercise to inform its future research and analysis, in addition to the international report of the results of the survey itself. **If you DO NOT agree that data from your country is re-analysed by the OECD to inform future work**, after the publication of the results of the international comparative survey, please let us know. After the release of the results of the international survey, the OECD plans to make the data available for researchers and the public in the form of an international dataset (accessed via the OECD website). All data will be anonymised to ensure that individuals cannot be identified. **If you DO NOT agree to the inclusion of data from your country in this dataset** – or if you prefer that certain variables (e.g. region) are not shared, please let us know.
Does the commissioning body plan to analyse these data and publish the results (independently of the international analysis of the OECD/INFE Secretariat)? Can the link to the final report be added to the OECD member's portal?
Have any of the questions in black been changed or dropped? Please provide a detailed description of any changes with respect to the current questionnaire. If yes, what were the reasons for doing so? [Please note that this is strongly discouraged for countries wishing to participate in the international comparison]

www.oecd.org/financial/education

OECD

NATIONAL STRATEGIES FOR FINANCIAL EDUCATION

OECD/INFE Policy Handbook

NATIONAL STRATEGIES FOR FINANCIAL EDUCATION

OECD/INFE POLICY HANDBOOK

FOREWORD

The work on national strategies for financial education was launched in 2009 as an integral part of the OECD project on financial education, as a complement to financial consumer protection and inclusion measures with a view to strengthening financial stability and development. It was particularly meant as a new policy tool to counter some of the lasting effects of the 2008 global financial crisis, while offering solutions to governments designing and implementing financial education policies. The impressive increase in the number of governments which have adopted such nationally co-ordinated approaches to financial education testifies to its significance: today almost 60 economies are implementing national strategies for financial education worldwide, compared to a handful in 2009.

The relevance of national strategies for financial education is further confirmed by the attention of global fora. At their Summit in Los Cabos in 2012, G20 Leaders endorsed the High-Level Principles on National Strategies for Financial Education developed by the OECD International Network on Financial Education (OECD/INFE), thereby also recognising the importance of these co-ordinated policy approaches to financial education. They reiterated their support for these policy endeavours at their meeting in St. Petersburg in 2013 and called the OECD/INFE to develop a Policy Handbook on the Implementation of National Strategies for Financial Education.

This Policy Handbook responds to that call and also represents the culmination of the work of the OECD on national strategies. The OECD is therefore pleased to provide this important policy tool, which also highlights the main trends in national strategies worldwide. The Policy Handbook is expected to particularly support governments and public authorities in developed and emerging economies in addressing each challenge in the implementation of national strategies. To do so, the Policy Handbook offers an analysis of relevant case studies from economies at different levels of development, shares key lessons learnt from countries with experience in implementing national strategies, highlights effective practices and provides a checklist for action.

The Policy Handbook complements other analytical tools and policy instruments developed by the OECD/INFE on financial education including the collection of qualitative and quantitative evidence, work on various target audiences' needs, as well as the role of key stakeholders in financial education with the Guidelines for the Involvement of Private and Not-for-profit Stakeholders in Financial Education also submitted to G20 last year.

The Policy Handbook was developed through the OECD/INFE and its Expert Subgroup on National Strategies for Financial Education starting at the OECD/INFE technical meeting in Istanbul, Turkey, in May 2014. It was elaborated through the OECD/INFE, now spanning over 110 economies, and thanks to the direct contribution of over 65 OECD/INFE member economies. It went through an iterative and thorough development process leading to its approval by the OECD/INFE Technical Committee, the OECD Insurance and Private Pensions Committee and the OECD Financial Markets Committee in July/August 2015. It has been transmitted to and welcomed by the Global Partnership on Financial Inclusion (GPFI) at their September 2015 meetings in Antalya, Turkey. It is now shared with G20 Leaders at their 15 November Summit in Antalya. It will then be made publically available for governments and other stakeholders.

We believe this Policy Handbook will contribute to increase the effectiveness of national strategies for financial education worldwide, and ultimately help individuals and households navigating the challenges and opportunities of today's financial markets thereby improving their financial wellbeing.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Within a fast evolving financial landscape where access to financial services is made easier while more risks are being transferred to citizens, financial literacy has become a key life skill for individuals as well as micro and small businesses. Financial education can help enhance financial literacy by increasing financial knowledge, skills and attitudes. In turn, this can contribute to individuals' (including vulnerable and low income) participation in financial, economic and social life as well as to their financial well-being. As a complement to financial inclusion and financial consumer protection, financial education is also important to restore confidence and trust in financial markets, and can support financial stability. G20 Leaders have recognised the important role of financial education policies notably by endorsing in 2012 the OECD International Network for Financial Education (OECD/INFE) High-level Principles on National Strategies for Financial Education. These Principles provide international guidance to policy makers with a view to developing evidence-based, co-ordinated and tailored approaches to financial education, both in emerging markets and more advanced economies.

Today, **59 economies** worldwide are implementing national strategies using guidance from the Principles, a number that has more than doubled in less than five years.

The experiences of these countries have highlighted a number of challenges with respect to the implementation of these Principles and related strategies, which this Policy Handbook notably addresses. The Policy Handbook responds to a call by G20 Leaders to the OECD/INFE in September 2013 and complements the 2012 Principles by supporting their implementation in interested countries. It is also designed to follow up on a series of products developed by the OECD/INFE for delivery to the G20, in particular the G20/OECD publication on the advances in national strategies in G20 economies released in 2013 and the OECD/INFE Guidelines on Private and Not-for-profit Stakeholders in Financial Education transmitted to the G20 in 2014.

This Policy Handbook benefited from the experience of the more than 110 member economies of the OECD/INFE, and with direct contributions from over 65 of them, through an in-depth and iterative consultation process. Based on an overview of worldwide trends in the design and implementation of national strategies for financial education, it identifies and addresses the main related challenges, outlines relevant solutions - developed in countries with different economic and financial landscapes- and presents key lessons learnt. The Policy Handbook includes a Checklist to guide policymakers and interested stakeholders in this process (see Annex I).

The Policy Handbook focuses on responding to the following main practical and policy issues:

- Developing a diagnosis to inform the national strategy;
- Establishing institutional and governing arrangements;
- Setting and achieving objectives, evaluating and funding the national strategy; and
- Ensuring effective and innovative provision of financial education.

The following sections provide a summary of the main trends for each challenge identified as well as the main elements of the key lessons learnt through country experiences.

DEVELOPING A DIAGNOSIS TO INFORM THE NATIONAL STRATEGY

Measurement and mapping exercises are both considered essential tools to prepare a national strategy based on people's needs and countries' circumstances including existing resources. With regards to assessing the population's needs:

- On the positive side, more economies (48) are conducting baseline surveys to inform evidence-based policies and programmes, mostly using international tools such as the OECD/INFE Toolkit to measure financial literacy and inclusion (31); however the availability of cross country evidence is still relatively limited and could be enhanced by the participation of more countries in international data collection such as the OECD/INFE surveys and PISA Financial Literacy exercise.

- Existing surveys increasingly include behavioural and attitudinal elements and seek to capture indicators of individual financial well-being; a much smaller set of countries also implement longitudinal surveys to get a better grasp of consumers' behaviours and attitude over the long term.

- In addition to large-scale surveys, more regular and simpler measurements, such as those designed to capture financial behaviours indicators are being undertaken, on an annual or biennial basis, to closely monitor the impact of national strategies.

Mapping exercises, i.e. the inventory and review – and ideally evaluation – of existing financial education initiatives, have been conducted in 40 economies. These exercises are increasingly used to co-opt not-for-profit and private sector stakeholders into the national strategy, gather additional evidence, and identify valuable resources and programmes. This takes place through consultation with stakeholders (32 economies), calls for evidence, and studies conducted in cooperation with universities or research centres.

ESTABLISHING INSTITUTIONAL AND GOVERNING ARRANGEMENTS

Explicit mandates with earmarked resources to conduct financial education policies are still relatively uncommon. The number of public institutions with clear and formal responsibilities on financial education is however increasing: eight institutions have mandates explicitly enshrined in their founding acts (or revisions thereof), six are given one through primary or secondary legislation, and 13 have implied a mandate from other responsibilities such as financial inclusion or financial consumer protection. These institutions include ministries of finance, central banks, financial markets authorities, and ministries of education. Clear mandates are recognised as important to:

- Design and implement national strategies that are more (financially) sustainable, and better suited to achieving behavioural changes. They can also ensure greater accountability and visibility to the public, as well as whole-of-government recognition;

- Engage with a wider range of trustworthy public stakeholders in the implementation phase.

Governance structures vary according to national circumstances, from multi-stakeholder approaches to the creation of a new body to implement the strategy. They generally aim at being flexible enough to be effective both in the design and the implementation phase and to allow the leading authority(-ies)/committee to involve relevant stakeholders from the public, private and not-for-profit sectors.

- Emerging governance structures seek to facilitate the implementation phase by separating directive/executive and supervisory roles, to allow a deeper involvement of private and not-for-profit institutions;

- They include reporting mechanisms and feedback loops to allow stakeholders to inform the leading authority(-ies)/committee of developments on the ground;

- These structures often involve the support of, and regular liaison with, the highest level of government.

Increasingly, national strategies are implemented with the **contribution of the private sector**. Private stakeholders can bring a number of benefits (e.g. financial resources and expertise), and are well positioned to reach a wide audience, exploit teachable moments and combine financial education with financial inclusion efforts. However, the involvement of private stakeholders in financial education may bring about potential shortcomings, including un-coordinated initiatives and conflicts of interest. For this reason, a number of economies seek their involvement under appropriate guidelines, such as the OECD/INFE Guidelines for the Involvement of Private and Not-for-profit Stakeholders in Financial Education.

SETTING, ACHIEVING OBJECTIVES, EVALUATING AND FUNDING THE NATIONAL STRATEGY

The **roadmaps and action plans** of national strategies for financial education (i.e. their guiding documents that set objectives, means, and define partners) are ideally evidence-based and developed taking into account a variety of sources, from financial literacy measurement results to academic research and input from stakeholders:

- Roadmaps and action plans are in particular increasingly based on clear and explicit references to quantitative evidence, emerging from financial literacy measurements or anchored in financial markets and household surveys data; these benchmarks make it easier to show progress and contribute to reinforce these policies' sustainability;

- These guiding documents also provide directions and guidance to the organisations involved in programme delivery, which contributes to building consensus around the strategies' objectives.

The need for evidence is also reflected in the **number of evaluations** of national strategies for financial education. The number of national strategies that have been evaluated and revised is growing (11), but still limited (due in part to the average timeframes for evaluation, which typically take place over five years):

- National strategies are now increasingly assessed (and monitored) using a variety of quantitative and qualitative data: from repeated measurement surveys and the use of financial behaviour trackers, to consultation with private and not-for-profit stakeholders and the public;

- The development of core competencies on financial education can also support evaluation, as they identify targets against which progress can be measured.

Funding of national strategies occurs in most cases through a combination of public and private resources. The cost of national strategies for financial education is relatively small compared to other public policies or to the spending on financial marketing from financial institutions. Notwithstanding the amounts involved:

- Long-term planning and multi-year budget horizons are needed to effectively address the financial education needs of the population;

- The contribution of the private sector is often encouraged, through funding mechanisms that minimise possible conflicts of interest or in the framework of appropriate guidelines.

ENSURING EFFECTIVE AND INNOVATIVE PROVISION OF FINANCIAL EDUCATION

One of the main challenges facing public authorities implementing national strategies is to find ways of changing financial attitudes and behaviours of the population. In order to do this, national strategies employ a variety of traditional and more innovative approaches to delivery combining three main approaches:

- **Facilitating access to information and advice through multi-channel delivery** (such as websites that seek to become the reference at the national level through consumer-friendly branding, interactive web-based tools, or awareness and communication campaigns);

- **Accounting for timing and location** and **harnessing existing learning environments** and networks:

  - through life-cycle approaches (addressing consumers in key stages of their professional or personal lives: having a child, buying a first home, retiring, etc.),
  - by choosing the right trusted intermediaries such as community leaders and developing training the trainers programmes,
  - through appropriate learning environments such as the workplace or schools (at least 27 economies have introduced financial education in schools, in some cases as a mandatory cross-curricular subject);

- **Supporting individual engagement, motivation and decision-making**, by using the findings of behavioural economics and social marketing techniques, harnessing peer pressure and the community effect, or the new possibilities offered by games and social technologies.

More national strategies now include **programme evaluation** as an essential element of their implementation, combining quantitative and qualitative data and often using international methodologies (such as the tools developed by the OECD/INFE[1]). However, more needs to be done to ensure that this is explicitly included within national strategies' roadmaps and that the evaluation results are reported at the domestic and international levels (including through the database of evaluated financial education programmes offered by the OECD/INFE). This would ensure the identification of the most effective delivery channels based on the needs of the target audiences, it would enhance national and international knowledge of effective approaches, and promote the accountability and sustainability of financial education policies and initiatives.

1 The INFE High-level Principles on Evaluation of Financial Education Programmes (OECD/INFE, 2012a) and two non-technical OECD/INFE Guides to Evaluation (OECD/INFE 2010a; OECD/INFE 2010b).

CHAPTER 1. OVERVIEW OF NATIONAL STRATEGIES FOR FINANCIAL EDUCATION

STATUS OF NATIONAL STRATEGIES

A growing number of countries are developing national strategies as illustrated in Table 1. In 2015, based on the information received through the OECD/INFE surveys and Secretariat desk research, 59 countries report developing a national strategy, implementing one or revising it and developing a new one, with an additional five planning one. This represents a steady increase when compared with the situation in 2011, when 26 countries reported having developed or implemented a national strategy (more than 200% in three years).

A significant group of countries are now in the process of revising their initial strategy and/or implementing a second national strategy based on their experience and the evaluation of the outcome of the first national strategy: these are Australia (2013/14), the Czech Republic (expected in 2016), Malaysia (2015) Japan (2013), Netherlands (2014), New Zealand (2013/15), Singapore (ongoing), South Africa (2013), Slovak Republic (2014), Spain (2012), United Kingdom (2013) and the United States (2011)[2].

Their experience and the challenges they overcame when going through this evaluation and revision process are particularly valuable for other countries and in formulating general key lessons learnt.

Table 1.1 Status of national strategies (NS) in 2015

Status of the national strategy	Number	Countries and territories
A NS IS BEING REVISED OR A SECOND NS IS BEING IMPLEMENTED	11	Australia; Czech Republic; Japan; Malaysia; Netherlands; New Zealand; Singapore; Slovak Republic; Spain; United Kingdom; United States
A (FIRST) NS IS BEING IMPLEMENTED	23	Armenia; Belgium; Brazil; Canada; Croatia; Denmark; Estonia; Ghana; Hong Kong, China; India; Indonesia; Ireland; Israel; Korea; Latvia; Morocco; Nigeria; Portugal; Russian Federation[3]; Slovenia; South Africa; Sweden; Turkey
A NS IS BEING ACTIVELY DESIGNED	25	Argentina; Chile; China (People's Republic of); Colombia; Costa Rica; El Salvador; France; Guatemala; Kenya; Kyrgyzstan; Lebanon; Malawi; Mexico; Pakistan; Paraguay; Peru; Poland; Saudi Arabia; Serbia; Tanzania; Thailand; Uganda; Uruguay; Zambia
A NS IS BEING PLANNED	5	Austria; Former Yugoslav Republic of Macedonia (FYROM); Philippines; Romania; Ukraine; Zimbabwe

MAIN HIGH-LEVEL POLICY PRIORITIES

Not surprisingly, most of the national strategies are aimed at improving financial literacy with a view to promoting healthier financial behaviours and improving financial well-being.

A significant number of both emerging (most) and developed countries (around half) also seek to improve financial inclusion through their national strategy for financial education (see Box 1 "Financial education for an effective financial inclusion"). A wide group of countries is also linking the development of their national strategies to other financial regulation measures and in particular the improvement of their financial consumer protection framework. In some cases, financial education policies are used as tool to support the implementation of pension systems reform. Other more specific objectives of these national strategies seem to be almost equally strengthening long-term saving and investment and fighting households and individuals' over-indebtedness.

2 In brackets, the year of the revision of the initial national strategy.

3 The Russian Federation has developed a comprehensive nationwide programme on financial literacy with strategic key performance indicators and began its implementation in 2011; it is now in the process of formalising the (new) national strategy's structure and roadmap.

Interestingly, these objectives are mostly based either on the results of surveys conducted to identify the population needs and/or on government priorities.

Some countries, notably those where public authorities have collected data over longer periods of time, further refine their national strategy's objectives. In Canada for example, the national strategy aims to act specifically on three dimensions of financial literacy related to money management, planning and protection (i.e. manage money and debt wisely, plan and save for the future; and prevent and protect against fraud and financial abuse).

Based on evidence, financial education policies can also be part of other government programmes or identified as specific, urgent policy priorities. In Colombia and Mexico, financial education and inclusion are part of the President's National Development Plan, as a support to economic performance and competitiveness (National Planning Department of Colombia, 2011; Federal Government of Mexico, 2013). In India and Indonesia, financial education is an essential component of the national inclusion strategies, which are among the top policy priorities of the central administrations (Ministry of Finance of India, 2014). In South Africa, financial education is part of the broader set of policy interventions aimed at Black Economic Empowerment. Finally, examples show how long-term macroeconomic trends can call for government action through national strategies for financial education, as in Turkey, where evidence from macroeconomic indicators brought the government to make financial education an essential tool of policies to increase long-term savings.

Box 1.1 Financial education for effective financial inclusion

Financial exclusion still affects 2 billion adults worldwide (Demirguc-Kunt et al., 2015), roughly half of the global working-age population, concentrated in particular in emerging markets. There are several supply-side factors that contribute to financial exclusion: regulatory constraints, availability of competing financial services with no, or limited, financial consumer protection requirements, prohibitive market factors, as well as barriers stemming from geography and infrastructure/connectivity. In addition to these elements, demand-side factors can also contribute to financial exclusion, and in particular financial vulnerability caused by personal circumstances, low levels of financial literacy, reduced social and technological inclusion, and cultural and psychological barriers (Atkinson, A. and F. Messy, 2013).

Financial inclusion policies that focus only on supply-side factors cannot guarantee an effective use of financial services. In this context, financial education policies are increasingly used as an important tool to help overcoming several of the above-mentioned barriers, and address the financial needs of both individuals and families. Financial education, by acting on low financial literacy as well as on psychological barriers and lack of awareness, can contribute to reduce the demand-side barriers to financial inclusion. Improved financial literacy can increase both awareness and understanding of financial products and services, and as such promote demand of financial products and their effective use.

Against this background, policy makers worldwide have recognised the importance of increasing efforts to develop well designed financial education strategies and adequate financial consumer protection measures alongside supply-side initiatives to stimulate financial inclusion. These financial education and consumer protection endeavours must be targeted on the relevant groups, and ideally provided alongside access to appropriate products.

Governments that place financial inclusion among their policy priorities have as a consequence developed national strategies for financial inclusion in which financial education policies form one of the main pillars, or national strategies for financial education developed and implemented in parallel to the national strategies for financial inclusion.

India

The coordinated efforts of Reserve Bank of India and the Government of India over the last five years have culminated in providing access to banking services to a majority of the Indian population. The formulation and implementation of the National Strategy for financial education therefore becomes a top priority for the country to educate the new entrants into the financial system. The Indian national strategy was initially prepared by a committee representing all of the country's financial regulators (Financial Stability and Development Council of India, 2012), and was also peer reviewed by the OECD/INFE. The national strategy for financial education is deemed essential in ensuring that the national financial inclusion policies implemented by the government are successful. Increased levels of financial literacy will be essential to support the national financial inclusion efforts, in particular once the basic financial products such as micro-insurance and pension products are offered to basic bank account holders throughout the country.

Indonesia

The National strategy for financial Literacy was launched by the President of Indonesia in November 2013 and is coordinated by the Financial Services Authority (*Otoritas Jasa Keuangan*, OJK), which is mandated by law to conduct financial education as part of its financial consumer protection tasks. Financial education policies had been until then part of the national strategy for financial inclusion. The surveys conducted by Bank Indonesia in 2012, using the OECD/INFE Survey, indicate a strong correlation between levels of financial education and access to finance in the archipelago, reinforcing the need to act on both policy areas in order to ensure inclusive growth.

Mexico

In Mexico the national strategy for financial education (recently included in law, see the Case Study "Mexico: A National Development Plan enshrining in law financial education mandates") is under development as a complement to the national policy on financial inclusion. The starting point for the development of the strategy was the realisation that despite the great advances in financial access, the use of formal financial services was still hindered by insufficient levels of financial education and awareness among important sectors of the population. This synergy is reflected also in the institutional structure to implement the national strategy for financial education and the one on inclusion. The high-level National Council on Financial Inclusion and the Committee on Financial Education must coordinate on financial education issues.

Peru

The National Strategy for Financial Inclusion (ENIF, for the acronym in Spanish) was designed by the Multisectoral Committee for Financial Inclusion between 2012 and 2015; and launched by the Supreme Decree N° 191-2015-EF on July 2015. The ENIF has seven action lines, one of which is financial education. The financial education action line is jointly led by the Superintendence of Banking, Insurance and Private Pension Funds (SBS) and the Ministry of Education (MINEDU); and will have as key outcome the National Plan for Financial Education that will aim to articulate the main financial education initiatives in Peru.The starting point for the creation of the strategy on financial education has been the successful cooperation between the SBS and other public and private institutions; from which highlights the collaboration with the MINEDU for the introduction of financial education in the formal school curriculum, including the Teacher Training Programme *Finanzas en el Cole* (Finance at School) and the development of dedicated pedagogic material (see case study in Chapter IV "The inclusion of financial education in the national curriculum in Peru").

The collection of evidence and the increasing amount of resources devoted to research and policy analysis in the area of financial literacy, as well as the recent attention of international organisations to individual well-being as a desired outcome of public policy interventions, has led to an evolution in the analysis of the objective of national strategies for financial education.

The analysis of behaviours and attitudes in the population (see the Box 4 "The development of financial literacy and financial behaviour indicators to monitor the overall national strategy") is being increasingly taken into account in setting objectives. There is also growing interest in the promotion of financial well-being for individuals and households as the final outcome of financial education policies (see section "Financial well-being as an outcome of financial education policies").

MAIN TARGET AUDIENCES

In most countries the national strategy is expected to benefit the overall population. However the OECD/INFE survey also confirms that particular subgroups of the population are specifically targeted. The economies covered in the OECD/INFE survey show that these target groups include in decreasing order of importance (see also the comparative tables in Annex): young people (more than half of responding countries), women, low income groups, elderly people, micro-, small- and medium-sized enterprises, migrants and, in a few countries, people living in rural areas.

In most cases, targeting these groups is also part of broader social and economic policy agendas implemented by the government and national administrations, of which financial education is a component. Identifying priority target audiences is also useful to maximise impact with available resources. Moreover, it permits building up an expertise and knowledge of the specific target group, and as such can make trainers and programme developers react more easily and rapidly to changes in the target group.

These groups are often identified through financial literacy surveys as illustrated in Chapter I. The identification of these target groups is generally based first on socio-demographic characteristics and quite often leads to the adoption of a life-stage approach (in a third of the surveyed countries, see also Chapter IV).

An emerging trend in surveyed countries and territories (such as Hong Kong, China; the Netherlands; South Africa; Turkey and the United Kingdom) aims at segmenting the population according to their financial behaviour and attitude as well as related vulnerabilities (which sometimes, but not always, coincide with their socio-demographic characteristics, see also the case study “Hong Kong, China: the definition of target audiences based on a model used in public health interventions”). This segmentation is made possible by the refined analysis of financial literacy surveys as well as survey of groups particularly affected by recent external shocks (e.g. the recent financial crisis, pension systems reform, natural/man-made disasters). This approach allows a more refined communication and educative approach which can address the real needs for financial literacy of consumers (independently from their socio-economic status). It also makes it possible to define outreach measures and programmes according to policy priorities (such as access to credit and debt management, or savings for retirement).

This focus on behaviour and vulnerabilities also takes into account that not all knowledge gaps necessarily translate into real life concerns that necessitate a financial education intervention. For example, those exhibiting low knowledge on issues such as mortgages might simply be retirees that have owned a house with debt paid off in full for decades and as such do not display (nor need) knowledge on mortgages. It is therefore important to associate the analysis of knowledge gaps to the behaviours and real life context of the target population in order to develop relevant messages and learning content.

Finally, when identifying target audiences, countries also define intermediary or secondary audiences that can work with them, be it specific segments of public sector employees, stakeholders such as journalists, teachers and employers (see also Chapter IV), or those implementing specific programmes financial education programmes.

TIMEFRAMES

On average, national strategies are set for five years. In the countries surveyed, as shown in Table 1.2, national strategies are generally planned for a period of three to seven years (with some exceptions such as Croatia where it is planned over ten years). Some others have their national strategies ongoing with no planned formal revision, and adjustments are made continuously through the activity of the implementing institutions.

Table 1.2. Timeframes of national strategies

Continuous	3-4 years	5 years	More than 5 years
Japan, New Zealand	Argentina, Australia, Peru (3 to 5), Turkey (4)	Armenia Guatemala India Indonesia Israel Korea Malawi Mexico Netherlands Portugal Russia South Africa (with annual reviews) Spain United Kingdom	Croatia (10) Latvia (7) Malaysia (10)

FINANCIAL WELL-BEING AS AN OUTCOME OF FINANCIAL EDUCATION POLICIES

The definition of financial education developed by the OECD in 2005 already identifies financial well-being as one of the main outcomes of the financial education process:

> *"the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being." (OECD, 2005).*

At the policy level, the need to achieve financial well-being and allow effective participation in economic life is reflected in the recognition of the importance of a trilogy approach for the financial empowerment of consumers based on financial inclusion, financial consumer protection and financial education, as recognised by G20 Leaders in a set of instruments approved and endorsed successively in 2010, 2011 and 2012 (G20, 2010; G20/OECD, 2011; OECD/INFE, 2012b). Recent changes in the way policy makers look at economic progress, as well as advances in the understanding of financial literacy, have highlighted the importance of financial well-being. There is growing consensus that societal progress is about improvements in the well-being of people and households. Assessing such progress requires looking not only at the functioning of the economic system but also at the diverse living conditions and expectations of people (OECD, 2011).

With respect to *financial* well-being, this new approach had gained visibility through the increasing amount and quality of evidence collected at the international and national levels (Atkinson and Messy, 2012; OECD, 2014b), which has permitted to look at financial empowerment from the perspective of individuals.

A number of countries and in particular those where national strategies for financial education have been implemented for longer, have begun including individual financial well-being among the objectives sought through the implementation of their financial education policies. The revisions of their national strategies have been instrumental in collecting the view of stakeholders on the objectives of the strategy, in combination with the development of specific research on these issues.

Australia is a testament to the importance given to personal circumstances as determinants of individuals' financial decision-making, and a first step to the understanding of individuals' financial well-being from a personal perspective. The examples of the United Kingdom and the United States also highlight the important role of personal circumstances, and combine this with the identification of security and freedom of choice as the basis of financial well-being.

Australia: The key role of personal circumstances

The Australian Securities and Investments Commission (ASIC) released an updated version of the Australian national strategy in 2014. The process of reviewing the previous strategy, conducted in consultation with a range of government, financial services, education and community sector stakeholders (ASIC, 2013) has enabled updating the definition of financial literacy to highlight the role played by personal circumstances in shaping attitudes and behaviours, with the recognition that building financial literacy and well-being is a dynamic and ongoing process. The definition of financial literacy developed by the OECD (OECD, 2005) and used by ASIC has thus been amended to include this new element. Financial literacy has become a precondition to make "sound financial decisions, based on personal circumstances, to improve financial well-being" (ASIC, 2014).

The Australian national strategy now gives prominence to an analysis of the shifting and sometimes conflicting factors that impact on financial decision-making. This includes the effects of external environmental influences, personal contextual influences, and individual psychological makeup (such as cognitive biases). Among the environmental influences that affect decision-making are social and cultural factors, the economic context, the regulatory environment, the product sales context, and the level of access to products and services. Within this external framework sits the personal context, including attitudes and emotions, motivation and timing, knowledge and skills, as well as the life experiences of the individual.

This new approach has policy implications: it contributed to the prominence gained by tailored, life-stage approaches to the provision of financial education, in order to provide appropriate information and support in the right way and at the right time, based on the personal circumstances of individuals and target groups. The strategy recognises that over time, these teachable moments may open the door for other learning and skills development, building on individual strengths and decision-making experiences.

United Kingdom: A financial well-being staircase that takes into account resilience and goals

The revision of the UK national strategy for financial capability has also focused on the definition of financial literacy (or capability) adopted by the strategy (Money Advice Service, 2015). The consultation document used to gather stakeholders' views begins by recognising that financial capability includes external factors, such as accessibility of financial services and the ease with which consumers can interact with them, as well as internal factors such as ability, composed of skills and knowledge, and mindset, composed of attitudes and motivations.

It is on this premise that the Money Advice Service (MAS) builds its definition of financial well-being, as a consequence of financial behaviours that are an expression of individuals' circumstances and financial literacy levels.

Based on the evidence collected through the Financial Capability Tracker surveys of financial literacy, MAS defines a financial well-being staircase composed of five broad states of financial well-being, which are influenced by an individual's financial literacy levels. The staircase goes from its higher step, "Secure", to its lowest one, "unable to keep up":

- **Secure**: a good financial plan and providing adequately for their future lifestyle;
- **Resilient**: have built enough financial buffer to withstand life's shocks;
- **Making ends meet**: coping with day-to-day finances, but not very resilient;
- **Constantly struggling**: struggling constantly to stay above water, very susceptible to financial shocks; and
- **Unable to keep up**: currently experiencing unhealthy debt problems and failing to make ends meet.

Individuals in the higher step, those who are secure, are defined as being financially resilient both in the short and the long term, they have savings and a plan for the future that will support their chosen and desired later life. It is worth noting that this definition encompasses not only mere capacity to absorb shocks but also the ability to fulfil life aspirations and personal goals.

Finally, MAS points out that research undertaken in the UK shows that there is a mild correlation between individuals' financial means and their positioning among the 5 levels of financial well-being. While acknowledging that some categories are more at risk of falling at the bottom of the staircase, such as those with low skills and qualifications or renters, evidence indicates that there are people with limited means but who have built up both financial resilience and a plan for the future, based on their individual circumstances and life goals. At the same time, people with high incomes can find themselves at the bottom of the financial well-being staircase because they are financially over-committed and are faced with unmanageable debt. The concept of the well-being staircase has been a useful communications tool that has enabled new audiences to understand and engage with the financial capability strategy. However, it deliberately simplifies and reduces down complex real-life lived experiences. Therefore the focus of the developing UK financial capability strategy's evaluation will be monitoring financial capability rather than elements of well-being alone.

This research will provide the framework for the implementation of the revised national strategy for financial capability, beginning in the second half of 2015.

United States: Defining the end goal of financial education policies and understanding its determinants

The research undertaken in the United States by the Consumer Financial Protection Bureau (CFPB) was motivated by the need to determine how to define and measure the success of financial education policies, in particular in order to inform public policy (CFPB, 2014).

To this end, the CFPB, in cooperation with research centres and universities across the country, has conducted open-ended interviews with consumers to understand the consumer perspective on financial well-being. The objective of the interviews and the related research was to understand "how people could make the best of their situation given their current financial circumstances", i.e. achieve financial well-being.

The evidence gathered through the interviews with consumers led in a definition of financial well-being as a state of being wherein one:

- Has control over day-to-day, month-to-month finances;
- Has the capacity to absorb financial shocks;
- Is on track to meet personal financial goals;
- Has the freedom to make the choices that allow enjoying life.

Similarly to what has been identified by MAS in the United Kingdom, the factors influencing individual financial well-being have been found to include both elements relating to the capacity to withstand shocks as well as the ability to meet personal goals by making choices relevant to one's personal life. This also shows how traditional measures such as income levels or net worth, while important, are not enough to capture financial well-being.

The CFPB then conducted research on the factors influencing financial well-being, in order to inform national policy. CFPB has focused on behaviours, knowledge, personal traits, the social and economic environment as well as life stages.

Consistent with the evidence collected at the international level, the behaviours identified as supporting financial well-being are those relating to effective and routine money management (being frugal, maintaining an intentional lifestyle, using credit prudently if at all, avoiding and managing debt), to researching decisions and seeking knowledge, to goal-setting and planning, and to following through to decisions and intentions.

The relationship between financial knowledge and behavioural change is found to be mediated by individual characteristics such as attitudes and non-cognitive skills, as well as by the context in which the decision is taken. The results of consumer interviews suggested the importance of knowing "how to do things", rather than the "knowledge of the thing itself". Given this insight, the CPFB has identified "financial ability" as the *action component* or skill that influences the use of financial knowledge. This skill is conceptualised as supporting the effective behaviours identified above, and encompasses knowing when to seek and where to find reliable information to support a financial decision, knowing how to process that information, and knowing how to execute financial decisions, including monitoring their effects and staying on track. Interviews with consumers and practitioners have highlighted how "financial ability" is heavily influenced by the personal circumstances of each individual, and in particular upbringing, the social context and personal network that promote familiarity with and confidence in their own skills and behaviours.

Personal traits also emerge as strong influencers of financial behaviour and, as such, of financial well-being. The key traits playing a role in achieving financial well-being are categorised as an individual's internal frame of reference, i.e. how one compares oneself to others and the self-esteem, perseverance, executive functioning (a multifaceted suite of mental operations involved in self-control, planning and focus) and financial self-efficacy, i.e. people's confidence in their ability to influence their life.

Finally, the interviews with consumers highlighted several differences between, in particular, working-age and older consumer perspectives. However, the analysis of the interviews with both target groups confirmed that behaviours, habits and attitudes developed in youth seem to strongly influence adult financial well-being. This is consistent with research conducted internationally, and is going to support further the focus of the US national strategy on young people and on the formal education sector (see also Case Study "United States: a roadmap for a specific target group, young people").

CHAPTER 2. DEVELOPING A DIAGNOSIS TO INFORM THE NATIONAL STRATEGY

As indicated in the OECD/INFE High-level Principles on National Strategies for Financial Education, developing a diagnosis to inform the implementation of a national strategy is of paramount importance to ensure the national strategy is evidence-based and tailored to a country's needs and circumstances. Countries report in particular that mapping initiatives and measuring financial literacy levels are the two key aspects of this phase, and also highlight a number of challenges relating to these processes.

Mapping existing financial education initiatives promoted by public, private and civil society stakeholders can be challenging, as the number of stakeholders active in financial education is increasing, and their programmes need to be evaluated in order to understand their relevance and possible contribution to the national strategy. Measuring financial literacy levels involves choosing the appropriate methodology, undertaking resource-intensive national surveys, and decide whether and how to complement these data with additional sources of evidence.

This chapter discusses both processes, points to relevant case studies in countries which have developed fully-fledged diagnoses and highlights a number of lessons covering methodological aspects as well as policy design.

MAPPING EXISTING INITIATIVES AND STAKEHOLDERS

Mapping existing initiatives and stakeholders is a prerequisite to the establishment of national strategies and is ideally conducted during the design (or update) phase. This stocktake of existing resources focuses on the domestic stakeholders providing financial education and on their programmes. It can be complemented by a review of other countries' examples and of relevant instruments or programmes developed or delivered at the international level.

Stakeholders active in financial education can be either public authorities already developing sectoral programmes (in securities, insurance or pensions, for example) or not-for-profit and private stakeholders that might have developed independent programmes.

The majority of respondents with a national strategy have undertaken a mapping of existing resources and initiatives on, and stakeholders already involved in, financial education. The most commonly used tools to do so are, in decreasing order of importance, 1) consultation with stakeholders and calls for evidence, 2) desk research, and 3) the organisation of conferences and workshops open to interested organisations with an interest in financial education. Additionally, a relatively smaller group of countries (a third) have sought to evaluate the efficiency of these resources and of programmes developed by various stakeholders.

Criteria to identify stakeholders include the public/regulatory nature of the institutions concerned, their proven expertise, commitment and credibility to deal with financial education issues and implement initiatives as well as the absence of conflicts of interest (when private sector is involved), or relevance of their activities to consumers (Canada).

KEY LESSONS LEARNT IN MAPPING EXISTING INITIATIVES AND STAKEHOLDERS

Mapping of existing initiatives is not simply used as a stocktake exercise to get the sense of what is already being implemented at the national level; it also fulfils other important functions:

- Mapping permits public authorities to understand the level of technical expertise present among stakeholders and to identify good practices;
- Conversely, public authorities might also use the outcomes of the mapping exercise to understand if there is a need to develop specific guidance in some areas to further support stakeholders in their efforts.
- Mapping and the evaluation of existing initiatives are also a useful basis for:
  - selecting trusted partners that can support public authorities in the design and later in the implementation of the national strategy. This can lead to the incorporation of certain programmes and actors within the national strategy;
  - identifying overlapping programmes and duplication of efforts, or potential opportunities for synergies among stakeholders; and
  - Identifying gaps in the provision of financial education.
- Finally, the programmes identified, and their evaluation, are also useful in informing the setting of priorities of the national strategy, highlighting the main problems already being addressed at the national level, and identifying gaps and opportunities.

The case study of Australia shows how a mapping exercise can fulfil several objectives that go beyond the mere collection of information of “who is doing what”. The mapping and consultation conducted by the Australian Securities and Investments Commission (ASIC) have also been instrumental in refining public policy priorities, and have helped public authorities in the revision of the financial education strategy.

CASE STUDY: AUSTRALIA

Mapping financial education stakeholders and gathering their views on the strategy’s priorities

The Australian Securities and Investments Commission (ASIC) has undertaken systematic mapping of relevant existing resources and stakeholders over the last two years, as part of its review of Australia's National Financial Literacy Strategy. That mapping included, in particular, an extensive stakeholder consultation process and a national stocktake survey. Full details of the review and consultation process are set out below.

ASIC published Australia's first National Financial Literacy Strategy in March 2011 to promote a national collaborative approach to improving Australians' financial literacy. ASIC's MoneySmart website and MoneySmart Teaching programme are flagship initiatives under that first Strategy. In 2011 ASIC also made a commitment to conduct a review of the Strategy three years after its release.

During 2013/14, ASIC therefore undertook a wide ranging review and consultation exercise to take stock of progress against the 2011 Strategy and inform development of a new Strategy for 2014-17.

The review included:

- a National Financial Literacy Forum held on 30 April 2013;
- a call for submissions to a public consultation paper;

- a national stocktake survey of financial literacy initiatives in Australia ; and
- targeted discussions with a wide range of key stakeholders conducted from October 2013 to March 2014.

More than 200 stakeholders from the business, community, education and government sectors participated in the consultation process, sharing views on the scope and content of the Strategy, definitions and terminology, related issues and policies, strategic priorities for 2014-17 and core actions, gaps and opportunities and measures of progress. In October 2013 ASIC published a summary of the feedback gathered (ASIC, 2013).

A broad range of views were expressed, and stakeholders consistently highlighted:

- the interconnectedness between financial policy and broader policy frameworks for consumer protection, regulation of financial markets, and social and financial inclusion;
- the role that opportunity and personal circumstances play in building and using financial literacy knowledge, skills and behaviour; and
- the importance of a multi-faceted approach to financial education, connecting with Australians at teachable moments throughout their lives, including at school.

Stakeholders also shared their views on priority actions and target groups to focus on over the next three years, emphasising the need to:

- foster cross-sectoral partnerships and strengthen government to government co-ordination; and
- increase opportunities for stakeholders to share what works and learn from each other to foster good practice and build research in the field.

A report on the results of the national stocktake survey was also published in October 2013. The report summarises the 112 initiatives submitted by 64 organisations in response to the survey and includes information on: type of initiative, when first implemented, delivery location, topic(s) covered, delivery method(s), target audience(s), delivery partner(s), whether independently evaluated, whether offered in language other than English, and website link (if applicable).

The results of the stocktake survey and the public consultation exercise, together with the findings from relevant research and the OECD/INFE good practice guidelines, informed the development of the National Financial Literacy Strategy for 2014-17 (Australian Government, 2014) around five strategic priorities:

1. Educate the next generation, particularly through the formal education system
2. Increase the use of free, impartial information, tools and resources
3. Provide quality targeted guidance and support
4. Strengthen co-ordination and effective partnerships
5. Improve research, measurement and evaluation

The first three strategic priorities focus on building the capacity of individuals, families and communities. The last two provide direction to organisations involved in financial literacy research, policy development and programme delivery.

From December 2013 to March 2014, ASIC consulted with key stakeholders from each sector on drafts of the new 2014-17 Strategy and Action Plan. Feedback was positive and constructive and enabled ASIC to refine the content, priorities and actions, indicators of progress, illustrative case studies as well as the format. The end result is a national framework for action for stakeholders across the government, business, community and education sectors, led and coordinated by ASIC.

The 2014-17 Strategy is intended to be flexible and capable of responding to changes in the external environment or market conditions, to enable existing players and new entrants to contribute towards the Strategy in different ways and to promote equally the efforts of small and large organisations.

Australia's National Financial Literacy Strategy 2014-17 was officially launched on 1 August 2014.

FINANCIAL LITERACY MEASUREMENT

Financial literacy surveys

A majority of respondents to the OECD/INFE survey have undertaken assessments of the levels of financial literacy across their population. Countries stress that it is beneficial to set the objectives of the national strategy based on strong evidence. This also allows public authorities to set realistic targets and to have well-defined benchmarks against which progress can be measured. Among the countries that have conducted assessments, most countries have used national financial literacy surveys relying either on available international tools (around 30 have used the OECD/INFE tool* (OECD/INFE, 2013b) and 12 have used the World Bank* tool, see also Table 2.1) and/or dedicated national methodologies –sometimes combined to adapt them to their national context. In addition, in 2015 more than 30 economies are conducting a new assessment of financial literacy and inclusion using the updated OECD/INFE Measurement Toolkit (see section “OECD/INFE Financial Literacy and Financial Inclusion Measurement Toolkit”).

A number of countries have also participated in international assessments of financial literacy amongst youth through the Financial Literacy Option included in the OECD Programme for International Students Assessment (PISA) (OECD, 2014b). Eighteen economies participated in the 2012 exercise and 15 in the 2015 exercise, representing respectively 40% and 52% of world GDP. Their participation is consistent with countries’ objectives to target youth as part of their national strategy, recognising the efficiency of providing financial education through the school curriculum (see also Section “Financial education for youth: the role of schools”).

General household surveys

A minority of countries rely on general household surveys for assessing the financial behaviour of adults (e.g. in Argentina, Italy, the Philippines and Spain). These surveys, usually conducted by central banks, also provide useful insights into saving, indebtedness and investing patterns and as such help identifying key policy areas as well as priority target groups. These instruments, despite not being focused specifically on financial literacy needs, permit segmenting households according to their financial assets, levels of indebtedness as well as their attitudes towards financial risks. This can also provide a measure of the financial literacy needs in policy areas such as savings for retirement, based for example on the ownership of savings and investment products, or insurance, based on the level of insurance coverage. Finally, these general surveys can also integrate, in parts or in total, international tools to measure financial literacy (as in Thailand, where the Bank of Thailand cooperated with the National Statistical Office to include the OECD/INFE Core Questionnaire in the national household survey).

Table 2.1 Surveys of financial literacy: tools used

	Measurement tool	Number	Economies
International surveys	OECD/INFE survey* , **	*31*	Albania (2011), Armenia (2010), Bolivia (2013), British Virgin Islands (2010), Colombia (2013), Czech Republic (2010), Ecuador (2013), Estonia (2010), Finland (2014), France (2014), Germany (2010), Hungary (2010), Iceland (2011), Indonesia (2012), Jamaica (2012), Japan (2011 – some questions), Korea (2013), Ireland (2010), Latvia (2014), Lithuania (2012), Malaysia (2010), New Zealand (2013 - knowledge questions), Norway (2010), Peru (2010, 2013), Poland (2010), Saudi Arabia (2014), Serbia (2012), South Africa (2010, 2012), Suriname (planned), Thailand (2013 – some questions), United Kingdom (2010)
	World Bank financial capability survey*	*12*	Armenia (2012), Azerbaijan (2009), Bosnia and Herzegovina (2011), Colombia (2012), Lebanon (2012), Mexico (2012-OECD/INFE financial knowledge used), Mongolia (2012), Russian Federation (2008, 2012, 2015) Tajikistan (2012), Turkey (2012), Uruguay (2012), West Bank and Gaza (2011)
	PISA Financial Literacy 2012/2015*	*24*	Australia (2012, 2015), Belgium (Flemish Community) (2012, 2015), Brazil (2015), Canada (some provinces) (2015), Chile (2015), China (Shanghai) (2012), China (2015), Colombia (2012), Croatia (2012), Czech Republic (2012), Estonia (2012), France (2012), Israel (2012), Italy (2012, 2015), Latvia (2012), Lithuania (2015), Netherlands (2015), New Zealand (2012), Peru (2015), Poland (2012, 2015), Russian Federation (2012, 2015), Slovak Republic (2012, 2015), Slovenia (2012), Spain (2012, 2015), United Kingdom (England) (2015), United States (2012, 2015)
National surveys	Financial literacy surveys	*18*	Australia (2003, 2005, 2008, 2011, 2014); Armenia (2014); Austria (2014); Brazil (2008); Canada (2009, 2014); China (2013); Czech Republic (2007); France (2014); Hong Kong, China (2012, 2014); Indonesia (2013); Israel (2012 – some OECD/INFE questions); Japan (2011); Netherlands (2013); New Zealand (2005, 2009, 2013); Portugal (2010); Singapore (2005, 2013); United Kingdom (2006, 2013); United States (2009, 2012)
	Household surveys only	*6*	Argentina, Chile, Italy (2008, 2010, 2012), Philippines (2009), Russian Federation (2013), Spain (2002, 2005, 2008)

* This group includes also countries that did not complete the OECD/INFE questionnaire on the implementation of national strategies.

** The next OECD/INFE survey is taking place in 2015 with a wider set of countries.

Overview of global results[4]

The results of these quantitative assessments generally reflect the low level of financial literacy of the overall population and/or of particular segments. The increasing use of international cross-comparable instruments to measure financial literacy permit the identification of aspects of individuals' financial literacy that must be addressed globally (see also Chapter IV for a snapshot of global trends for young people identified through the PISA Financial Literacy Option 2012).

When it comes to knowledge, if it is true that a majority of individuals display an understanding of basic financial concepts, a substantial proportion of the population in every country surveyed struggles with concepts such as compound interest or risk diversification. With respect to financial behaviour, individuals tend to be relatively good at short-term money management. They also tend to display behaviours that undermine financial resilience, and hence well-being (see also section "Financial well-being as an outcome of financial education policies"), such as over-reliance on credit, and difficulties in planning spending as well as building a financial safety net through the choice of appropriate products. This picture tends to be worse among the individuals that are recently financially included, and as such have less familiarity with financial services and concepts.

The 2015 OECD/INFE survey will provide an updated picture of these major trends which will further inform the implementation of national strategies and allow participating countries to benchmark themselves against others.

[4] See regional reports for results per region: Africa, Messy and Monticone, 2012; Latin America and the Caribbean, García, N., Grifoni A., Lopez J., Mejia, D., 2013; Asia/Pacific, OECD/INFE, 2015a forthcoming; and Europe, OECD/INFE, 2015b forthcoming.

TOOLS COMPLEMENTING FINANCIAL LITERACY SURVEYS OF THE GENERAL POPULATION

Countries are also employing other tools to collect quantitative and qualitative information on the population's needs. This can allow public authorities to analyse, qualify and understand the reasons behind the quantitative evidence provided by surveys.

These are typically gathered through the analysis of consumer complaints in a small range of countries which in most cases are closely linking the development of their National Strategy with financial consumer protection measures. In addition, opinion polls and financial markets reports are instrumental in drawing a more distinct picture of consumers' views and attitudes towards financial issues on the one hand, and in identifying the main issues affecting the financial system on the other.

In countries where several waves of financial literacy surveys have been conducted, it is also possible to engage in a deeper analysis of the data collected, co-operating with universities or research institutions, and in some cases incorporate additional levels of analysis in the survey, such as a comparison between the demonstrated financial literacy and the self-perception of individuals (New Zealand). This additional examination can also include ethnographic research, which is undertaken in countries such as the United Kingdom to better understand families' financial behaviours.

Moreover, depending on the needs arising in the implementation of the national strategy, some countries have undertaken surveys focused on specific segments of the population. For instance in the Netherlands, the Ministry of Finance has surveyed the financial literacy levels of young people and the pension awareness of the working population; in Japan the Central Council for Financial Services Information (see Table 3.2) has conducted specific surveys on youth (see case studies for both countries); in Indonesia, the Financial Services Authority has focused on the financial literacy levels of housewives and of SMEs in 2014.

The population's needs and vulnerabilities that emerge from surveys can also be assessed further and more specifically through the use of focus groups addressing specific policy areas or financial literacy gaps. In Brazil for example, the Central Bank has conducted a focus group research in order to better understand problems relating to indebtedness levels and debt delinquency (see case study). In the Netherlands consumer focus groups were convened to better understand their experiences with financial decision making.

KEY LESSONS LEARNT IN MEASURING FINANCIAL LITERACY

Methodology and tools

Changes and updates in instrument design have followed the development of national strategies and the improved understanding of the determinants of individuals' financial literacy and decision-making process. The methodology and scope of survey instruments aimed at measuring financial literacy have consequently evolved to measure financial behaviours and attitudes to a greater extent.

Regarding the assessment methodology, the following key lessons have been identified:

- Conducting cognitive pre-testing of questions is particularly relevant to assess their suitability especially for specific target groups, including the underserved or the low literate population;
- In a rapidly changing financial context, some questions might become redundant over time, and updates to the survey instruments are necessary (see also "OECD/INFE Financial Literacy and Financial Inclusion Measurement toolkit" at the end of this chapter); reviewing and updating questions is also necessary to make sure they answer what is sought and are interpreted correctly by individuals taking the questionnaires;
- The time required to gather evidence can be longer than expected (typically lasting at least 6 months). This should be carefully taken into account when planning a survey and a national strategy; particular consideration should also be given to the sample selection, to make sure it reflects domestic socio-cultural and economic differences;
- Conducting longitudinal surveys (when the same sample of the population is assessed through multiple surveys over time), if feasible, is extremely valuable. This allows for a better identification of trends in consumers' behaviours and of the effects of financial education policies and programmes. The difficulties in following individuals over time must however be properly addressed in the design phase.

Finally, it is worth underlining that fully-fledged measurements of financial literacy of the population are resource-intensive and cannot be conducted on a yearly basis. More regular and simpler measurement instruments complementing the in-depth financial literacy measurement surveys can be beneficial (see also Box 4 "The development of financial literacy and behaviour indicators to monitor the overall national strategy"). This brings additional advantages: the alignment of questions and measurement between the two survey categories can also help to test the validity of findings coming from the two types of exercise.

Some additional lessons can be drawn from the experiences of countries conducting assessments. These mainly relate to the benefits they bring in terms of facilitating the objective-setting process and identifying target audiences.

Usage in the development of national strategies

Results from the quantitative and qualitative assessments are especially valuable to develop and implement national strategies, and in particular to design evidence-based roadmaps and action plans. Indeed they can:

- Be used to highlight priority policy areas, and to design appropriate materials specific to each of them;
- Permit a detailed prioritisation to happen at an early stage by identifying key target groups or priority topics, and make agreeing on common goals easier and more convincing;
- Ensure sound policy and media support for the strategy;
- Deliver useful information on supply-side aspects and in particular the suitability of available financial products and services. The assessment of the population's financial literacy needs may, for instance, reveal that the financial products offered by national financial institutions do not meet the needs of important segments of the population.

The advantages brought by conducting a national measurement of financial literacy confirm that this should remain a priority for countries implementing national strategies for financial education. But beyond such surveys and resource permitting, a range of complementary tools can be considered to refine the delivery approach and target segmentation. These include more-in-depth secondary analysis of the data (based on the results of surveys), as well as detailed qualitative research or horizon scanning.

Case studies

The following examples provide an overview of the measurement tools used by economies that differ both in terms of financial markets development and financial literacy needs. The definition and scope of these tools also offer interesting insights into the evolution of the understanding of financial literacy and the impact this has on the survey instruments.

Australia, the Netherlands, New Zealand and the United Kingdom, are examples of how changes in the understanding of financial literacy and the examples of international instruments have resulted in a progressive evolution of the survey tools, and notably to the inclusion of questions on behaviour and attitudes as crucial elements of these assessments.

More specifically, the Australian survey, funded by a national private financial institution with inputs from ASIC and the research community, is used to inform public policy and also demonstrates positive outcomes for those participating in financial education programmes. The Netherlands presents how changes in the measurement approach have been matched by a new focus of the national strategy on responsible financial behaviour. The experience of New Zealand shows how a variety of measurement tools can be used simultaneously to keep track of evolutions in levels of financial literacy among the population, fine-tune public policy and refine programmes on an annual basis. It also shows how this allows gaining a deeper understanding of financial literacy through the cooperation with a public university.

In Japan, a household finances survey has been conducted for over 60 years; the Spanish experience showcases the use of a household survey to help public authorities breaking down the population into homogenous groups according to their learning needs. In both economies, additional dedicated measurement focuses on young people, in Spain through the participation in the PISA Financial Literacy Option, and in Japan through a specific survey undertaken of children and students in the formal education sector.

Finally, the case of Brazil and Hong Kong, China show how identified gaps emerging from financial literacy measurement surveys and economic data can lead to dedicated investigations through the use of focus groups, in this case targeting respectively over-indebtedness and money management.

NATIONAL MEASUREMENT SURVEYS

🕮 CASE STUDY: AUSTRALIA

An established national survey providing insights on financial literacy levels and on the effects of policy interventions

In Australia, the ANZ Survey of Adult Financial Literacy (the ANZ Survey) is the national benchmark financial literacy survey (ANZ, 2014; ANZ, 2015). It is one of a kind in Australia and among the most frequently repeated financial literacy surveys in the world. First conducted in 2002 and published in 2003, the ANZ Survey has been repeated in 2005, 2008, 2011 and 2014. The latest survey was published in May 2015.

The broad objectives of this time series research are:

- monitor how aspects of Australians' financial literacy have changed over time;
- inform public policy, particularly as it relates to community segments with low financial literacy and encourage continued attention on this important policy area; and
- provide a valuable information resource that will assist in the development of strategies to improve financial literacy in the community.

The ANZ Survey is conducted by telephone of a random sample of approximately 3,500 Australian adults aged 18 and over. Respondents answer a set of core questions, with further questions targeted at particular sub-groups to ensure knowledge is tested against an individual's needs and circumstances. For example, only those people who have insurance are asked what factors they considered when renewing an insurance policy. A measure of Australian's financial literacy knowledge is calculated from three main variables: numeracy, financial understanding and competence and awareness of financial responsibilities. The sample is stratified by capital city/regional area in each state and territory to match the sample distribution obtained in previous surveys.

As the financial landscape and the concept of financial literacy have continued to evolve, so has the ANZ Survey. While still monitoring Australians' financial literacy against the benchmark measures established in 2002, the research framework and questionnaire have been refined slightly each time it is conducted to add or modify some questions, for example to reflect changes in the external environment (e.g. technological and sociological changes, the impact of the financial crisis), international developments (e.g. the development of an international financial literacy questionnaire by the OECD/INFE) and the findings of the latest research in the field (e.g. pointing to the importance of attitudinal and other factors). ANZ use a 'steering group' to guide the updating of the survey questions and reporting. The steering group each time has comprised a senior representative from the Australian Securities and Investments Commission (ASIC), a senior representative from a consumer advocacy agency and at least one senior representative of ANZ.

For the first time, the 2011 ANZ Survey identified five behaviours that are indicators of financial literacy (keeping track of expenses; planning ahead; choosing financial products; staying informed; financial control, in line with the OECD/INFE Measurement Toolkit). The 2011 Survey also identified the groups within the population that perform well against these and the groups that do not; and examined relationships between financial attitudes and reported behaviours, highlighting the implications for financial education programmes. For example findings suggested that effective programme design for financial education needs to find a way to engage people and help overcome the stress that some people associate with dealing with money to build confidence and self-efficacy.

The findings from the ANZ surveys series confirm that financial literacy is complex, and that:

- individuals and groups may perform well on some components of financial literacy but not others;
- people's financial attitudes affect their level of financial literacy quite strongly; other factors that come into play are age, financial knowledge and numeracy, household income, education and occupation; and
- many people underestimate the extent of their own knowledge gaps. So their behaviour, even in simple day-to-day money management, may not be consistent with how confident they are in their abilities.

While the surveys demonstrate that low financial literacy may be found in any demographic group regardless of age, gender, occupation, income or education, the groups in Australia where lower levels of financial literacy are more likely to be encountered are:

- people who are relatively young (under 25 years);
- people with no formal post-secondary education;
- people with relatively low levels of income and assets (e.g. those whose main source of income is a Government benefit or allowance; those with annual household incomes below AUSD 25,000; those with less than $2,000 in savings and investments);
- people working in lower blue collar occupations (particularly males under 35);
- women (particularly those under 35 and over 70).

The ANZ surveys thus assist policy makers, industry, community organisations, researchers and other key stakeholders to better understand the factors associated with financial literacy in the Australian context and to develop evidence-based targeted initiatives and programmes.

In particular, the findings have contributed to financial literacy policy development at a national level in Australia, with the first ANZ Survey (2003) informing the establishment of a dedicated Consumer and Financial Literacy Taskforce in 2004 and subsequently the Financial Literacy Foundation, whose functions were transferred to ASIC from mid-2008. The insights from ANZ surveys in 2008 and 2011 have influenced subsequent national initiatives to improve Australians' financial literacy, such as the development of national financial literacy strategies in 2011 and 2014. They have also helped ASIC to better target and focus its financial literacy efforts, for example through ASIC's MoneySmart website[5] and ASIC's MoneySmart Teaching initiatives.

Lastly, the ANZ Survey findings have shaped ANZ's own financial capability programmes: MoneyMinded, MoneyBusiness and Saver Plus (RMIT University, 2015). These three programmes focus on building the money management skills and savings of people from disadvantaged groups in Australia, New Zealand and Asia Pacific.

The evidence from these long standing programmes shows a range of positive outcomes for participants from targeted financial literacy programmes, such as new financial skills and knowledge, increased confidence and longer-term behavioural change, and has helped drive innovation in programme development and design in the field.

5 https://www.moneysmart.gov.au/

🕮 CASE STUDY: THE NETHERLANDS

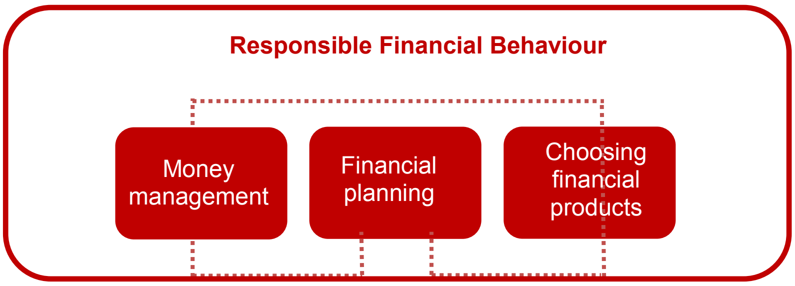
Redefining measurement tools to capture "responsible financial behaviour"

Before defining a National Strategy for Financial Education, the Netherlands performed a baseline study on financial insight in 2007. The main goals of the initial survey were to identify specific areas of concern related to financial insight of the Dutch population and establish a baseline against which progress could be measured. The baseline survey developed in the United Kingdom was used as the basis of the first survey. The survey also has strong overlap with the OECD/INFE instrument of 2010.

In the years following the publication of the National Strategy, a survey was carried out on a yearly basis. These *Public Monitors* contained subsets of the original survey. In addition, a number of questions where added to address topical developments.

In 2013, the National Strategy of the Netherlands was redesigned (Money Wise Platform, 2014). This revision also entailed a shift in its focus, from the increase of financial knowledge to the promotion of responsible financial behaviour. As an important input to the strategy, the survey was redesigned towards a financial behaviour monitor.

The Dutch Nibud (National Institute for Family Finance Information) used the five domains of financial literacy identified by the OECD in its development work on assessing financial literacy. The Public Monitor was revised on the basis of these studies. In the revised monitor, the first two domains of the OECD model (financial control and making ends meet) are combined in a single new domain (money management). The fifth domain (knowledge and understanding) is included in the revised version as a possible influencer of responsible financial behaviour. The aim of the new monitor is to obtain insight into (developments in) the financial behaviour of the Dutch. The results of the research show that responsible financial behaviour is not a single dimension but consists of behaviour within at least three domains that are largely unrelated.



These three dimensions are: money management, financial planning and choosing financial products. Money management is defined as making ends meet and monitoring income and spending; financial planning means anticipating events and risks that influence finances in both the short and long term, and choosing financial products involves carefully considering purchasing of financial products and evaluating the financial products purchased. Responsible behaviour in one of the domains does not by definition imply responsible behaviour in the other domains. The research shows only a slight correlation between the three domains. This means that the advancement of responsible financial behaviour must focus on all three of these aspects. In addition, the research shows that it is worthwhile to invest in "core values" and "involvement". Knowledge turns out not to be a significant influencer of responsible financial behaviour.

The second financial behaviour monitor – executed in 2014 – showed that short term financial behaviour slightly improved, whereas long term financial behaviour slightly worsened. Respondents indicated that they are more positive and optimistic about their household budget compared to a year earlier. People pay more attention to their day-to-day financial situation; they have fewer payment arrears and have (re)built a buffer for unexpected expenditures in the short run. At the same time, the results show that a smaller portion of the population is looking further than 10 years ahead. People are less inclined to prepare for life events. For example, the number of people that do not plan to take measures against the financial implications of unemployment has increased to 41%.

In addition to these general yearly surveys, specific recurring surveys have been undertaken to address specific target groups or particular issues. In 2009, 2011 and 2013, junior monitors were held to identify financial knowledge, skills and attitudes of children and youth. From 2010 through to 2014, *pension monitors* were executed to address pension awareness of the Dutch working population.

In 2015, the Netherlands is participating in the OECD financial literacy survey (see at the end of this chapter "OECD/INFE Financial Literacy and Financial Inclusion Measurement Toolkit").

🕮 CASE STUDY: NEW ZEALAND

Evolution from the measurement of knowledge to the analysis of behavioural elements

In the last decade, three forms of national surveys of adult New Zealanders' financial literacy have been carried out. These surveys began with a focus on financial knowledge but since 2011, in keeping with a broader understanding of the nature of financial literacy, more behavioural elements have been included.

The surveys were:

- Three financial knowledge (and behaviour) surveys in 2005, 2009 and 2013 (ANZ/Commission for Financial Literacy and Retirement Income, 2013). Each wave was a joint project involving the Commission for Financial Capability (CFFC, formerly Commission for Financial Literacy and Retirement Income) and the Ministry with responsibility for economic development, with support from a private research company and sponsorship from ANZ Bank. The methodology required 850 face-to-face interviews of 55 minutes duration each year;
- Beginning in 2011, the CFFC commissioned a shorter (ten minute) online survey which has been carried out every six months to derive a "Financial Behaviour Index" (see Box 4 "The development of financial literacy and financial behaviour indicators to monitor the overall national strategy")[6];
- The Financial Education and Research Centre at Massey University has initiated a longitudinal survey of 300 New Zealanders, to be repeated every five years for the next 20 years (Fin-Ed Centre at Massey University, 2013).

Rationale and objectives

The first financial knowledge survey set out to achieve the following objectives:

- To identify areas of low financial knowledge, by topic and population, and to assist educators to improve literacy in those areas;
- To develop benchmark measures of financial knowledge across the entire adult population and key segments so that trends could be measured and programmes targeted at areas of need;
- To assist the financial services industry to identify which aspects of financial skills, products or services were causing the greatest problems for New Zealanders and thus improve design or communication;
- To assist in the development of law reform programmes to provide effective consumer protection and address real issues facing individuals; and
- To identify participation rates, investment behaviours, habits and levels of sophistication of retail consumers in New Zealand's securities market.

The Financial Behaviour Index was developed out of a recognition that the larger survey had a four-year cycle and given rates of change, more frequent monitoring was required. The Index tracks movements in core financial behaviours and (based on precepts of behavioural economics) is designed to provide feedback and influence change at the level of individual respondents and the system as a whole. Massey University's longitudinal survey aims to understand respondents' needs for financial knowledge at different life stages.

Key results

Results across the three Financial Knowledge and Behaviour Surveys showed that overall, New Zealanders had reasonable levels of personal financial knowledge and these did not change very much. However, there were some significant shifts in specific facets of knowledge and there remained considerable gaps between knowledge and action.

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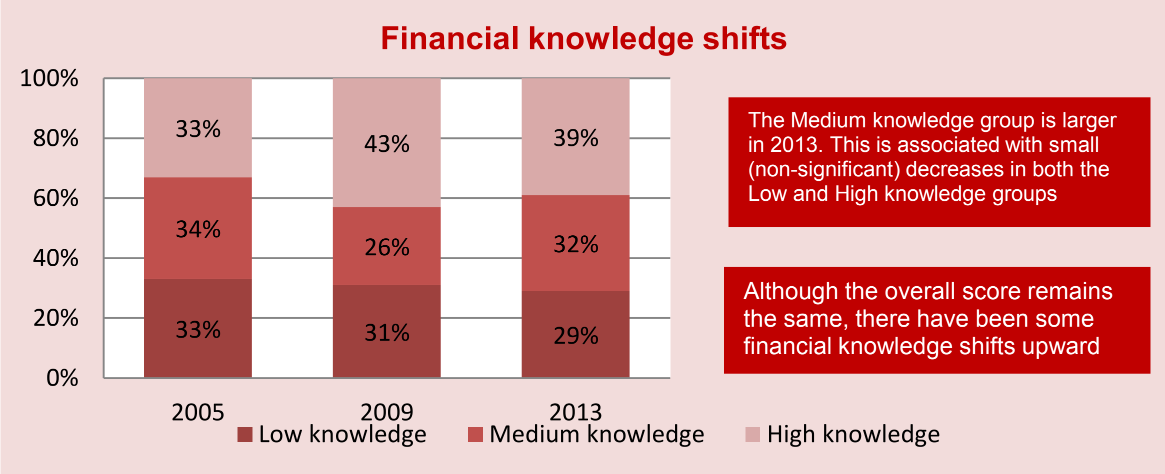
6 The results of the Financial Behaviour Index data from 2011 are available at http://www.cffc.org.nz/research-and-reports/financial-capability-research/



The first wave of the Massey survey had some interesting findings, for example that parents and families are major sources of financial knowledge for young New Zealanders. The second wave will show the extent to which this situation has remained the same or changed as participants have got five years older.

Outcomes and other learning

The following lessons have been learnt as a result of the development and use of these survey instruments by the CFFC in New Zealand:

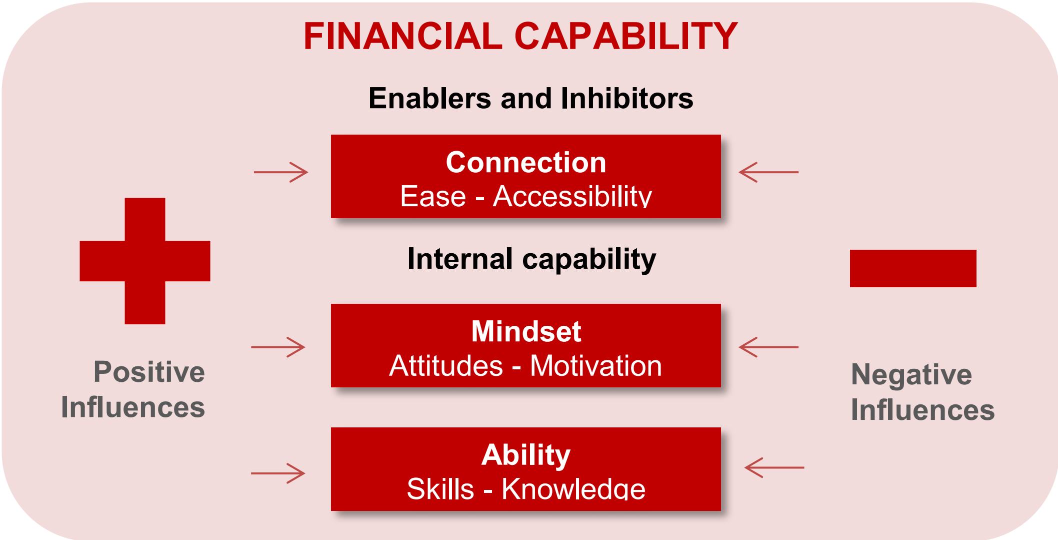
- Survey findings have informed priority-setting and change, for the CFFC in particular and the financial education field in general;
- It has been useful to complement the relatively infrequent, in-depth Financial Knowledge and Behaviour Survey with the regular, easier to implement Financial Behaviour Index. In particular, the alignment of questions and measurement has helped to test the validity of findings coming from the two methodologies; and
- National surveys are suitable for measuring systemic change but there is a limit to what they can do: the system is highly complex and causation is very difficult to isolate. As such, these must be complemented by additional tools and qualitative research to understand the evolution of financial literacy of the population.

📖 CASE STUDY: UNITED KINGDOM

Including attitudes and motivations as components of financial literacy

The Money Advice Service (MAS) is currently developing an updated national survey on financial capability. This is based on the 2005 national survey on financial capability was developed alongside the first UK National Strategy[7].

Since then, the understanding of financial capability has evolved, and attitudes and motivations are now considered as essential components of financial capability (Money Advice Service, 2014). To begin refining the national survey, MAS has developed an updated model of financial capability, incorporating new evidence and insights about what drives people's financial behaviours (see diagram below, and also the section "Financial well-being as an outcome of financial education policies"). After developing and agreeing this model, in consultation with a wide range of stakeholders, MAS conducted an evidence review to understand the indicators of each of these elements (NPC, 2014).



This has also led to a redefinition of the question set. The questions used in previous national financial capability surveys were reconsidered to see where additional questions were needed to reflect the updated understanding of financial capability. MAS has also cross-referenced the latest question set against other ongoing national surveys, in order to ensure consistency among the measurement instruments used.

MAS worked to ensure a degree of continuity and comparability between national surveys, whilst also incorporating new insights about financial capability into the measurement questions. To validate this question set, comment and input were sought from a panel of research and evaluation experts from government, industry, third sector and academics. Before beginning fieldwork, the question set was also user-tested with consumers.

7 Details on how this was developed, along with the results from that tracker can be found here: http://www.bristol.ac.uk/media-library/sites/geography/migrated/documents/pfrc0602.pdf

Longitudinal surveys

🕮 CASE STUDY: JAPAN

A variety of measurement tools adapted to different audiences

In 2011 Japan conducted the first "Financial Literacy Survey (Japan)" targeting individuals aged over 17 to grasp their knowledge and behaviours about financial issues (Central Council for Financial Services Information, 2012). This is now repeated periodically.

In addition, Japan conducts the "Survey of Household Finances" on an annual basis to understand the situation of assets, liabilities, and financial planning in Japanese households. From this survey, which has been conducted for about 60 years, Japanese authorities can assess the status of households' financial assets and liabilities, whether they are making ends meet and whether they are making financial plans.

Furthermore, Japan also focuses on the measurement of financial literacy of specific target groups. In 2006 and 2011 it conducted the "Survey on Life and Money of Children," targeting pupils and students in elementary schools, junior high schools, and high schools. This survey examines the basic knowledge about the economy and the financial system, awareness on money matters, and daily life related to money such as allowances of children.

🕮 CASE STUDY: SPAIN

A longitudinal survey of household finances

The Spanish Financial Education Plan was launched in 2008 with the aim of improving the financial literacy of the population so that citizens can deal confidently with the evolving financial context. The Plan analysed the behavioural patterns and financial preferences of Spanish families using information obtained from the Survey of Household Finances ("EFF" by its Spanish acronym), which is conducted by the Central Bank. In order to optimise resources, the population was broken down into groups with homogeneous learning needs who may access, in some cases, the same delivery channels.

The EFF collects detailed information on household assets, debts, income and consumption. It has now been conducted on four occasions and the fifth wave is under way. This survey has been specially designed for the study of household wealth, and therefore incorporates an oversampling of wealthy households, while also providing a representative picture of the structure of household assets and debts. It is also designed to allow comparisons with European wealth surveys (collectively described as the Household Finance and Consumption Survey).

Another important characteristic of the EFF is the use of longitudinal surveys: from the second edition onwards, some of the households that participated in previous editions have been re-interviewed. Thus there is a sub-set of households that can be observed at various points in time and, in some cases, over a period of nearly ten years.

The EFF questionnaire is divided into nine main sections[8]:

- Demographics;
- Real assets and their associated debts;
- Other debts;
- Financial assets;
- Pension plans and insurance;
- Labour market status and related income;
- Non-labour income in the previous calendar year;
- Means of payment;
- Consumption and savings.

Questions on assets and debts refer to the household as a whole, while those on labour market status and related income are for each household member over the age of 16.

Based on this analysis, the first Financial Education Plan targeted Spanish families according to the distribution of assets, households' debt and attitudes towards financial risks.

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8 Micro data, the questionnaire, methodology, descriptive results reports and more information can be found at: http://www.bde.es/bde/en/areas/estadis/Otras_estadistic/Encuesta_Financi/

The use of focus groups to gain further understanding of specific policy areas

📖 CASE STUDY: BRAZIL

The use of focus groups to investigate over-indebtedness

Measurement surveys conducted in Brazil have identified worryingly spendthrift behaviours among the population; at the same time the analysis of economic data reveals a high percentage of household income that goes to pay off debts. It is in this context that the Central Bank has carried out a national focus group study to investigate the debt problems of Brazilians.

The focus groups had three main objectives: (i) Understanding the main reasons and the process that ultimately lead financial services consumers to over-indebtedness and credit restrictions; (ii) Evaluating the level of consumers' comprehension about credit products; and (iii) Identifying potential lines of action that could mitigate the effects of over-indebtedness, delinquency and credit restrictions.

The study was conducted between August and October 2014 in four metropolitan areas (Rio de Janeiro, São Paulo, Recife and Porto Alegre) with two focus groups in each area. Each focus group had eight to 10 participants from 20 to 80 years old. Participant consumers were selected considering their income level and their restrictions in credit bureaux.

The study identified three main reasons for the beginning of an over-indebtedness process. These reasons, as reported by consumers, are: (i) Unexpected events (job and income loss, illness, family member illness, unexpected pregnancy, death of main household provider, divorce); (ii) Lack of financial planning (impulsive shopping, excessive instalments, impulsive and uncontrolled use of credit lines); and (iii) Bank loans or credit lines used on behalf of others (family, friends). The Survey also revealed other consumers' perceptions about debt, credit and their over-indebtedness situation, which will be instrumental in refining the financial education policies part of the Brazilian national strategy.

Consumers' perceptions on over-indebtedness

Participant consumers believe that credit lines are extremely useful and beneficial when used conscientiously. However, several of them also believe they conceal "traps" that can lead to excessive debt, with significant financial and emotional impacts. Some of the traps mentioned were excessive offer of credit lines, unsolicited credit granting or increase of credit limits above payment capacity and high interest rates, especially interest rates associated with the minimum payment in credit cards. Additionally, consumers reported that low flexibility in renegotiating debt and high interest rates make it more difficult for people to exit an over-indebtedness problem.

Several participants deemed themselves responsible for their debt problem. Nevertheless, they also deemed financial institutions responsible for the aforementioned "traps". Participants who showed better comprehension of their debt problems and recognised their own responsibility for the excessive debt were more likely to adopt behaviour changes regarding their financial planning.

The study revealed that a large proportion of participants had only realised that they had a debt problem when they could no longer afford any payments at all. When confronted with debt problems, participants looked for guidance among friends and family and tried to renegotiate their debt with creditors. However, according to participants, creditors tend to offer better payment conditions only when the 'limitation period' is about to expire (5 years). According to the Brazilian Civil Code, a creditor loses the right to collect a debt after five years but the debtor may still be the subject of a lawsuit, which can be expensive, complicated and risky for the creditor. For this reason creditors prefer to offer better payment conditions and solve the issue in an easier way before the end of the limitation period. As a result, several consumers reported that they stop repaying their debts until the limitation period expires or until the creditor offers better payment conditions. Several participants reported that they use credit cards and bank cheques from others (family and friends) if non-payment results in restricted access to credit.

Some of the respondents believe that, despite the negative experience, they had learned important lessons on how to handle their personal finances. Consumers reported that, after their over-indebtedness situation, they adopted better practices in personal financial managing such as the use of spreadsheets to track income and expenses, increasing savings, planning ahead of time, limiting the acquisitions of more expensive goods and a stricter control of credit card expenditure.

Moreover, based on their own experiences, participants indicated ways to avoid and, perhaps, get out of excessive debt situations. Consumers suggested attitudes such as controlling the family budget through spreadsheets, cancelling all but one credit card, saving money and building some financial reserve, not accepting many credit lines or high credit limits beyond payment capacity, accepting debt renegotiation only when the creditor reduced the interest rate, and, finally, refraining from buying many goods on instalment plans.

🕮 CASE STUDY: HONG KONG, CHINA

Focus groups and additional quantitative evidence to understand money management

The Investor Education Centre (IEC) of Hong Kong, China, identified money management as one of the overarching themes of its actions when conducting its financial knowledge and capability foundation study (IEC, 2013).

In order to further inform activities under this theme, the IEC commissioned a research study about people's knowledge, attitudes and behaviour towards money and debt management (IEC, 2014a). The study, conducted between October 2013 and January 2014, was conducted to understand knowledge, attitudes, and behaviour towards various aspects of money management such as budgeting, spending, savings and investment; to look into attitudes and behaviour towards borrowing; and to identify knowledge and capability gaps for the IEC's education work.

The research was conducted in two phases. A first, qualitative phase with focus groups, and a second, quantitative phase with interviews through questionnaires.

First phase - qualitative approach

Five focus groups were conducted in October 2013 with the following group compositions:

- Group 1: Full-time tertiary students;
- Group 2: Young working adults aged 23-34 (singles or couples without children);
- Group 3: Mature working adults aged 35-49 (singles or couples without children);
- Group 4: Families aged 35-49 with children below 18;
- Group 5: Pre-retirees or retirees aged 50-65.

This qualitative approach was complemented by additional in-depth interviews conducted with debtors at various levels of indebtedness.

Second phase - quantitative approach

This phase was undertaken through a two-stage sampling approach. The first stage was conducted among 1500 members of the general public aged 18-64. The territory's population census was applied to the sample to achieve representativeness based on a quota on age, gender, residential districts, working status and personal income. The second phase consisted of booster interviews conducted at least 500 people who had borrowed money over the past 12 months. A total of 284 interviews with borrowers were conducted in the first stage followed by an additional 216 interviews in the second stage.

Results

The research allowed the IEC to gain additional information on the financial position of citizens, their financial concerns and goals as well as their money management styles and their self-rating on money management capability. The IEC focused its analysis in particular on day-to-day money management, wealth management and debt management.

Overall, the financial position of the population was good with 76% maintaining a surplus and 17% living within their means. Nonetheless, the research identified areas for improvement and the findings informed the future policies and programmes of the IEC.

OECD/INFE FINANCIAL LITERACY AND FINANCIAL INCLUSION MEASUREMENT TOOLKIT

The OECD/INFE financial literacy and financial inclusion measurement toolkit incorporates a core questionnaire (also described as a measurement tool) and methodological guidance, including guidance on whom to interview, and how to prepare the interviewers for their task (OECD/INFE, 2015; OECD/INFE, 2013b). It also includes additional questions that can be used to enrich national datasets.

This toolkit provides:

1. an initial measure of financial literacy to identify national levels of financial literacy, provide a baseline and set benchmarks for national strategies or particular programmes;

2. a description of levels of financial literacy in terms of key socio-demographic groups and explanatory variables that will enable policy makers to identify the needs of the population, the groups with the greatest needs and the gaps in provision;

3. the opportunity to conduct repeat measures of financial literacy to identify change over time and;

4. a comparison of levels of financial literacy across countries.

The initial 2010 Toolkit covers topics such as keeping track of finances, making-ends-meet, longer-term financial planning and choosing products. It also includes questions on product awareness and holding in order to inform work on financial inclusion.

The Core Survey

The survey comprises questions that have been selected from existing national good practices, and covers financial knowledge, behaviour and attitudes relating to the aspects of financial literacy that are relevant to financial well-being, such as budgeting and money management, short and long term financial planning, and financial products choice. It also allows gathering key socio-demographic details of the surveyed sample, including age, gender and income levels.

Methodology

The toolkit includes methodological notes, to ensure that the data sample collected is comparable across countries and that the survey is undertaken appropriately in order to maximise its relevance. These include instructions for briefing interviewers so that they gather information of a high quality, with detailed guidance on specific questions if needed. The toolkit also recommends an achieved sample of at least 1000 individuals aged 18+, and recommends that interviews are done face to face or over the telephone

Development and use

The toolkit was developed in 2009 by an INFE expert subgroup and first used in an international assessment in 2010 across 14 Countries: Albania, Armenia, British Virgin Islands, the Czech Republic, Estonia, Germany, Hungary, Ireland, Malaysia, Norway, Peru, Poland, South Africa and the UK.

Since 2010, about 30 countries have used the OECD/INFE questionnaire to collect data on financial literacy to inform their policies or strategies using some, or all, of the OECD tool, and at least three of these have done so twice (Estonia, Peru and South Africa).

More recently, the Toolkit was also used by the Development Bank of Latin America (CAF) to undertake the first baseline survey and comparative analysis of financial literacy and inclusion levels in four Andean countries: Bolivia, Colombia, Ecuador and Peru (Mejia, D., 2014). Policy specialists from CAF that have worked in cooperation with the OECD Secretariat have underlined how the results will be instrumental in identifying target groups by socio-demographic characteristics as well as vulnerabilities. The data will provide both a baseline and an audience segmentation that will be the basis for the implementation of evidence-based national strategies for financial education in the Andean economies.

Update of the Toolkit

The Toolkit has been updated in 2015 in order to ensure that it continues to be an adaptable and relevant instrument to measure financial literacy in light of evolutions in the understanding of financial literacy and developments on the ground (OECD/INFE, 2015). The Toolkit is publicly available and the OECD/INFE Secretariat encourages its use. This was done in consultation with members of the OECD/INFE, to incorporate additional questions and capture more data on issues that have been increasingly identified as pressing within national strategies, such as:

- financial well-being;
- confidence in own financial knowledge;
- the setting of personal financial goals;
- financial planning for retirement;
- experience of fraud (to understand possible exposure to pyramid type schemes, phishing scams, as well as unauthorised use of cards); and
- exposure to different media channels (to subsequently chose delivery mechanisms appropriate to each target audience identified).

2015 OECD/INFE Survey

The revision preceded the launch of a new international measurement exercise through the OECD/INFE. This has also been dictated by the increase in the number of countries developing or implementing a National Strategy for Financial Education, which will need either a baseline survey or additional data to track changes and progress among their target audiences as well as the general population.

Over 30 countries are expected to participate in this exercise, which will lead to a dedicated OECD analysis and report in 2016. This second international, comparative measure will allow the original countries that participated in 2010 to track changes across their population and see how these compare with other countries. It will also give new countries the opportunity to participate in an international comparison and benefit from inclusion in the cross-country, comparative analysis by the OECD Secretariat.

CHAPTER 3. ESTABLISHING INSTITUTIONAL AND GOVERNING ARRANGEMENTS: THE ROLE OF STAKEHOLDERS IN THE NATIONAL STRATEGY

As highlighted in the OECD/INFE High-level Principles on National Strategies for Financial Education, establishing an institutional framework tailored to national circumstances requires transparent co-ordination and governance mechanisms with an identified leading authority or body as well as shared but clearly defined roles and responsibilities for relevant stakeholders.

This is facilitated by the presence of clear explicit mandates on financial education. However, obtaining a legal mandate for the national strategy can be challenging: it can require legislative action or the revision of institutions' founding acts. As a consequence an increasing number of institutions are deriving a legal mandate for financial education through other responsibilities.

The experiences of countries in designing institutional and governing arrangements are diverse and depend on national circumstances. Overall, this phase requires high levels of co-operation, agreement on the national strategy's objectives, as well as the definition of appropriate guiding rules for private sector involvement.

This chapter encompasses trends in the development of mandates on financial education, including in combination with financial consumer protection, issues relative to the different types of governance models as well as to the role of the private and not-for-profit stakeholders. It also draws lessons learnt from the experiences of countries with different cultural and institutional settings.

MANDATES ON FINANCIAL LITERACY/EDUCATION

Despite the increasing number of national strategies for financial education (see Table 1.1) and the visibility of the issue, a relatively small number of countries have assigned a formal explicit mandate to improve financial literacy to a public authority(ies). Where such a mandate exists, it generally belongs to either the Ministry of Finance, a financial regulatory or supervisory authority, the central bank, the Ministry of Education or dedicated financial education committees.

In some cases, the mandates are not explicit but can be implied from other responsibilities assigned to the institution, such as the provision of unbiased information on economic and financial matters to citizens in the case of central banks. Mandates can also be granted by laws or regulation, as in the Czech Republic where the Ministry of Education received a formal mandate through the law introducing mandatory financial education in the school curriculum, or as in New Zealand where the Commission for Financial Capability tacitly draws its mandate from the Superannuation and Retirement Income Act (New Zealand Government, 2001). This mandate has been further strengthened by the release of the Government statement Building financial capability in New Zealand, which identifies financial capability as a priority for the Government (New Zealand Government, 2015).

Mandates on financial education can also be linked to other policy areas, such as financial inclusion (the Superintendence of Banking, Insurance and Private Pension Funds, SBS, in Peru), responsibility for a national curriculum that also offers economic education (Ministry of Education in Estonia) or financial consumer protection (see Box 3.1). Mandates can also be explicit but given more generally to all financial sector regulators (capital market, insurance, pension authorities and central banks) as in Colombia and India.

A categorisation of the financial literacy/education mandates based on their sources is provided in Table 3.1.

Table 3.1 Nature of financial education mandates (selected examples)

Source	Economy and Institution
Explicitly enshrined in the institution's founding act or its revisions ("financial education/empowerment" and/or "financial literacy/capability/etc." are mentioned)	Australia - Australian Securities and Investments Commission (ASIC) Canada - Financial Consumer Agency of Canada (FCAC) Estonia - Financial Services Authority Indonesia - Financial Services Authority Japan - Financial Services Agency and Central Council for Financial Services Information South Africa - Financial Services Board Turkey - Capital Markets Board United Kingdom – Money Advice Service
Implied from other responsibilities (for example: provision of information to consumers, ensuring a smooth functioning of financial markets, financial consumer protection mandates, etc.)	Armenia – Central Bank Latvia - Financial and Capital Market Commission (FCMC), (in accordance with Law on the FCMC) Lebanon - The *Institut des Finances Basil Fuleihan* Indonesia – Bank Indonesia Malaysia – Central Bank (*Bank Negara Malaysia*) New Zealand - Commission for Financial Capability (from the Superannuation and Retirement Income Act) Peru - Superintendence of Banking, Insurance and Private Pension Funds (SBS) (from financial inclusion) Portugal - Central Bank (*Banco de Portugal*), Portuguese Securities Market Commission and Portuguese Insurance and Pension Funds Supervisory Authority Spain – Securities Market Authority (*Comisión Nacional del Mercado de Valores*, CNMV) (from protection of investors) and Central Bank Thailand - Bank of Thailand (raise people's standard of living and ensure financial stability)
Granted through **primary legislation** (an act from parliament, legislative assembly, etc., giving your institution a clear mandate for financial education in the context of a specific policy or reform)	Czech Republic - Ministry of Education Hong Kong, China - Investor Education Centre (amendment of the Securities and Futures Ordinance, 2012) Mexico - Committee on Financial Education (Law to regulate financial groups) United States - Financial Literacy and Education Commission (Fair and Accurate Credit Transactions Act of 2003)
Given through **secondary legislation** (Financial markets regulation, government decree, National Development Plan, etc.)	Brazil - The National Committee for Financial Education, CONEF (Presidential Decree) Russian Federation - Ministry of Finance Spain - Ministry of Economy (Royal Decree)

Box 3.1 Financial consumer protection and financial education responsibilities: synergies and operational challenges

Financial education and financial consumer protection policies are, together with financial inclusion, essential to foster financial well-being and part of the trilogy for the financial empowerment of consumers. The importance of combining financial education and financial consumer protection policies has been acknowledged at the highest levels, and notably by the G20.

The G20 High-level Principles on Financial Consumer Protection (G20/OECD, 2011), designed to assist policy makers to enhance financial consumer protection, include Financial Education and Awareness as one of their ten pillars. Principle number 6 states that:

"*Financial education and awareness should be promoted by all relevant stakeholders and clear information on consumer protection, rights and responsibilities should be easily accessible by consumers"* and that *"Taking into account national circumstances, financial education and awareness should be encouraged as part of a wider financial consumer protection and education strategy, be delivered through diverse and appropriate channels, and should begin at an early age and be accessible for all life stages*".

The Principles recognise the different nature but also the potential overlaps between financial education and financial consumer protection responsibilities. This can create positive synergies, but also pose challenges to policy makers in authorities with dual mandates. Financial education seeks to promote new skills and behavioural change and requires communication and outreach expertise, whereas financial consumer protection deals mostly with regulation and legal instruments. Thus, the human resources and the expertise required to carry out these two responsibilities may be different.

Given the positive synergies stemming from the implementation of these two mandates, in several jurisdictions the same authority in charge of financial consumer protection also possesses a financial education mandate. This double mandate can be part of the institutions' founding acts or be a consequence of the rising relevance of financial education policies (see Table below and the case studies at the end of this section).

Institutions having legal mandates for both financial education and financial consumer protection (selected experiences)

Institution	Source and nature of the dual mandate
Australia Securities and Investments Commission (ASIC)	ASIC is Australia's corporate, markets and financial services regulator. Since 2008 ASIC has also been the Government agency with national responsibility for financial literacy in Australia. ASIC has statutory responsibility to both educate and protect financial consumers and investors, under the objective to "promote confident and informed participation by investors and consumers in the financial system". ASIC's broad jurisdictional remit and responsibility for regulation of financial services equip it with invaluable early insights into market and product developments, as well as intelligence about emerging consumer issues. Experience has shown that regulatory responses can be most effective if enacted using a combination of supply side and demand side responses (for example using regulatory and educational initiatives together to change provider behaviour and better equip investors with information).
Financial Consumer Agency of Canada (FCAC)	Since its creation in 2001, FCAC has had a mandate to provide consumer protection and financial education. FCAC ensures federal financial entities comply with consumer protection measures. It also promotes financial education and raises consumers' awareness of their rights and responsibilities. Consumers not only to be protected but to have a solid understanding of financial services and their associated rights and responsibilities. FCAC also monitors emerging trends and issues and provides input on policy to the Department of Finance. Recognizing the need to improve the financial knowledge and decision-making of consumers, the Government of Canada expanded FCAC's mandate in 2007 to officially include financial literacy and provided new funds to the Agency to develop a financial literacy programme for youth. Then, in its 2008 budget, the government provided ongoing funding to FCAC to support efforts to improve financial literacy in Canada, to Canadians at large. In April 2014, a Financial Literacy Leader was appointed to collaborate and coordinate activities with stakeholders from the public, private and non-profit sectors, including academics and educational institutions, to support and contribute to initiatives that strengthen the financial literacy

	of Canadians. The Leader works within FCAC under the guidance of the Agency's Commissioner.
Financial Services Agency of Japan	Both mandates are included explicitly in the Act for the Establishment of the Financial Services Agency.
Superintendence of Banking, Insurance and Private Pension Funds (SBS)	The SBS is the financial regulator and supervisory authority for banks and non-bank financial institutions, insurance companies and administrators of private pension funds; whose primary focus is on prudential supervision, according to its Founding Act of 1996. However, since the issuance of the Complementary Law to the Consumer Protection Law in Financial Services (2005) and the Code for Consumer Protection and Defense (2010), the SBS has also been tasked with overseeing financial consumer protection (in coordination with INDECOPI, the Peruvian consumer protection authority) by regulating and supervising financial market conduct within its scope and jurisdiction. In this regard, one of the main objectives of the mandate given to the SBS is the promotion of transparency and information disclosure to financial users in clear and easy-to-understand terms.
National Council of Financial Supervisors (Portugal)	The National Council of Financial Supervisors, composed of the three Portuguese financial supervisors (Central Bank - Banco de Portugal -, Portuguese Securities Market Commission and Portuguese Insurance and Pension Funds Supervisory Authority) was established in 2000 with the purpose of coordinating the activity of the financial supervisors in the context of the regulation and supervision of financial institutions and markets. In 2011, the National Council of Financial Supervisors launched the Portuguese National Plan for Financial Education considering that the promotion of financial literacy is an important complement to financial market regulation and supervision. It is considered that higher levels of financial literacy foster the efficiency of rules on financial consumers' protection, promote better choices of financial products and contribute to financial stability. Therefore, the three financial supervisors are currently in charge of financial supervision and regulation of financial institutions and markets and of the implementation of financial education initiatives.
Financial Services Board of South Africa	Consumer financial education was not in the initial founding act of the Financial Services Board (Financial Services Board Act No.97 of 1990); however, the Act was amended in 2000 to mandate the FSB to undertake consumer financial education when it became apparent that part of financial consumer protection is consumer education. This made consumer financial education one of the three mandates of the FSB and the FSB was mandated to "promote programmes and initiatives by financial institutions and bodies representing the financial services industry to inform and educate users and potential users of financial products and services". Noting that this mandate was restrictive in terms of the implementation and provision of financial education, the FSB mandate was further amended in the Financial Services General Laws Amendment Act of 2013 and the mandate now states: "provide, promote or otherwise support financial education, awareness and confidence regarding financial products, institutions and services". The FSB is further mandated to: • supervise and enforce compliance with laws regulating financial institutions and the provision of financial services; • advise the Minister on matters concerning financial institutions and financial services, either of its own accord or at the request of the Minister; and • to promote programmes and initiatives by financial institutions and bodies representing the financial services industry to inform and educate users and potential users of financial products and services.
Bank of Thailand (BOT)	BOT is explicitly empowered by the Financial Institution Business Act (2008) to prescribe measures for financial institutions to comply with, including in the field of financial consumer protection. Promoting financial education is pursued as the BOT's mission without explicit mandate with an aim to raise people's standard of living and ultimately financial stability of the entire nation.

International developments, such as increased relevance of financial education policies and the attention they received from global fora such as the G20 have also brought some countries to rethink the financial education mandates and responsibilities. In Japan for example, a high-level Study Group was convened to redefine responsibilities and avoid duplication of efforts among the several public institutions active in financial education.

Mandates can also be boosted thanks to the presence of financial education policies in national development plans as a complement to social inclusion, economic development, or poverty reduction measures. In these cases, the authorities in charge of financial education can receive further recognition of their mission and of their activities, especially as national development plans are in most cases drafted and implemented under the supervision of the head of the executive (President/Prime Minister). In these cases, the existing mandates on financial education can receive a powerful formal recognition and the authorities in charge receive further incentives to implement comprehensive and effective financial education policies, and to move forward in the design and implementation of national strategies for financial education. This was the case in Mexico with the National Development Plan 2013-18 (see case study) and in Colombia, thanks to the National Development Plan 2010-14 (National Planning Department of Colombia, 2011), which led to the national Decree establishing the administrative structure of the national strategy for the country.

KEY LESSONS LEARNT ON FINANCIAL LITERACY/EDUCATION MANDATES

Formal, explicit and clear mandates to improve financial literacy are not yet common, but where they exist they facilitate and strengthen the implementation of the national strategy.

Typically, when a mandate exists:

- It allows public institutions to more easily design and implement financial education policies and programmes that are sustainable over the medium and long run;
- It facilitates coordination among public authorities, and makes it easier to establish clear responsibilities. In this respect, the presence of a mandate can be publicised in order to increase awareness among the general population;
- It permits earmarking resources within the institutions' budgets specifically devoted to the implementation of financial education policies and programmes (instead of, for example, using resources from general communication and outreach);
- It can be used as a leverage to boost financial education policies or financial education components within other pieces of legislation, when engaging with the government, other public authorities as well as stakeholders at the national level;
- It provides a legal basis for the development of codes of conduct for the private sector, as well as the enforcement of regulations mandating private financial institutions to carry out financial education programmes (see the example of Indonesia and South Africa in Chapter III "The means: funding the strategy").

Finally, when institutions have both mandates for financial education and for financial consumer protection, it is important to ensure that appropriate internal communication and reporting mechanisms are in place to exploit the synergies between these two responsibilities. This has an impact on how human resources and expertise mare organised (and, if relevant, shared) and how programmes are implemented on the ground, and it should be duly taken into account when implementing a national strategy.

Case studiesIn Mexico, existing structures created to design and implement the national strategy obtained a legal mandate for financial education thanks to their incorporation in law through a law on financial markets.

The examples of Australia, Malaysia and Thailand show how the institutions leading the national strategy carry out financial education and financial consumer protection responsibilities. The Australian Securities and Investments Commission (ASIC) has an explicit mandate for financial education. It has a team dedicated to financial education that works with other departments regulating specific sectors of financial markets (insurance, pensions, managed funds, etc.). It also cooperates with the Australian Competition and Consumer Commission (ACCC) at the national level, and with the consumer affairs agencies of the Australian territories. The central banks of Malaysia and Thailand are examples of institutions with an initial mandate for financial consumer protection, which imply a financial education mandate from their wider financial sector responsibilities and that assumed a leading role in financial education. In Malaysia, the bank's Consumer and Market Conduct Department is responsible for financial education, and implements this mandate through a variety of financial consumer protection initiatives, and in the framework of a wider financial inclusion strategy. In Thailand, the Financial Consumer Protection Centre carries out both responsibilities in cooperation with external stakeholders and other public authorities active in the financial sector.

Finally, the United Kingdom is an example of an economy with two institutions with separate financial education and financial consumer protection responsibilities whose co-operation is set out in a memorandum of understanding.

CASE STUDY: MEXICO

A national development plan enshrining in law financial education mandates and the national strategy structures

The administration of President Enrique Peña Nieto gives priority to financial education because of its impact on the welfare of the population as a whole and on micro, small and medium sized companies and to increase social and financial inclusion. The financial education public policy has clear goals and is a cross-cutting policy.

To this end, the 2013 to 2018 National Development Plan (PND) (Federal Government of Mexico, 2012a) incorporates three lines of action related to financial education. These are:

- Strengthen the inclusion of financial education in basic and intermediate education programmes;
- Promote access to, and the responsible use of, financial products and services; and
- Strengthen the financial education of women for their adequate financial inclusion.

In order to achieve these Lines of Action, the 2013-2018 National Financing for Development Plan (Federal Government of Mexico, 2012b) has a specific strategy on financial education, this being the development of greater financial capabilities or competencies to better use financial products and services and to foster financial consumer protection.

The institutional framework to advance these topics is the Committee for Financial Education (CEF). The Committee is chaired by the Deputy Minister of Finance and Public Credit. Its objective is to coordinate the efforts, actions and programmes of its members and among the functions of the CEF are:

- To define the priorities and formulate the guidelines of the public policy for financial education;
- To prepare the National Strategy for Financial Education; and
- To plan the activities of the National Financial Education Week.

On January 9, 2014, President Enrique Peña Nieto enacted a comprehensive financial reform which aims to foster financial education, financial inclusion and protection of the consumer of financial services, as well as competition among financial services providers.

This reform strengthened the CEF and the National Council for Financial Inclusion (CONAIF) by incorporating them in law (Law to Regulate Financial Groups) (SEGOB 2014). The reform establishes that the CONAIF must coordinate with the CEF on financial education actions.

CASE STUDY: AUSTRALIA

The Australian Securities and Investments Commission (ASIC) Act 2001 (Australian Government, 2001) sets out ASIC's statutory objectives. That Act requires ASIC (among other things) to maintain, facilitate and improve the performance of the financial system and entities in it; and promote confident and informed participation by investors and consumers in the financial system. ASIC also has powers to protect consumers against misleading or deceptive and unconscionable conduct affecting financial products and services, including credit.

ASIC's responsibility for financial literacy supports the statutory objective above, to 'promote confident and informed participation of consumers and investors in the financial system'. That is, financial literacy and consumer education are part of ASIC's overall regulatory toolkit as the consumer protection regulator, and are complementary to ASIC's enforcement and compliance work.

In practice, ASIC has a number of operational teams whose work is focused on investors and financial consumers and the interaction of those investors and consumers with the financial services sector. These teams each focus on particular financial services sectors such as for example superannuation, managed funds, financial advice, banking and credit, insurance, etc. These teams work very closely with ASIC's financial literacy team to ensure that ASIC's financial literacy and consumer education work aligns with and supports ASIC's regulatory and consumer protection work.

Cooperation with other agencies

There are other government agencies in Australia who also have a consumer protection mandate, including (at Commonwealth level) the Australian Competition and Consumer Commission (ACCC), and at state/territory level, the various State and Territory consumer affairs agencies.

The ACCC's primary responsibility is to ensure that individuals and businesses comply with Australia's national competition, fair trading and consumer protection laws. The ACCC will take action where it improves consumer welfare, protects competition or stops conduct that is anti-competitive or harmful to consumers, and promotes the proper functioning of Australian markets. The ACCC's role at national level complements that of State and Territory consumer affairs agencies, who each administer relevant consumer protection legislation in their state or territory jurisdiction.

ASIC works closely with the ACCC and the State and Territory consumer affairs agencies. For example, ASIC and ACCC have signed a Memorandum of Understanding that covers liaison, cooperation, assistance, joint enquiries and exchange of information. ASIC and ACCC regularly work together on issues where both agencies have a jurisdictional remit - for example, they recently collaborated on industry guidelines for debt collectors, and an accompanying publication for consumers.

ASIC, the ACCC and the State and Territory consumer affairs agencies also meet at regular intervals in joint forums to discuss and coordinate aspects of their consumer protection activities, in particular any consumer education initiatives or campaigns that any of the agencies are undertaking. The agencies regularly support and cross-promote campaigns of other agencies, to help reinforce and more widely disseminate relevant consumer messages.

CASE STUDY: MALAYSIA

Bank Negara Malaysia (BNM) has responsibility for financial consumer protection including financial education. The Financial Services Act 2013 and the Islamic Financial Services Act 2013 (Government of Malaysia, 2013a and 2013b) provide an explicit mandate to BNM to protect the rights and interests of consumers of financial services and products as part of the agenda to promote financial stability.

While enhancing financial literacy of Malaysians is not an explicit mandate of BNM, it is pursued to support the formal mandates of preserving financial stability and promoting financial inclusion. The establishment of the Consumer and Market Conduct Department in late 2006 marks BNM's commitment towards according greater focus on elevating consumers' financial literacy, promoting sound and fair market practices, as well as putting in place the necessary infrastructure for consumer protection and in ensuring effective recourse.

The department is tasked with four main roles of market conduct risk surveillance, market conduct policy formulation, market conduct supervision (including executing appropriate enforcement actions) and in setting out national strategies to develop financially competent Malaysians. Financial education activities are implemented by the Credit Counselling and Debt Management Agency (AKPK) and a few departments within BNM.

The BNM's Financial Sector Blueprint (2011-2020) is the instrument that outlines recommendations for greater empowerment to consumers in the financial sector and aims to strengthen financial literacy at the national level through coordinated initiatives among key stakeholders in a more holistic manner.

In order to carry out these mandates, BNM promotes several initiatives seeking to promote fair and equitable market practices with a focus on financial consumer protection. Several consumer protection initiatives have been undertaken such as the strengthening of business conduct regulations applicable to financial service providers (FSPs):

- FSPs and the intermediaries are expected to implement fair consumer practices with policies and systems that focus on protecting consumers' interest and fostering continued public confidence in the financial system;
- BNM continues to enhance market conduct surveillance and take enforcement actions against FSPs that adopt unfair practices;
- Efforts are also focused on promoting some degree of self-regulation in the industry through enhancing roles and effectiveness of the industry associations and their enforcement of the respective codes of good business practices.

In addition, BNM has also established comprehensive institutional arrangements to deal with consumers' enquiries, complaints and redress:

- Operationalization of customer contact centres at the FSPs;
- Customers' advice and complaint resolution via Bank Negara Malaysia *Laman Informasi Nasihat dan Khidmat* (BNMLINK) and BNM's customer service and contact centres, TELELINK ;
- Alternative dispute resolution mechanism via the Financial Mediation Bureau; and
- Debt management, credit counselling and financial education services offered by the Credit Counselling and Debt Management Agency (a subsidiary of BNM).

In parallel, BNM also acts to improve consumers' financial literacy. At the national level, BNM drives the financial education initiatives through formulation of policies, setting strategic directions, identification of target groups and priority areas to achieve effective implementation of financial education initiatives for the Malaysian consumers. BNM provides consumers with access to financial information to ensure that consumers are empowered with the knowledge, skills and tools necessary to make informed financial decisions in building, managing and protecting their personal wealth.

Financial education initiatives in Malaysia have been funded by BNM since the introduction of the consumer education programme in 2003[9]. Financial education initiatives co-exist with efforts to provide a conducive and enabling environment for financial inclusion and for fair treatment of consumers.

[9] Resources are deployed in various aspects, including the development and dissemination of financial education materials and information, consumer engagement and outreach, assessment on financial literacy of consumers, collaboration and partnership with relevant ministries and agencies, industry associations, financial service providers and consumer groups in the implementation of financial education initiatives.

Measures for an inclusive financial sector in Malaysia	Measures for consumer protection in Malaysia
Creating a diverse range of financial service providers that thrive and compete	Ensuring responsible business conduct
Enhancing distribution channels to ensure widespread access to financial services	Provision of high quality, timely information
Strengthening the supporting financial infrastructure	Having in place an effective institutional arrangement for assistance and redress
Ensuring a minimum level of banking products and services are provided at reasonable costs	Ensuring a minimum level of banking products and services are provided at reasonable costs
Enhancing financial capability through education	Enhancing financial capability through education

In addition, BNM continues to make available enabling infrastructures to ensure sustainable and effective implementation of financial education initiatives, including providing an interface to facilitate access to financial education information by the public and establishing an assessment framework to regularly monitor and measure the financial capability of consumers.

BNM is currently engaging wider stakeholders in pursuit of further accelerating the development of financially competent Malaysians through better coordination and collaboration with other agencies having specific mandates or interest in financial education.

CASE STUDY: THAILAND

The Bank of Thailand (BOT) is explicitly empowered by the Financial Institution Business Act (2008) to prescribe measures for financial institutions to comply with, including in the field of financial consumer protection. Promoting financial education is pursued without explicit mandate with an aim to raise people's standard of living and ultimately financial stability of the entire nation.

In order to carry out both missions, the BOT set up the Financial Consumer Protection Center (FCC) as a central point of contact to ensure adequate financial consumer protection and the promotion of financial literacy. The FCC carries out these mandates in cooperation with external stakeholders.

The FCC promotes financial literacy through different channels, i.e. training, mass media advertisements, social network presence, and general educational activities. The FCC develops pedagogical content based on a variety of sources of information, such as complaints managed by the FCC's complaint handling division to identify the issues that are of interest or causing problems for the public at large, as well as relevant rules/ laws/ notifications issued both by the BOT or other government bodies. In addition, financial education materials and programmes are also designed based on cooperation with other organisations, depending on the specific policy area: content regarding credit records for individuals are reviewed by the National Credit Bureau, and informational material about insurance is sent to the Office of Insurance Commission; the Thai Bankers Association helped review the booklet on Financial Knowledge for Start-Up SMEs. There is also internal coordination within the BOT: the FCC in collaboration with the Payment Systems Policy Department has developed a brochure and booklet on how to safely use various means of e-payment.

Finally, the FCC also appoints the BOT's three regional offices, located in the major provinces of the country, to carry out the financial education activities in their regions. The FCC also works closely with the Corporate Communications Department on how to convey those financial literacy contents to the public efficiently within the scope of BOT's brand.

When it comes to complaint handling and market conduct, the FCC has a role as a one-stop centre for consulting and complaint handling, which pertain to financial services/providers under the BOT's supervision. Financial users can contact the FCC via various channels such as hotline number or website or face to face meeting at BOT premises. There are also complaint-handling teams in the BOT's 3 regional offices which support this function by receiving complaints through hotline number and local walk-in facilities. For any case that needs clarification on legal or regulatory issues, relevant departments, such as Legal Department, Supervision Group, and Financial Institutions Policy Group, will be involved. In addition, the FCC regularly communicates the information received from its consultation and complaint handling procedures to relevant departments to enhance appropriate market conduct and fair treatment to customers via the BOT's supervisory function.

🕮 CASE STUDY: UNITED KINGDOM

The Money Advice Service (MAS, formally the Consumer Financial Education Body) was established as an independent statutory body with responsibility for improving consumers' financial management and understanding in April 2010. The service has statutory objectives to enhance the understanding and knowledge of members of the public of financial matters and to enhance the ability of members of the public to manage their own financial affairs.

MAS was launched in April 2011 with online, telephone and UK-wide face-to-face advice services. In April 2012 the Service took on additional responsibility for funding and improving the quality, consistency and availability of debt advice. Its statutory functions relating to debt advice are set out in the Financial Services Act 2012. The Financial Conduct Authority (FCA) regulates financial services in the UK, maintaining and ensuring the integrity of the market, regulating financial services firms so that they give consumers a fair deal and ensuring the market is competitive. MAS is independent of the FCA in carrying out its statutory function. The Service's strategic goals and direction are set by a board, which oversees activities and management of the organisation. The board is appointed by, but acts independently of, the FCA.

MAS and the FCA maintain a memorandum of understanding setting out how the two bodies work together and share information. MAS is funded by an allocation from the levy that the FCA collects from the financial services firms that it regulates. Each year the FCA consults with industry on its proposals for the allocation of its fees across the industry, including the proportion allocated to MAS.

The Service's business plan and budget for the year ahead are subject to approval by the FCA. In addition to this, the Service must consult on its business plan and budget with the Treasury, the Department for Business, Innovation and Skills, and key advisory bodies to the FCA. The Service also consults on its business plans with the devolved governments in Scotland, Wales and Northern Ireland and with its own consumer, industry and debt advisory forums along with a range of independent organisations that have an interest in and contribution to improving financial capability in the UK.

An Independent Review of MAS was published in March 2015. It set out a range of recommendations to maximise the impact and effectiveness of the Service in the future. This included a call for stronger ties between the MAS, the FCA and the family of regulatory organisations. MAS is working closely with the FCA to ensure each organisation can make the most of their respective remits. An important part of this will be ensuring that research insights are shared and used to help the FCA shape its regulatory policy. The Service is working closely with the FCA in the development of the UK Financial Capability Strategy. MAS will be the anchor organisation for the UK Strategy on financial capability, providing a co-ordination and secretariat function for a long-term strategic focused on achieving a step-change in financial capability through a model of collective impact.

INSTITUTIONAL AND GOVERNING MECHANISMS

Governing mechanisms and leadership

Various legal, institutional and governance mechanisms involving a range of stakeholders are being set up in countries to develop and implement the national strategy for financial education (see also Table 5 at the end of this chapter for an overview of these arrangements in G20 economies). These arrangements often evolve between the design and the implementing phases. This flexible and pragmatic approach regarding the sharing of roles and responsibilities between different stakeholders through the life of national strategies is consistent with the evolution of financial literacy issues (from a policy and delivery perspective). It also takes into account the necessity to develop more specific expertise and to involve a range of stakeholders with a view to efficiently reaching out to a potentially wide audience in a context where (financial and in-kind) resources are often limited.

In more than half of the responding countries, a single public authority is responsible for leading the national strategy (both development and implementation phases). These authorities are often supported by a coordinating/consultative mechanism (council, body, commission). In another set of countries, the leadership is devolved to a leading coordinating body encompassing the different relevant public authorities (in most cases these involve the financial regulators and relevant ministries– typically the ministries of finance and education). This is the case in a number of Latin American countries following the initial Brazilian experience, but also in India (where the four regulators are involved), Japan and Portugal.

In a few countries, a new institution is set up to implement the national strategy (e.g. in Brazil and India). In both cases, this new institution is supervised by a leading coordinating body (composed of financial regulators and relevant members of the government).

In another small set of countries, relevant public stakeholders (often the ministry of finance, the central bank and the financial regulators as well as the ministry of education) share the responsibility for the development and implementation of the strategy depending on their respective area of expertise and existing mandate (for instance in Slovenia and Spain). In both cases, a dedicated working group has been put in place to set a national plan and coordinate the action of the different stakeholders within this plan.

Steering and coordinating mechanisms and their operational modalities

In order to guide, provide advice and supervise the implementation of their strategy, a number of countries have chosen a multi-stakeholder approach. In these examples, countries have set up or utilised existing steering committees and/or advisory boards (e.g. Australia, Brazil, the Netherlands, Russia, the UK and the US). In addition or as an alternative to high-level bodies, some countries have also (or) created coordination committees/commission between different public bodies with an interest in financial education to develop the national strategy, coordinate and harmonise national intervention (e.g. in Brazil, Colombia, India, Mexico, Portugal, Russia, Spain, Sweden, Thailand, or the US). These bodies are generally composed of a combination of public authorities with a role in financial education, they also sometimes involve private and not-for-profit partners (see also following section). In some countries where financial inclusion is the main objective assigned to the national strategy for financial education, a dedicated committee/body in charge of the financial education strategy is often created within a structure dedicated to financial inclusion (e.g. in Chile, Pakistan and Turkey).

These advisory boards and consultation committees meet from once a year (Czech Republic) to every month (e.g. in Argentina) depending on their level (political or more technical), role and responsibilities. Most of the decisions within these bodies and committees are made when a consensus can be reached and in a more limited number of cases through a vote (Czech Republic, Mexico, Pakistan, South Africa).

A number of countries have also established dedicated subgroups in charge of particular projects (e.g. in Latvia, the Netherlands, and Portugal), specific target audiences (UK), component of the national strategy (e.g. Mexico, South Africa) as well as an international advisory council with expert from other economies (Russia). In some cases, subgroups are in charge of monitoring the implementation of the strategy and can issue alerts and demand corrective actions to its implementing bodies, as in Brazil (see case study).

KEY LESSONS LEARNT IN DESIGNING ADAPTED AND EFFECTIVE GOVERNANCE MECHANISMS AND ESTABLISHING THE ROLE OF STAKEHOLDERS

Considering the possible synergies between financial education and other public policies, sound co-ordination among interested public sector bodies active in financial education is critical. This requires the active participation of, at least, public institutions with financial, economic and/or educational mandates, and with responsibility for social policies targeting vulnerable groups.

Involving relevant stakeholders as early as possible to create a broad ownership of the strategy and anchor commitment to the national strategy process is equally essential. Bringing on-board several stakeholders from the very beginning might be time consuming; however future benefits such as more effective collaboration and sense of ownership among stakeholders can offset initial costs.

Public institutions involved in the implementation of national strategies often face competing policy agendas, which can create challenges when moving into the implementation phase. As a consequence, the implementation of a national strategy by multiple stakeholders demands the definition of appropriate governance principles as well as mechanisms to ensure sustainability, monitoring and communication. Effective governance structures generally include:

- The separation of directive/executive and supervisory roles. This particularly has the advantage of allowing a deeper involvement of private and not-for-profit institutions in the implementation phase, while retaining the strategic leadership in the hands of public authorities.
- The support of, and regular liaison with the highest possible level of the government in order to maximise cooperation from the parties involved and ensure the strategy is sustainable and visible. This can also take the form of official periodic reporting made to the executive and/or the legislative, and can be included in the national strategy's roadmap.
- The presence of clear information sharing mechanisms and feedback loops. These mechanisms are particularly relevant when different stakeholders are responsible for the implementation of different programmes of the national strategy. This should be matched both by the transparency and accountability of public authorities towards stakeholders and citizens, and by stakeholders reporting back to public authorities leading the national strategy.
- The creation of a dedicated entity/ies in charge of managing the implementation of horizontal actions under the national strategy. This can be useful considering the responsibilities that representatives of public institutions have outside the sphere of the national strategy.
- The existence of specific entities (sub-committees or institutions) responsible for the evaluation, monitoring and audit of the strategy and its programmes.

In addition, governance structure also benefit from being transparent and clear to the public, as this increases accountability and awareness.

Public institutions in charge of the national strategy implementation should also have sufficient independence to carry out the actions part of the national strategy, as well as the related resources. This, as a corollary to the notion of independence, is beneficial in designing and implementing policies and programmes in the medium and long terms.

Case studies

The following selected case studies exemplify the variety of ways in which public authorities can establish institutional arrangements for the design and implementation of national strategies, and some of the different modalities of involvement of non-public stakeholders in the national strategy's governance mechanisms.

The case of Canada shows a unique structure. A legislated individual, the Financial Literacy Leader, is housed within the Financial Consumer Agency of Canada (the regulator mandated to provide financial consumer protection and consumer education). The role of the Leader is to collaborate and coordinate financial literacy initiatives with all sectors – public, private and non-profit. The Leader works with a Steering Committee made up of influential leaders in the private, government and non-profit sectors. Members are named for a two-year term. The Terms of Reference outlines their role which is to develop and implement the national strategy for financial education.

In Brazil, a presidential decree has created an administrative structure for the design and the monitoring of the national strategy, which includes all four financial regulators, as well as expert subgroups in charge of pedagogical tools or control and monitoring. Specifically, the implementation of some of the most important programmes of the strategy is conducted by an entity composed of the industry associations of the financial sector. In India, a technical group in charge of financial literacy and inclusion (part of a high-level council overseeing the development of financial markets) has created a new body in charge of the implementation phase of the national strategy.

In the cases of South Africa and the United Kingdom, public authorities in charge of the national strategy have set up multi-stakeholder approaches to the implementation of the strategy. In South Africa and the United Kingdom, a multi-stakeholder approach is made possible thanks to the inclusion of private and not-for-profit stakeholders respectively in the main committee in charge of the strategy and in the Financial Capability Board overseeing the strategy implementation and its Action Groups.

🕮 CASE STUDY: CANADA

Involving stakeholders through ongoing consultation with a Financial Literacy Leader

Canada is a unique example among existing national strategies for financial education, as its governance structure includes an appointed individual who is mandated to coordinate and encourage collaboration amongst financial literacy activities. The position of Financial Literacy Leader was established through an amendment to the Financial Consumer Agency of Canada Act, thus implementing the top recommendation of the Task Force on Financial Literacy (Canadian Task Force on Financial Literacy, 2010). The Minister of Finance appointed the Financial Literacy Leader in April 2014, who works within the Financial Consumer Agency of Canada under the direction of the Commissioner. The Leader and Minister announced a 15-member National Steering Committee on Financial Literacy, to assist the Leader to develop and implement the national strategy in July 2014.

In developing its national strategy, the Minister of State (Finance), the Financial Consumer Agency of Canada (FCAC) and the Leader engaged in extensive stakeholder consultations across the country with representatives from the public, private and non-profit sectors. All Canadians were invited to submit their comments online. Members of the Steering Committee played an active role in the consultations and the strategy development.

Additionally, FCAC organised roundtable consultation sessions during the 2014 national conference on financial literacy which gathered input from more than 200 participants. At the federal level, the Interdepartmental Committee on Financial Literacy provides a forum through which federal government departments and agencies identify opportunities to contribute to the National Strategy, identify needs and opportunities for collaboration, and implement the strategy through their own initiatives.

The Financial Literacy Leader will use a number of methods in order to monitor and evaluate implementation of the National Strategy, such as seeking ongoing feedback on FCAC's content, consulting with stakeholders and partners who provide tools and services, and from Canadians directly through surveys and feedback on the programs, tools and resources that they use. The Financial Literacy Leader will report on progress through FCAC's Annual Report. Canada will benchmark itself internationally by participating in the 2015 OECD/INFE Toolkit for measuring financial literacy and financial inclusion. Canada is also participating the 2015 OECD Programme for International Student Assessment.

The creation of dedicated structures for the design and implementation of the national strategy

🕮 CASE STUDY: BRAZIL

The leadership of a multilateral body and the creation of a public-private partnership

Brazil's National Strategy for Financial Education (*Estratégia Nacional de Educação Financeira* – ENEF) was formally established by Presidential Decree (Presidency of the Republic of Brazil, 2010). This act also created the National Committee for Financial Education (*Comitê Nacional de Educação Financeira* – CONEF), to handle the implementation phase of Brazil's National Strategy (NS). CONEF is responsible for ENEF's strategic governance, and coordinates its implementation: it sets the objectives of the strategy, and the guidelines and bylaws covering its financing, implementation, and evaluation. The Committee is also authorised to create working groups with expertise to provide technical support and to approve its own bylaws.

CONEF is composed of the following members:

1. A Deputy-Governor of the Central Bank of Brazil (*Banco Central do Brasil* – BCB);
2. President of the Securities and Exchange Commission (CVM);
3. Superintendent-Director of Brazil's National Superintendence for Pension Funds (PREVIC);
4. Superintendent of Brazil's Superintendence of Private Insurance (SUSEP);
5. Executive-Secretary of the Ministry of Finance (MF);
6. Executive-Secretary of the Ministry of Education (MEC);
7. Executive-Secretary of the Ministry of Social Security (MPAS);
8. Executive-Secretary of the Ministry of Justice (MJ); and
9. Four representatives of civil society: the Brazilian Financial and Capital Markets Association (ANBIMA), Brazil's major stock exchange (BM&FBOVESPA), the Brazilian Association of Banks (FEBRABAN), and the Brazilian Insurance Confederation (CNSEG).

The Presidency of CONEF rotates among the first five members listed above. As determined in CONEF's bylaws, the four representatives of civil society must be chosen among self-regulatory bodies recognised by one of the four regulators; industry associations from financial, capital, insurance, or pension markets; and consumer protection organisations. These representatives have a renewable 3-year mandate. Their current mandates are valid until December 2017.

The establishment of sub-committees and dedicated working groups by project/policy area

The Presidential Decree creating CONEF also established a Pedagogical Support Group (*Grupo de Apoio Pedagógico* – GAP) to provide pedagogical guidance to all ENEF's actions. The Group is composed of the Ministry of Education (MEC) and the four financial regulators, as well as by educational institutions and associations: the National Council of Education, five federal educational institutions appointed by MEC, the National Council of Education Secretaries (CONSED) and the National Union of Municipal Education Managers (UNDIME). The Ministry of Education presides over GAP and also serves as its Executive Secretariat. All the educational content of ENEF's actions is submitted to the GAP. As a multidisciplinary group, with strong methodological background, it is the forum for detailed in-depth discussions that revises and approves all financial education pedagogical material. It meets whenever convened, and the meetings are usually preceded by intensive revision activity of the documents for discussion. Since the beginning of ENEF's implementation, GAP has been meeting face-to-face around 3-4 times a year, with meetings lasting 1-2 days. The consistency of GAP's input and approach is ensured by the permanent presidency of the Ministry of Education.

The Permanent Technical Commission (*Comissão Permanente* – CP) is another consultative committee part of the national strategy. CP assists CONEF at the technical level, proposing rules, parameters and guidelines for ENEF's plans and actions. CP also advises CONEF by issuing recommendations on possible partnerships, branding of financial education material, financial literacy assessments and ENEF's website, among others. It is composed of representatives from the institutions that are part of CONEF, and its internal governance structure follows CONEF's presidency rotation scheme. The representatives sitting in the CP are drawn from those directly involved in implementing Financial Education initiatives within CONEF's members. Consequently, the meetings of the CP are instrumental in preparing and discussing issues before these are submitted to CONEF's strategic approval. The CP serves as the forum to discuss the details of the implementation of most of ENEF's programmes, and where most of the hands-on work is performed. CP meetings regularly encompass the presence of CONEF's partner Brazil's Association of Financial Education (AEF-Brasil) (see the case study "Brazil: a public-private partnership in action").

CP meets nearly once a month, mostly via videoconference, and each meeting usually lasts around four hours. CP members permanently consult with the strategic levels of their own institutions before entering the meetings. Decisions are usually made by consensus and then transmitted to CONEF.

Specific lessons learnt in implementing the national strategy: the role of the Surveillance and Supervision Committee

A Surveillance and Supervision Committee (*Comitê de Acompanhamento e Fiscalização* – CAF) created by CONEF supervises the partnership agreement with AEF as well as other aspects of the implementation of the strategy. It is formed by five members appointed by the four financial system regulators, plus the Ministry of Finance. CAF must report to CONEF regularly every semester and it may issue alerts to AEF-Brasil and CONEF if there is a breach in any provision of the Agreement or in AEF-Brasil's annual Work Plan. In that case, CAF may also determine corrective actions.

During implementation, it has become clear that CAF's role is of major importance. Initially it was supposed to report to CONEF annually, but experience has shown that semi-annual reports are needed. To support its work, CAF has built a risk assessment matrix, where aspects such as difficulties in fundraising, conflicts of interest, or undue appropriation of authorship of materials developed for ENEF are closely watched. Thirteen risks have been initially identified and, in its first report, CAF issued a list of recommendations to AEF-Brasil, to CONEF and its members. Among the recommendations, CAF pointed to AEF-Brasil that it should develop a routine of periodical revisions of ENEF's website (www.vidaedinheiro.gov.br) in order to keep it up-to-date. For CONEF, one of CAF's recommendations regards the development and implementation of a communication plan.

Based on CAF's recommendation, CONEF has developed a communication plan that aims to present ENEF to the general public and to contribute to its consolidation. One of the challenges addressed by the communication plan is giving a sense of integration to the actions of CONEF members. This has entailed identifying target audiences for the communication plan, and establishing general guidelines for communicating with the public. Despite this initial effort, it is proving necessary to detail the plan further, creating clear rules on the use of ENEF's logo and materials, side by side with those of AEF-Brasil and of other sponsors.

CASE STUDY: INDIA

The creation of a new public body in charge of the implementation of the national strategy

A Technical Group on Financial Inclusion and Financial Literacy of the Financial Stability and Development Council Sub-Committee (FSDC-SC) headed by the Deputy Governor, Reserve Bank of India, with representation from all financial sector regulatory authorities is the institutional mechanism set up to coordinate the efforts of all the financial sector regulators in the field of financial education. The National Strategy for Financial Education (NSFE) for India has been prepared under the aegis of this Technical Group.

A National Centre of Financial Education (NCFE) has then been established as a specialised institution for implementation of National Strategy for Financial Education. It reports to the Technical group.

The main role of NCFE is creating standard financial education material for various segments of the financial sector, develop and maintain a website exclusively for financial education which will be a one stop repository of all financial education activities by all the financial sector regulators:

- Reserve Bank of India;
- Security and Exchange Board of India;
- Pension Fund Regulatory and Development Authority;
- Insurance Regulatory and Development Authority; and
- Forward Market Commission.

All the above-mentioned financial regulators fund NCFE through an annual budget approved by the Technical Group. NCFE's activities are guided by a Core Committee which comprises one senior officer from each of the participating regulators. The mandate of the Core Committee is to give in-principle approval to the projects to be implemented by NCFE after going through funding needs of the activities/projects of NCFE which will then be placed before the Technical Group for approval.

Co-opting private and not-for-profit stakeholders in the national strategy's governing mechanisms

CASE STUDY: SOUTH AFRICA

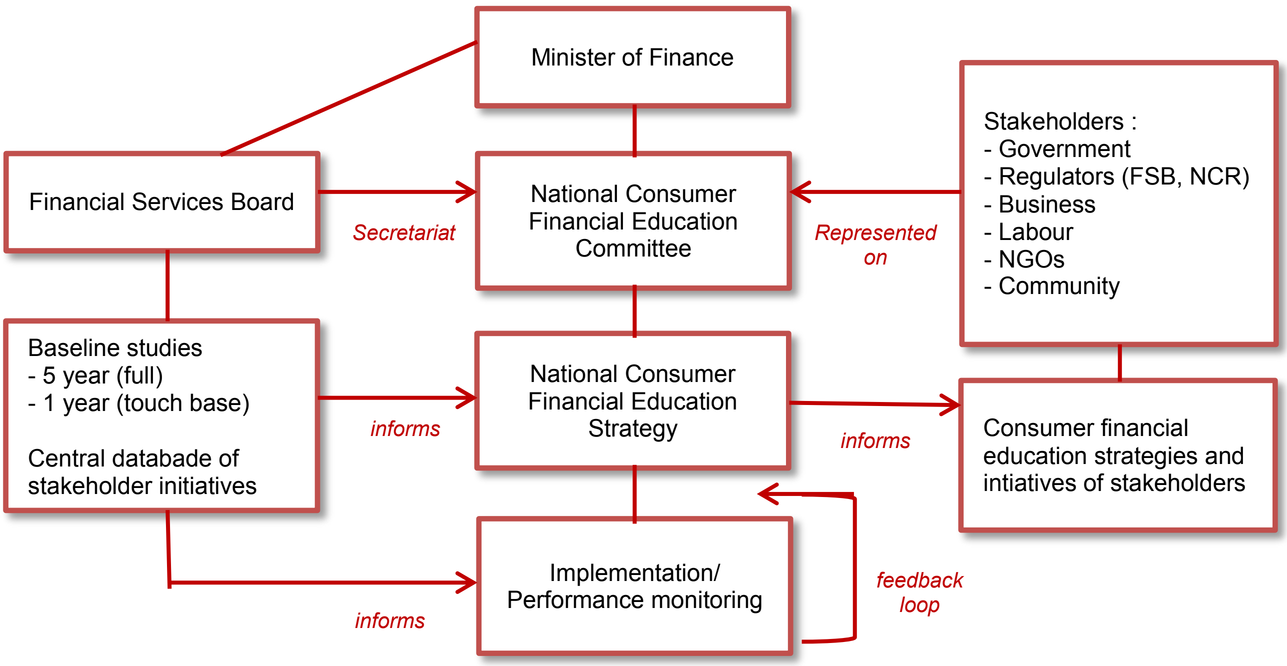
A mix of expertise to oversee the national strategy and ensure consistency with its objectives

In South Africa, the coordination of consumer financial education takes place through the National Consumer Financial Education Committee (NCFEC) which is a multi-stakeholder group that comprises of a broad mix of expertise drawn from labour, community-based organisations, financial institutions, other private sector entities and government. The Committee is chaired by the National Treasury and meets quarterly, with the Financial Services Board acting as secretariat to the Committee.

The Stakeholders represented on the NCFEC include the public and the civil sectors, as well as associations of the industry, but no financial for-profit institution has direct representation. These stakeholders include:

- Government Departments (Trade and Industry – National Treasury – Basic Education – Higher Education and Training – Provincial Consumer Affairs Offices Forum);
- Regulators (National Credit Regulator – South African Reserve Bank – Financial Services Board – National Consumer Commission);
- Ombudsman;
- Financial Industry Associations;
- Labour;
- NGOs; and
- Civil society and community.

Schematic representation of Governance



The mandate of the NCFEC is threefold and makes it the body in charge of the three key stages of a national strategy:

- Develop and review the national consumer financial education strategy;
- oversee its implementation; and
- monitor implementation through a central database.

The participation of stakeholders in the NCFEC is instrumental to the development and implementation of their financial education activities. Private and not-for-profit stakeholders as well as public institutions part of the NCFEC are required to develop and implement individual financial education strategies that are in line with the national strategy. In addition, they also have the duty to report the consumer financial education programmes and initiatives they have undertaken to the central database, in order to enable the performance monitoring of national strategy done by the Financial Services Board as Secretariat.

CASE STUDY: UNITED KINGDOM

A multi-stakeholders governance structure delivering collective impact in the 2015 revised strategy

The UK Financial Capability Strategy has been co-developed and is co-owned with stakeholders from across the public, private, and not-for-profit sectors. The revision of the strategy took place following the publication of a call for evidence on a new draft strategy and suggested reform in its main lines of actions.

The suggested revised strategy (Money Advice Service, 2015) will be led by a Financial Capability Board that will drive its implementation. This Board will not only lead implementation but also prioritise among the strategy's activities and monitor the quality of the interventions. Members of the Board will be selected among visible leaders and champions within the financial services and not-for-profit sectors that have significant commitment and leadership in relation to financial capability.

The Board will be supported by Action Groups, to be convened to take forward strategy development, and by Devolved Nation Forums, to address issues that are specific to England, Northern Ireland, Scotland and Wales. These Groups and the Forums will be composed of representatives from the Money Advice Service as well as from participating organisations.

The Financial Capability Board will benefit from the presence of a Financial Capability Secretariat, hosted by the Money Advice Service. MAS will also let its existing structures, notably the Debt and Advice Steering Group, the FinCap Education Funders Summit as well as the Research and Evaluation Group, feed into the activities of the Financial Capability Board. The Research and Evaluation Group will directly provide insights and evidence to the Action Groups and Devolved Nation Forums.

This governance structure has been designed based on partnership principles underlined by responses to the call for evidence, and is based on the concept of collective impact. This vision is based on elements defined as:

1. A shared mission between public/private/third sector;
2. A set of targets that the partners commit to;
3. Clearly defined roles and responsibilities;
4. Communication between all parties; and
5. A "backbone" or "anchor" organisation to focus on the partnership and make it work.

INVOLVEMENT OF PRIVATE AND NOT-FOR-PROFIT STAKEHOLDERS: MODALITIES AND GUIDING RULES

In a majority of cases, countries with a national strategy seek to involve private and not-for-profit stakeholders in the implementation phase of their strategy (and often also in its design phase). The involvement of these non-public stakeholders takes various forms. In some countries, it mainly happens through self-regulatory bodies and industry associations (for instance in Brazil, Japan and the Netherlands) as suggested by the OECD/INFE Guidelines for Private and Not-for-profit Stakeholders in Financial Education (OECD/INFE, 2014). In some others, a range of not-for-profit and private institutions have been involved in the development and implementation of the national strategy through its coordinating bodies and committees (e.g. in the Czech Republic, Estonia and Latvia). Not-for-profit stakeholders involved in financial education strategies particularly include consumer associations, media, trade unions, the academic community and universities as well as teachers associations and various (local and/or international) NGOS active in the field. They are primarily involved in the implementation of the strategy.

In some countries, these not-for-profit and private stakeholders are consulted and participate in the strategy through targeted consultations (for instance in Australia, Canada, India, Israel and New Zealand).

Countries can engage in official consultation processes on draft national strategy roadmaps (as in Canada, France and the United Kingdom), interviews with stakeholders including government departments (Lebanon, New Zealand and South Africa), or feedback from consumer bodies (Malaysia and South Africa) and the private sector. These consultation mechanisms can also become permanent, through the creation of consultative platforms and committees, depending on their level of formalisation within the national strategy administrative system.

When the involvement of private and non-public stakeholders takes place in the implementation phase, governmental authorities often provide general recognition of the importance of involving private and not-for-profit stakeholders while acknowledging the need to monitor private efforts to avoid conflicts of interest. Some governments have not provided explicit guidance/principles, but the importance of involving these stakeholders and/or the need to monitor private efforts to avoid conflicts of interest is mentioned in most national strategy roadmaps or similar documents. For instance, the national strategies in Australia, Canada, Colombia, the Czech Republic, El Salvador, Ireland, New Zealand, Portugal, Slovenia, Spain, and the United States mention the importance of involving the private and not-for-profit sectors and the need to coordinate financial education activities among stakeholders. Moreover, Colombia, Ireland and the United States also mention the importance of monitoring/avoiding conflicts of interest of financial sector stakeholders. However, dedicated codes of conduct to guide their financial education initiatives are still relatively rare (codes already exist in Brazil, the Czech Republic, Japan, Korea, Portugal, Indonesia, the Netherlands and South Africa).

The increasing attention of policy makers to the role played by the private sector in the implementation of national strategies, as well as the number of programmes that are undertaken especially by private financial institutions, has brought increasing attention to the need to develop guidelines and codes of conducts. This has gained additional momentum thanks to the work of the OECD/INFE and the development of the Guidelines for Private and Not-for-profit Stakeholders in Financial Education (see Lessons learnt below).

These codes are mostly meant to be applied on a voluntary basis. For instance, in a few countries codes should be complied with by stakeholders or within initiatives that are part of the national strategy however enforcement rules (such as fines) are an exception (as in Indonesia, where the Financial Services Authority, OJK, can give administrative sanctions to financial institutions that do not conduct financial education programmes as mandated by the local market conduct regulation, see case study below).

Given the variety of modalities of involvement, the codes of conduct, guiding principles or the certification mechanisms used are developed by different authorities and monitored to different extents. The existing codes, principles and certifications can be classified based on the authority developing them.

The instruments developed by public authorities are generally implemented within the framework of national strategies, as in the Czech Republic, Japan, Portugal, Indonesia and South Africa. Alternatively, they can be linked to specific projects, as in the Netherlands where specific guidelines are applied to the involvement of the financial sector in two of their main projects (Pension3day and National Money Week).

Not-for-profit stakeholders have also developed voluntary codes of conduct and accreditation systems that can play a role within the implementation of national strategies when they are recognised by public authorities and indicated as good practices to other national stakeholders. For instance, the personal financial education group (*pfeg*) in the UK carries out a Quality Mark accreditation system for resources developed for teaching financial education in schools (pfeg, 2011), and the *Jump$tart* Coalition in the US recommends a number of best practices when developing and/or selecting personal finance educational materials (Jump$tart Coalition, 2010).

KEY LESSONS LEARNT IN THE INVOLVEMENT OF PRIVATE AND NOT-FOR-PROFIT STAKEHOLDERS

In the context of its work on National Strategies for Financial Education, the OECD/INFE developed the Guidelines for Private and Not-for-profit Stakeholders in Financial Education (see Annex for the full text) to ensure that efforts of private and not-for-profit entities are appropriately coordinated, monitored and evaluated, and that conflicts of interest are adequately addressed. The Guidelines were completed through an extensive (internal and public) process involving interested parties and stakeholders and delivered to OECD bodies in charge of financial education and G20 in 2014. They are based on lessons learnt in the experience of countries working in co-operation with the private and not-for-profit stakeholders, as well as on further analysis conducted by the OECD/INFE Secretariat.

The Guidelines are, first, intended for public authorities who want to set a framework and define criteria for the involvement of private and not-for-profit stakeholders in national financial education strategies and programmes. They are also meant to be used by private and not-for-profit stakeholders involved in financial education to develop their own codes of conduct and guide their initiatives.

At this stage, they do not establish strict enforcement and compliance mechanisms and rather advocate an incentive-based approach.

The framework provided by the Guidelines is based on co-ordination between public, private and not-for-profit stakeholders, and in particular on the maximisation of consumers' interest through the integration of private and not-for-profit sectors initiatives within national strategies, partnerships, and co-ordination with national school curricula when applicable. The framework also addresses the need to manage potential conflicts of interest, through support for public sector initiatives, the indirect involvement of private institutions through national industry association or self-regulatory body, the development of codes of conduct as well as the clear distinction between commercial and educational activities.

The Guidelines also set key criteria (see Box 3.2) to guide the direct involvement of private and not-for-profit stakeholders in the implementation of financial education activities.

Box 3.2 Key criteria for the involvement of private and not-for-profit stakeholders in financial education (OECD/INFE Guidelines, 2014)

1. ***Objectivity***

   The content and format of any material and physical environments (e.g. locations dedicated to financial education delivery, such as learning centres, museums, etc.) used for financial education training and awareness initiatives that is developed, promoted or used by private and not-for-profit stakeholders should be balanced, impartial, unbiased, and not linked to their commercial priorities. In particular, materials should not be specific to a given product or provider

2. ***Quality of resources and trainers***

   - **Resources should be:**
     - tailored to national and local contexts, including social, economic, cultural and linguistic circumstances;
     - appropriate to the target audience's level of literacy, numeracy, financial knowledge, technological ability, learning styles and preferences; they should especially avoid technical jargon unless appropriate to the audience;
     - fair in addressing all relevant population segments (for instance in terms of gender, age, social background, culture, ability, and any additional factor depending on national/local circumstances and needs);
     - accurate, complete, up-to-date and of high quality; as well as
     - easily accessible to individuals.

   - **Trainers should:**
     - be trained and/or qualified in order to have adequate subject knowledge and confidence to teach financial literacy topics;
     - have adequate teaching skills to address the target audience, especially in the case of children and young people (within or outside schools); and
     - conduct any direct intervention in the classroom under the oversight of and in collaboration with the school teaching/management staff.

3. ***Monitoring and evaluation***

   The design of financial education initiatives involving private and not-for-profit stakeholders should preferably include a pilot/trial phase of the financial education programmes and related resources, before they are scaled up to the full audience of interest and rigorous and independent monitoring (process evaluation) and impact evaluation.

Case studies

The example of Brazil illustrates how the industry associations representing the entire private financial sector of a country can join forces to support public institutions in the implementation of the national strategy. In Brazil, the Financial and Capital Markets Association (ANBIMA), Brazil's major stock exchange (BM&FBOVESPA), the Association of Banks (FEBRABAN), and the Insurance Confederation (CNSEG) have set up a not-for-profit entity under Brazilian law to implement some programmes that are part of the national strategy. This not-for-profit entity operates under the supervision of National Committee for Financial Education (CONEF) and under the control of the Surveillance and Supervision Committee that public authorities have set up to monitor the implementation of the strategy.

The example of Australia and Canada show how compliance with the OECD/INFE Guidelines can explicitly be referenced as a pre-condition for the participation of the private sector in the national strategy's activities, or as a key criterion for inclusion in a national database of financial education resources and tools.

The following two case studies are a good indication of the importance of criteria and principles developed at the national level to guide the actions of private stakeholders in financial education activities. In both cases, the institutions in charge of the implementation of the national strategy have advertised them and encouraged their use. In addition, in both cases the criteria and principles demand the content of programmes implemented by private stakeholders to be in line with the objectives of the strategy as identified by public institutions.

In Japan, the Committee for the Promotion of Financial Education, established in the Central Council for Financial Services Information (CCFSI) to promote financial education through the CCFSI's network, drafted detailed guidelines. These are based on consistency with the core competencies levels defined in the context of the national strategy as well as with the principles of neutrality and fairness. In Portugal, the Principles for Financial Education Initiatives developed in the context of the national plan also demand that the initiatives are in line with the objectives of the Plan, and ensure the prevention of conflicts of interests.

🕮 CASE STUDY: BRAZIL

A public-private partnership in action

In order to foster civil society participation and allow private and public sources of funding, The National Committee for Financial Education (CONEF) established a Partnership Agreement with Brazil's Association of Financial Education (AEF-Brasil). AEF-Brasil is a partner in the national strategy (ENEF) and has responsibility for planning, structuring, developing, implementing, and administering some of ENEF's transversal initiatives. AEF-Brasil was founded by the Brazilian Financial and Capital Markets Association (ANBIMA), Brazil's major stock exchange (BM&FBOVESPA), the Brazilian Association of Banks (FEBRABAN), and the Brazilian Insurance Confederation (CNSEG).

AEF-Brasil is a non-governmental, not-for-profit specific purpose entity, not subordinated to the structure of any Ministry in order to ensure balanced management among markets and interested sectors. Although AEF-Brasil is maintained by the four founders mentioned above, funds for financial education projects must be raised from other sources. Whereas AEF-Brasil deals with implementation, it is CONEF's responsibility to define plans, programmes, actions, and to coordinate ENEF. The Partnership Agreement with CONEF is valid for five years and renewable. According to this Agreement, CONEF must present its guidelines to AEF-Brasil annually. In response, AEF-Brasil must submit its annual Work Plan to CONEF for approval.

AEF-Brasil's responsibilities include raising funds for ENEF projects, and developing content and social technologies aimed at the general public. The entity may also be responsible for directly implementing financial education actions and programmes, prioritising actions in accordance with the guidelines established by CONEF.

This Partnership Agreement is monitored by a Surveillance and Supervision Committee (*Comitê de Acompanhamento e Fiscalização* – CAF) created by CONEF. CAF must report to CONEF every semester and it may issue alerts to AEF-Brasil and CONEF if there is a breach in any provision of the Agreement or in AEF-Brasil's annual Work Plan. In that case, CAF may also determine corrective actions. It is formed by five members appointed by the four financial system regulators, plus the Ministry of Finance.

In addition to the partnership established with AEF-Brasil, CONEF is entitled to develop other plans, programmes, actions, and initiatives in partnership with any other public, private, or non-governmental relevant organisations. Moreover, such horizontal partnerships do not impede CONEF's members from developing sectorial financial education programmes in the scope of their core-business activities.

The Central Bank of Brazil (BCB), for example, one of CONEF's rotating presidents and the institution permanently responsible for CONEF`s Executive Secretariat, launched its Financial Citizenship Programme, *Cidadania Financeira* (see also case study "Brazil: the use of technology to address the needs of poor household recipients of social programmes" in chapter IV). *Cidadania Financeira* encompasses three thematic areas: money management, consumers' relationship with financial service providers, and financial service providers' relationship with financial consumers. To implement *Cidadania Financeira*'s projects and initiatives, the Central Bank has established strategic partnerships to reach the following selected target groups: consumer protection bodies (partnership with Ministry of Justice's National Secretariat for the Consumer), beneficiaries of conditional fund transfer programmes (partnership with the Ministry of Social Development Hunger Alleviation, the Confederation of Rural Credit Central Cooperatives, and the Brazilian Network of Community Banks), cooperative affiliates and collaborators (partnership with the National Cooperative Learning Service and the Brazilian Cooperative Organisation), individual and micro entrepreneur (partnership with the Brazilian Micro and Small Business Support Service).

Lessons learnt in implementing the strategy through AEF-Brasil

The implementation of the programmes of financial education in schools has highlighted some specific lessons. AEF-Brasil, under CONEF's coordination, has been implementing ENEF's horizontal actions, among which the financial education programmes in High Schools and in Elementary Schools. In both, the fundraising process has taken longer than initially expected. Such processes have ranged from 4 to 14 months. Furthermore, High School education in Brazil is decentralised among 27 State Education Secretariats, and negotiations to implement the programme are carried individually. Education State Secretaries may change frequently due to the political process, and this adds difficulties to implementing the programme. The same applies to municipalities, of which there are more than 5000 in Brazil. The implementation of an online training platform has been shown to mitigate these issues to some extent, but getting stakeholders to know and use the platform has been challenging.

CAF's constant monitoring has emphasised the importance of AEF-Brasil's continuous reporting to CONEF and where it stands regarding contracts, sponsorships, materials produced, website updates, and events participation and/or organisation.

The use of the OECD/INFE Guidelines for Private and Not-for-profit Stakeholders in Financial Education

🕮 CASE STUDY: AUSTRALIA

Recognition of the OECD/INFE Guidelines by the National Financial Literacy Strategy supporters

In Australia, the Australian Securities and Investments Commission (ASIC) has developed a network of organisations that actively support the objectives of the national strategy through the implementation of their programmes. These organisations are publicly listed in a Supporters section on the website (www.financialliteracy.gov.au/supporters) that contains a schedule outlining work being undertaken in support of the Strategy across the government, business and industry, education, community and not-for-profit sectors. This is in accordance with one of the principles underpinning the implementation of the Strategy, according to which improving financial literacy is a shared responsibility across the Australian government, business, community and education sectors.

ASIC specifically states that, to be included as a srategy supporter, an organisation must be committed to delivery of financial literacy initiatives that are:

- consistent with the Strategy's core principles;
- aligned with one or more of the strategic priorities in the 2014 action plan; and
- balanced, impartial, unbiased and not linked to an organisation's commercial priorities, in accordance with the OECD/INFE guidelines.

🕮 CASE STUDY: CANADA

Criteria for inclusion in an online resource database

The Canadian Financial Literacy Database, managed by the Financial Consumer Agency of Canada (FCAC), provides Canadians with a national online database, in English and French, of personal finance calculators or tools, financial education programmes, videos, books, articles, workshops, worksheets, games, other resources and information about events, etc. aimed at creating awareness about financial literacy for Canadians. The database is searchable in a variety of ways (e.g. by resource type, by language, by topic, by target audience, etc.) to allow users to find the right information as easily as possible. It also serves as a networking tool, helping like-minded organisations to connect and build partnerships.

Resource information is submitted to FCAC by external stakeholders (both public and non-public organisations) via an online tool for inclusion in the database. Submissions are accepted if they meet the terms of use and the chosen eligibility criteria based on the OECD/INFE Guidelines for Private and Not-for-profit Stakeholders in Financial Education.

Only resource information that FCAC determines in its sole discretion meet the following criteria will be published in the Database:

- it contributes to the financial literacy of Canadians;
- it is available in English or French or both;
- it is available to the general public (for free or by paying a reasonable fee); and
- it does not promote the sale of a particular product or service or favour a particular product or service over others (i.e. solely commercial products will not be included).

🕮 CASE STUDY: JAPAN

Criteria for neutrality of financial education programmes

The "Committee for the Promotion of Financial Education" worked on the development of criteria to ensure neutrality and fairness when conducting financial education activities. To be more precise, the criteria are based on the following:

- Content: the financial educational activities by related organisations should be based on the contents of "Minimum Financial Literacy for the public", as defined by Study Group on Financial Education;
- Neutrality and Fairness: specific financial products (including financial product types) or business with specific financial companies must not be recommended when conducting financial education programmes.

Detailed guidelines

1. In lecture meetings, seminars, and delivery classes in schools (i.e. classes taught by guest teachers), it is not allowed to talk about and distribute documents about specific financial products (including financial product types) or business with specific financial companies. Lecturers should not provide materials from specific financial companies to the participants or students.
2. In lecture meetings, seminars, and delivery classes in schools, it is not allowed to talk about and distribute documents advising not to deal with specific financial products or specific financial companies. However, it is possible to bring attention to financial companies or products that have been deemed in breach of existing laws and regulations, and to recommend not dealing with them.
3. Financial education lectures or programmes should not be held back-to-back with promotional activities offering specific financial products or business with specific financial companies.
4. Teaching materials used in financial educational activities are clearly separated from materials for business, and as a rule, names and logos of specific financial companies should not be printed on these teaching materials. If it is inevitable to print them on teaching materials, it should be added that that is not a recommendation to deal with them.
5. Participation in lectures, meetings, seminars, and delivery classes in schools should not be restricted to those who have customer relations with specific financial companies or have purchased a specific financial product.
6. When selecting participants of lecture meetings or seminars or schools for delivery classes, if interested participants exceed available places, appropriate methods such as first-come-first-served or a lottery should be used.
7. Lecture meetings, seminars, and delivery classes in schools should be held with no fees whenever possible. If collecting fees from participants is absolutely necessary, those should be kept as low as possible.
8. The personal information received in the process of holding lecture meetings, seminars and so on, should not be used for profit or passed on to financial institutions.

🕮 CASE STUDY: PORTUGAL

The Principles for Financial Education Initiatives

The Portuguese National Plan for Financial Education is led by the National Council of Financial Supervisors and it provides a framework for financial education initiatives developed by a large number of entities. The 'Principles for Financial Education Initiatives' (National Council of Financial Supervisors, 2012) were published to guide and frame the initiatives of all entities willing to develop financial education initiatives within the scope of the National Plan.

The Principles guarantee that the initiatives are in line with the objectives and quality standards of the National Plan and define requirements aimed at preventing conflicts of interest arising from the involvement of financial institutions in financial education initiatives.

The Principles define the following criteria of quality:

- The principles of accuracy and timeliness establish that information in financial education initiatives shall be accurate, complete, up-to-date and relevant;
- The principle of impartiality states that information in financial education initiatives shall be impartial, objective and free of value judgments;
- The language and content of financial education initiatives shall be pedagogical and consider the characteristics of the targeted group.

The objective of the Principles regarding the preventing of conflicts of interest is approached by the above principle of impartiality, which further establishes that financial education initiatives shall not be used as marketing or advertising vehicles and shall not make references to specific financial institutions or particular financial products or services. Additionally, the Principles define conditions for the use of logos and brands, which must aim solely at identifying the promoting entities and have size limits. Where financial institutions participate in the initiatives, the logo or brand shall only be used together with those of the respective representative associations; therefore, financial institutions shall develop the initiatives jointly with the sector associations.

The financial education initiatives taken within the framework of the National Plan are disseminated through the Plan's website (www.todoscontam.pt) and must comply with the Principles. Although the National Plan does not explicitly confer a 'certification' or a 'quality stamp' on financial education initiatives, their disclosure in the website constitutes an implicit validation of quality.

The Principles were also formally acknowledged by the Ministry of Education and Science, which is not in favour of having financial institutions developing financial education projects in schools; therefore, the Ministry disseminated these Principles among all schools as a guide to develop financial education initiatives in school environment.

Other examples of the application of the Principles are the projects submitted to the Financial Education Competition that rewards the best financial education projects in schools and the financial education initiatives developed in the Financial Literacy Day (31 October), which must observe these quality standards.

Table 3.2 Leading authorities and co-ordinating bodies in G20 economies with a fully-fledged national strategy

<table>
<tr><td>AUSTRALIA</td><td>

Leading authority: Australian Securities and Investments Commission (ASIC)

- *Responsibilities:* Among statutory objectives is “promote confident and informed participation by investors and consumers in the financial system”. Since 2008 ASIC has been the Government agency with national responsibility for financial literacy in Australia.

Advisory body:

ASIC is supported by the **Australian Government Financial Literacy Board**: a non-statutory body that provides strategic advice to government and ASIC on financial literacy issues (existed prior to the implementation of the strategy).

- *Membership:* Respected leaders from the business, education and community sectors who volunteer their services and expertise. Members are appointed by the Assistant Treasurer and Minister for Finance.

</td></tr>
<tr><td>BRAZIL</td><td>

Development body: design

Committee for the Regulation and Oversight of Financial, Capital, Insurance, Pension Funds and Capitalisation Markets (COREMEC), through a dedicated Working Group.

- *Membership:* Central Bank of Brazil, Brazil’s Securities and Exchange Commission (CVM), Brazil’s National Superintendence for Pension Funds (PREVIC), Brazil’s Superintendence of Private Insurance (SUSEP).

Leading authority and co-ordinating body: monitoring and oversight of implementation

National Committee on Financial Education (CONEF)

- *Membership*: A Deputy-Governor of the Central Bank, President of the Securities and Exchange Commission of Brazil (CVM), Superintendent-Director of Brazil’s National Superintendence for Pension Funds (PREVIC), Superintendent of Brazil’s Superintendence of Private Insurance (SUSEP), Executive-secretary of the Ministry of Education (MEC), Executive-secretary of the Ministry of Finance (MF), Executive-secretary of the Ministry of Social Security (MPAS), Executive-secretary of the Ministry of Justice (MJ), four representatives of civil society: ANBIMA, BM&FBOVESPA, FEBRABAN, and CNSEG.
- *Responsibilities*: defines plans, programmes, actions, and coordinates ENEF’s implementation
- *Sub-committees*: Pedagogic Support Group; Monitoring and Fiscal Committee; Permanent Commission.

Implementing bodies:

CONEF members

Brazil’s Association of Financial Education (AEF- Brasil)

- *Membership*: Associations representing banking (FEBRABAN), insurance (CNSEG), and capital market (ANBIMA) institutions, plus the exchange BM&FBOVESPA
- *Responsibilities:* in partnership with CONEF it is responsible for conceiving, planning, structuring, developing, implementing and administering national strategy initiatives.

</td></tr>
<tr><td>CANADA</td><td>

Leading authority and leader:

Financial Consumer Agency of Canada and the Financial Literacy Leader

Advised by the **National Steering Committee on Financial Literacy.**

- *Membership*: drawn from public, private and non-profit sectors engaged in financial education.
- *Responsibilities*: advise the Leader on the development and implementation of the plan. Its members act as champions within the sectors they represent, ensuring a coordinated approach and alignment with the broad objectives.

</td></tr>
</table>

INDIA	**Co-ordinating and leading body – development and implementation phase:** **Financial Stability and Development Council (FSDC)** chaired by the Union Finance Minister, Government of India, with heads of all financial sector regulators as members. **Technical Group on Financial Inclusion and Financial Literacy of the FSDC-SC**: headed by the Deputy Governor of the Reserve Bank of India (RBI) and includes representatives from all financial sector regulatory authorities and Ministry of Finance, Government of India. This group co-ordinates the efforts of the financial sector regulators in the field of financial education. **Implementation body:** **National Centre for Financial Education (NCFE):** an institute specially created with participation and resources from all financial sector regulators which will report to the FSDC Technical Group. A Core Committee has been constituted for focused and regular interaction with all stakeholders, for faster implementation of the national strategy.
INDONESIA	Co-ordination among the **Financial Services Authority** (OJK), **Bank Indonesia**, the **Ministry of Education and Culture**, and the **Ministry of Manpower**.
JAPAN	**Leading and coordinating authorities:** **Financial Services Agency** (JFSA) and **Bank of Japan** (through the Central Council for Financial Services Information, CCFSI) • *Membership of the CCFSI:* representatives of financial and economic organisations, media, consumer groups, etc., experts, and the Deputy Governor of the Bank of Japan, with the director-generals of related authorities, including the FSA, and the executive director of the Bank of Japan taking part as advisers (Secretariat of the CCFSI: Public Relations Department, Bank of Japan).
KOREA	**Leading authority: Financial Service Commission** **Co-ordinating body: Financial Education Council** • *Membership*: Vice-Chairman of the Financial Services Commission as Chair, public organisations (Financial Supervisory Service, Korea Deposit Insurance Corporation, Credit Counselling & Recovery Service), 7 financial sector groups (Korea Federation of Banks, Korea Financial Investment Association, General Insurance Association of Korea, Korea Life Insurance Association, Credit Finance Association of Korea, Korea Federation of Saving Banks, National Credit Union Federation of Korea), private organisations (Korea Council for Investor Education, Financial Quotient Council, Korea Investors' Protection Foundation). • *Main responsibilities*: a non-standing body, will co-ordinate all authorities involved in financial education and co-ordinate basic policy directions for feasible financial education, examine how financial education is provided by each institution and continue to upgrade the Financial Education Activation Plan. It also examines the current status of financial education in Korea and presents policies on how to build the infrastructure by drawing up guidelines necessary for national financial education.

MEXICO	**Leading authority: Ministry of Finance and Public Credit**
	Co-ordinating body: The Committee for Financial Education (CEF)
	• *Membership*: Chaired by the Ministry of Finance and Public Credit and composed of financial authorities.
	• *Responsibilities*:
	    ○ To define the priorities and formulate the guidelines of the financial education public policy;
	    ○ To prepare the National strategy for financial Education; and
	    ○ To plan the activities of the National Financial Education Week.

RUSSIAN FEDERATION	**Leading authority: Ministry of Finance** **Supervisory and coordinating body:** **The Interagency Project Commission (IAPC)** • *Membership:* created by the Ministry of Finance and chaired by the Deputy Minister of Finance. Members also include the Central Bank, the Ministry of Education, the Ministry of Economic Development, the Consumer Protection Agency. • *Responsibilities:* it supervises the overall project implementation and provides strategic oversight of the implementation of specific project activities A Working group of the Ministry of Finance provides operational management support. The International Expert Board provides expertise and support to the IAPC.
SOUTH AFRICA	**Leading implementing authorities: National Treasury** **Financial Services Board (FSB)**, also acts as Secretariat to the National Consumer Financial Education Committee (NCFEC) **Co-ordinating body: National Consumer Financial Education Committee (NCFEC)** • *Membership*: all regulators (National Credit Regulator, South African Reserve Bank, Financial Services Board, National Consumer Commission), Government Departments (Trade and Industry, National Treasury, Ministry of Education, Provincial Consumer Affairs Offices Forum), Consumer representatives, Ombudsmen Offices, Industry Bodies and Associations. • *Main responsibilities*: convened by National Treasury for the purposes of coordinating financial education initiatives and jointly finalising the national policy and crafting national strategy
TURKEY	**Leading authority: The Capital Markets Board (CMB)** *Responsibilities:* co-ordinates implementation **Co-ordinating body: Financial Stability Committee** • *Membership:* Deputy Prime Minister for Economic and Financial Affairs as Chair, Undersecretary of Treasury, Governor of Central Bank of The Republic of Turkey, Chairman of Banking Regulation and Supervision Agency, Chairman of Capital Markets Board of Turkey, Chairman of Savings Deposit Insurance Fund • *Responsibilities*: Supervises the implementation of the Financial Access, Financial Education and Financial Consumer Protection Strategy and Action Plans; the Financial Education Action Plan is implemented under the co-ordination of the Capital Markets Board of Turkey while the Financial Consumer Protection action plan is implemented by the Banking Regulation and Supervision Agency.
UNITED KINGDOM	**Leading authority:** **Money Advice Service (MAS)** An independent body created by the UK Government. • *Responsibilities*: to enhance the nation's financial capability and provide generic and unbiased financial advice.

UNITED STATES	**Co-ordinating body:** **Financial Literacy and Education Commission (FLEC)** • *Membership:* Secretary of the Treasury as Chair, Director of the Consumer Financial Protection Bureau as Vice-Chair (following the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010), Board of Governors of the Federal Reserve System (FRB), Commodity Futures Trading Commission (CFTC), Consumer Financial Protection Bureau (CFPB), Department of Agriculture (USDA), Department of Defense (DoD), Department of Education (ED), Department of Health and Human Services (HHS), Department of Housing and Urban Development (HUD), Department of Labor (DOL), Department of Treasury (Treasury), Department of Veterans Affairs (VA), Federal Deposit Insurance Corporation (FDIC), Federal Emergency Management Agency (FEMA), Federal Trade Commission (FTC), General Services Administration (GSA), Office of the Comptroller of the Currency (OCC), National Credit Union Administration (NCUA), Office of Personnel Management (OPM), Securities and Exchange Commission (SEC), Small Business Administration (SBA), Social Security Administration (SSA), and The White House – Domestic Policy Council. • *Responsibilities:* develop the national strategy and co-ordinate resources and activities among the Commission's member agencies. • *Sub-committees:* Children and Youth Committee, Post-secondary Education Committee, Early Career/Planning for Retirement Committee, Research and Evaluation Subcommittee.

CHAPTER 4. SETTING AND ACHIEVING OBJECTIVES, EVALUATING AND FUNDING THE NATIONAL STRATEGY

The OECD/INFE High-level Principles on National Strategies for Financial Education recommend that a national strategy framework encompass the design of a tailored roadmap including an overall and cross-sectoral vision as well as realistic, measurable and time-bound objectives.

There are several challenges associated with this phase. Roadmaps and action plans for a national strategy must define what is a realistic objective that can be measured and widely agreed. The roadmap should also plan an overall impact assessment mechanism, employing a variety of quantitative and qualitative instruments, from financial literacy indicators and programme evaluation evidence to consultation with implementing stakeholders. In addition, identifying and securing appropriate resources can require pooling budgets of different public authorities, defining appropriate frameworks for the contribution (financial or in-kind) of private institutions, or even changing financial sector regulation to define levies on the industry. This is made even more challenging as resources must be sustainable over time, given the long-term nature of financial education policies.

This chapter looks at the evolution in the design of roadmaps and action plans and how their implementation is being evaluated and funded. It provides selected lessons learnt for each process based on experiences of countries with national strategies at an advanced stage of implementation.

FROM POLICY TO ACTION: ROADMAP AND ACTION PLAN

The development and implementation of national strategies can be set out in roadmaps and/or in action plans or a combination of the two. The distinction between the two guiding documents might not apply to all national strategies, as objectives are set differently and by a different number/range of institutions and stakeholders depending on national circumstances.

The national strategy documents that are approved by public authorities and often showcased on national strategy websites can be described as roadmaps. These are designed in almost all countries with a national strategy in development or implemented. As mentioned in the OECD/INFE High-level Principles (OECD/INFE, 2012b), roadmaps are aimed at setting overall agreed priorities, medium- and long-term objectives, as well as target audiences, defining governance mechanisms and establishing methods for the overall impact assessment of the strategy. They can also identify the appropriate resources for the national strategy.

Roadmaps are often drawn in co-operation with stakeholders from the private and not-for-profit sectors, as well as the input of relevant public authorities involved in the national strategy. This can be achieved through inter-sectoral meeting within the public sector, public consultation, as well as by assigning different thematic areas of the roadmap to working groups composed of private sector organisations under the supervision of a government representative.

In addition to roadmaps, some countries have also developed, and made public, more detailed operational plans that are implementation-oriented by nature. These are often defined as action plans. A limited number of actions plans to implement the national strategy have been established so far (12 among the economies part of the OECD/INFE survey), consistent with the smaller group of economies that have entered the implementation phase of the strategy.

These action plans, in addition to the elements of a roadmap, also provide more precise targets and/or benchmarks to be met or expected outcomes of these interventions. In Estonia for example, the action plan sets a target for the number of people shopping around before buying a financial product, which should reach 55% in 2020 compared to 44% in 2012, based on national measurement survey results. In other cases, as in Israel, the action plan sets out objectives such as a 10% decrease in overdrawn bank accounts, or a 10% increase in bank accounts monitoring frequency. Similar quantitative objectives and benchmarks can be found in New Zealand (see case study below).

Action plans also set out priorities and targets for the implementation of the strategy and identify indicative actions for the institutions (both public and from the not-for-profit and private sector) contributing to the implementation of the strategy.

Case studies

The three case studies below highlight the different nature of roadmaps and action plans. In the first one, the Financial Services Agency of Japan convened relevant public authorities and experts to redefine the objectives of the strategy, to identify the core competencies for target groups, as well as to select sources of funding for the activities.

New Zealand is an example of an action plan that indicates long-term objectives to be reached, the actions to be conducted in order to reach them, as well as specific quantitative goals for each of the main priorities of the national strategy. These goals are set against benchmarks based on the data collected through the national financial literacy measurement survey. The case of the United States is a useful example of a roadmap drafted for a specific target group, young people: starting from an agreed priority of the strategy, i.e. improving the financial literacy of young people, the document sets medium and long term objectives around key areas and identifies the expected results.

CASE STUDY: JAPAN

The Report of the Study Group on Financial Education, a roadmap for the National Strategy

In November 2012, the Financial Services Agency of Japan (FSA) established the "Study Group on Financial Education" within the Financial Research Center, involving experts, related ministries/governmental offices and other organisations such as the Central Council for Financial Services Information (CCFSI). The Study Group held seven meetings up to April 2013.

The Study Group drafted the future course of action for financial education in the country, taking into consideration behavioural aspects, and discussed the definition of core competencies (a common minimum standard of financial literacy). The "Study Group on Financial Education" published its report in April 2013. This report acted as a roadmap to guide the implementation of financial education policies in Japan.

This report highlighted the following points:

- First, since there were various institutions promoting financial education in Japan, it was necessary to implement the initiatives more efficiently and more effectively by sharing a common minimum level of financial literacy to be attained, securing the necessary budget for the various activities, and avoiding the duplication of efforts among those institutions.
- Second, for the future promotion of financial education, it was necessary for related authorities and especially the FSA to play a more substantial role.
- Finally, for that purpose, it was appropriate to set up a committee ("Committee for the Promotion of Financial Education") by using the extensive national territorial network of the CCFSI to promote financial education.

CASE STUDY: NEW ZEALAND

The use of quantitative goals and benchmarks in the National Strategy action plan

The New Zealand 2015 National Strategy for Financial Capability (Commission for Financial Capability, 2015) makes clear recommendations to all interested sectors on the best ways to achieve the greatest impact in the implementation of the strategy. The Commission for Financial Capability (CFFC) prepared a draft discussion document on which it sought feedback from stakeholders, incorporating some of their feedback into the final National Strategy document.

This document acts as an action plan to implement the strategy, with the identification of five activity streams: talk, learn, plan, debt-smart and save/invest. For each of these streams, the document sets clear objectives to be attained in order to deliver the desired outcomes. In some cases, the document identifies clear quantitative goals to be reached by 2025, and sets them against precise benchmarks.

The example of the promotion of the activity stream "long-term savings and investments"

For the activity stream "everyone saving and investing", the document sets out the following outcomes to be attained:

- more people save and invest for the short, medium and long term;
- more people actively engage with and contribute to KiwiSaver (a national voluntary long-term savings scheme); and
- more people save and invest in a wide range of assets.

The document explains the benefits associated with these outcomes, such as an increase in individual and household net worth and decrease in unproductive debt, as well as challenges, such as continued reliance on property as a saving vehicle. It then identifies actions to be conducted.

Actions	Goals 2025	Benchmarks
Conduct campaigns to drive more saving and investing	90% of people put money into short, medium, and long-term savings and investments	Up from 74% (Financial Behaviour Index)
Run investor education programmes	80% of investors invest in assets in addition to KiwiSaver, such as bonds, shares and managed funds	Up from 66% (Financial Behaviour Index)
Promote key investing principles via workplace financial education programmes	100% of current and potential investors understand key investment principles	Benchmark to be finalised (Financial Knowledge and Behaviour Survey)
Conduct campaigns to encourage KiwiSaver members to actively engage with and contribute to KiwiSaver	90% of KiwiSaver members qualify for the member tax credit	Inland Revenue KiwiSaver Evaluation
Promote community saving and investment schemes among Māori	90% of the largest Kiwi offer saving schemes	Like that offered by *Ngai Tahu* through the *Whai Rawa* scheme

Finally, the action plan also includes benchmarks against which to measure progress, with explicit links made to the evidence informing the implementation of the national strategy.

CASE STUDY: UNITED STATES

A roadmap for a specific target group, young people

In October 2012, the United States Financial Literacy and Education Commission[10], committed to helping Americans by making Starting Early for Financial Success a strategic focus to make improvements in the financial literacy of young people. The Commission selected this strategic focus, recognising that the financial stability of young people – and their families – is vital to the overall strength of the United States' economy.

The strategic focus is intended to serve as a platform for achieving a primary purpose of the Commission – to better coordinate resources and activities among the Commission's member agencies[11]. A shared strategic focus should help Commission member agencies better coordinate activities, achieve greater effectiveness and efficiency, leverage resources, and identify areas where additional resources might be needed. The Commission identified specific outcomes to ensure accountability and to better assess the Commission's impact from its efforts.

Key areas and objectives identified were the following:

Key areas	Objectives
American youth are financially capable by the time they reach adulthood.	Increase the financial knowledge, skills, confidence, and access of youth by the time they leave school by ensuring children (1) are effectively taught financial basics by informed and confident parents, teachers, or others, and (2) have access to basic financial products and services, such as savings accounts as a way to promote a lifetime of financial capability.
Higher education is within reach to more Americans, and is understood and evaluated as an investment.	Increase the number of students who are sufficiently prepared to evaluate the best way to pay for higher education by helping students, potential students, and their families wisely use tools and information to make good decisions about paying for higher education.
Americans start to plan and take action early in their careers for long-term financial well-being.	More young adults and newly-employed workers are better prepared to (1) manage short and long-term expenses and investments and (2) plan, save, and invest for retirement and other long term goals.
Learning about and assessing the effectiveness of financial capability through research and evaluation is an on-going priority.	Identify ongoing support for research and evaluation that implements the Commission's Research Priorities, both as stand-alone research and integration into other research.

Expected Outcomes

As a result of the Commission's strategic focus on Starting Early for Financial Success, a number of outcomes have been identified that impact the financial literacy and decision making of young Americans. The Commission, its member agencies, and other partners are expected to see the following results of their work:

- More financial institutions will develop plans to open savings accounts for children, through venues such as school-based bank or credit union programmes, to help children build sound financial management habits.
- More federally funded social service providers will be able to connect their low-income clients to resources on financial education and asset-building. This will help the clients better manage their financial resources.
- Through summer or other employment programmes, more communities will offer opportunities for youth to obtain financial education and access to products and services to help them manage their money safely and affordably, such as direct deposit into a bank or credit union account.
- More school counsellors and others will be able to better guide students and their families to make sound

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10 The Commission was established under the Fair and Accurate Credit Transactions Act of 2003. It is chaired by the Secretary of the Treasury or designee and currently includes representatives of 21 federal agencies, listed below, and the White House. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 provided that the Director of the CFPB would serve as the Vice Chairman of the Commission.

11 Commission members: Office of the Comptroller of the Currency (OCC); Board of Governors of the Federal Reserve System (FRB); Federal Deposit Insurance Corporation (FDIC); National Credit Union Administration (NCUA); Securities and Exchange Commission (SEC); Departments of Treasury, Education (ED), Agriculture (USDA), Defense (DoD), Health and Human Services (HHS), Housing and Urban Development (HUD), Labor (DOL), and Veterans Affairs (VA); Federal Trade Commission (FTC); General Services Administration (GSA); Small Business Administration (SBA); Social Security Administration (SSA); Commodity Futures Trading Commission (CFTC); Office of Personnel Management (OPM); Consumer Financial Protection Bureau (CFPB); Federal Emergency Management Agency (FEMA) and The White House Domestic Policy Council.

financial decisions about higher education choices.

- More institutions of higher education will plan to expand financial education provided to students.
- More borrowers of federal student loans will become aware of and consider repayment options to help them manage their debt.
- More workers in the federal government and beyond will have access to financial education in the workplace to help them make informed choices to manage their current needs and debt and plan and save for their retirement.

All of these activities will be informed by, and further inform, effective practices for promoting financial literacy to help more Americans build a sounder financial future.

MONITORING AND EVALUATING THE NATIONAL STRATEGY

Monitoring and evaluation of the overall national strategy is essential from an accountability perspective, to provide valuable evidence to improve financial education interventions and policies and contribute to their sustainability on the longer term. Two thirds of countries (for which information is available) are monitoring the implementation of their national strategy. A smaller group reports planning to evaluate or having already evaluated their national strategy, consistent with the relatively modest (but growing) number of countries that have reached the implementation phase of the strategy.

The strategy is ideally evaluated *quantitatively*, through surveys, and *qualitatively*, through a range of tools including consultation with stakeholders and collection of evaluation evidence from programme deliverers.

The main instrument used to *quantitatively* monitor progress is repeated waves of a financial literacy survey and secondary analysis on the data collected (or where they do not exist, repeated waves of a household survey). This allows public authorities to track progress on a population-wide scale and observe changes among specific target groups (see also case studies in Chapter II).

The assessment of financial literacy needs and gaps can be instrumental in refining priorities and monitoring the implementation and the effectiveness of the national strategy and/or of its specific programmes and policies (see Chapter I). This can lead to the development of financial literacy indicators or trackers, whose results are used as a supplement to national measurement surveys, and at more frequent intervals, in order to track the evolution of financial literacy and behaviours and help public authorities to guide the implementation of their national strategies. This is especially the case in the countries that have been implementing national strategies for longer and have more data available (e.g. Australia, New Zealand and South Africa, see the Box 4 below).

Box 4.1 The development of financial literacy and financial behaviour indicators to monitor the overall national strategy

Public authorities can monitor the implementation of the national strategy through financial literacy measurements and related qualitative data collection and analysis. The development and use of financial literacy indicators is a recent trend. Financial literacy indicators are increasingly used notably by the institutions that have a longer record in implementing financial education policies, as well as in-house research capabilities and/or easier access to external polling agencies.

These indicators are not meant to substitute the use of national measurement surveys. They are rather intended to supplement existing information on financial literacy levels provided by nation-wide measurement exercises. They are also intended to provide public authorities with data to track changes in financial literacy knowledge, attitudes and behaviours, in order to inform and assess the effectiveness of the national strategy and of its main programmes.

Australia

In 2014, the Australian Securities and Investments Commission (ASIC) initiated some new research, the Australian Financial Attitudes and Behaviour Tracker, to track changes and trends in some key financial attitudes and behaviours at six-month intervals (ASIC and Sweeney Research, 2014). The research is being conducted via a 20-minute quantitative online survey of over 1300 Australian adults. The questions cover a range of behaviours related to personal finances (e.g. budgeting, saving, borrowing, managing debt, short and long-term planning and investing), and are aligned to the five behavioural indicators identified in the 2011 ANZ Survey.

The benchmark report, covering the period from March to August 2014, was released in December 2014. It identifies a range of factors that are associated with particular financial attitudes and behaviours, including life stage, gender, household composition, retirement and income. Findings from this and future waves of the survey will inform ASIC's efforts to promote confident and informed consumer and investor participation in the financial system, as well as contribute to the research, measurement and evaluation of Australians' financial literacy levels and well-being under the 2014-17 Strategy.

New Zealand

Beginning in 2011, the Commission for Financial Capability (CFFC) commissioned a shorter (ten minute) online survey which has been carried out every six months to derive a “Financial Behaviour Index” (FBI)[12]. The entire set of FBI questions was incorporated in the 2013 Financial Knowledge and Behaviour Survey as a behavioural component, meaning that those questions have now been surveyed using both the face-to-face and on-line methods.

The Financial Behaviour Index was developed out of recognition that the larger survey (see Case Study “New Zealand: evolution from the measurement of knowledge to the analysis of behavioural elements”) had a four-year cycle and given rates of change, more frequent monitoring was required. The Index tracks movements in core financial behaviours and (based on the precepts of behavioural economics) is designed to provide feedback and influence change at the level of individual respondents and the system as a whole.

The Financial Behaviour Index showed some changes in behaviour across six waves, for example the proportion of people who earn more than they spend increased from 50 per cent to 56 per cent. On the other hand, between May 2013 and May 2014 the proportion of people with a plan in place to achieve a short-term financial goal decreased by the same amount, i.e. 56 to 50 per cent. Of course these movements are likely to be influenced by a range of factors and it is difficult to draw conclusions as to their significance at this early stage. As the series extends into the future, it should be possible to more confidently track trends and cyclical patterns, and to possibly detect causal relationships.

The FBI’s findings have provided a useful platform for public communications about financial literacy. An unexpected benefit has arisen from the use of the behavioural questions in programme evaluations and a 2014 Money Week “Fitness Check Up” (see http://www.fightingfit.org.nz/)

South Africa

The Financial Services Board (FSB) has developed, on top of the national measurement survey that is conducted every five years, a composite financial literacy score for monitoring purposes. This is intended both as a follow-up to the national measurement survey and as a touch-base assessment to monitor key developments. The core questions are the same as those in the first baseline survey conducted in 2011 by the FSB, and they are used on different target groups as part of South African Social Attitudes Survey (SASAS) that is conducted annually.

In 2010, South Africa undertook an initial baseline study to determine the financial literacy level of South Africans. The survey included 202 questions addressing specific themes within the four domains. Since 2011, as part of the

[12] The results of the Financial Behaviour Index data from 2011 are available at http://www.cffc.org.nz/research-and-reports/financial-capability-research/

Human Science Research Council (HSRC) annual South African Social Attitude Survey (SASAS)[13], 36 of the original questions have been included to provide an annual 'dipstick' into the current status of financial literacy. The FSB will conduct a major study including all 202 questions every five years with interim surveys including the 36 questions done on an annual basis.

These surveys will assist in providing stakeholders in South Africa with key information on any recent changes in the financial literacy scores of consumers, an update of the financial literacy measures of the baseline study and the ability to identify the socio-demographic groups that are financially vulnerable and at risk.

Both the baseline study and annual surveys are conducted by the HSRC. The use of the same service provider ensures the homogeneity of sampling areas thus allowing comparative data over the years. This enables the FSB to understand longitudinal trends among a consistent and representative sample of South Africa's population.

The results of the annual financial literacy score confirm the results of the first baseline survey, and have been useful in the definition of the priority target groups of the South African national strategy. Beyond the annual SASAS and five year full study, the FSB is currently developing a full monitoring and evaluation framework which will map directly back to the four domains (Financial Control, Financial Planning, Financial Knowledge & understanding, Appropriate Product Choice). This will allow stakeholders to measure their initiatives against the four domains and determine what/if any impact their initiatives are having on the scores rendered by the annual and five-yearly surveys.

The results of the studies together with the information on the central database of stakeholder initiatives will inform the crafting of the strategy, its annual review and the monitoring of its implementation. In addition, all stakeholders are encouraged to monitor and evaluate according to the four domains as outlined in the baseline study i.e. financial planning, financial control, knowledge and understanding and product choice.

Evaluation of the strategy is also conducted *qualitatively* through consultation with stakeholders and through the analysis of the evaluation evidence of its delivery tools (see also chapter IV). The analysis of programme evaluation results can bring useful information on the progress achieved in specific policy areas or on specific target groups, identify successful delivery methods or those that need redesign. To this end, it is essential to have a clear picture of what stakeholders are doing on the ground and ensure good reporting and information mechanisms. This allows an evidence-based allocation of resources and a redefinition of the overall programme delivery mix of the strategy.

These have been used in the evaluation of their strategy along with consultation with stakeholders, either through established consultative committees (as with ASIC's national Financial Literacy Community of Practice network in Australia) or through ad hoc stock-take exercises. In other cases, as in the Netherlands, evaluation of the strategy can also be conducted via controlled experiments using treatment and control groups.

[13] http://www.hsrc.ac.za/en/departments/sasas

KEY LESSONS LEARNT IN DESIGNING ROADMAPS AND ACTION PLANS AND IN MONITORING AND EVALUATING THE NATIONAL STRATEGY

As mentioned in the OECD/INFE High-level Principles on National Strategies for Financial Education, national strategies should define an overall and cross-sectoral vision and set general, realistic and measureable objectives and policy priorities. A review of existing experiences in designing these documents further indicate that:

- The objectives set within roadmaps and action plans benefit in particular from clear and explicit references to the quantitative evidence gathered when conducting financial literacy measurements or to data from financial market surveys or household surveys. These references provide benchmarks and make it easier to measure change and show progress. They also permit to set objectives that are realistic and based on national circumstances.
- Realistic success criteria, whether quantitative or qualitative, can also usefully be assigned to each objective set in the action plan: a clear set of outcomes that describe the change the strategy will make in a way that is meaningful to stakeholders. This contributes to making roadmaps and action plans more outcome-focused and operational.
- When identifying programmes to support the strategy, it is also important to provide directions to the organisations involved in programme delivery. This can be done in consultation with the organisations concerned, which can also help to build consensus on the national strategy's targets, and on the best ways to achieve them.

With respect to the monitoring of the national strategy and to its evaluation, the following key lessons can be identified:

- Roadmaps should include a formal timeframe for the evaluation and revision of the strategy (unless revisions are made continuously through established decision-making structures).
- Methods and tools to monitor and evaluate the overall national strategy should be designed and budgeted for when preparing the national strategy, and should be included in its roadmap and action plan.
- The evaluation of the national strategy can be conducted quantitatively, through repeated surveys, and complemented by qualitative information for instance through consultation and feedback from stakeholders involved in programme delivery and their target audience as well as using evidence from the evaluation of specific programmes.
- The use of financial literacy and behaviour indicators can also allow public authorities to track changes and provide added value to the monitoring of the strategy.
- There are benefits in having standardised indicators and evaluation methods throughout the country, in order to be able to compare and analyse more effectively evaluation and monitoring data from a variety of private and not-for-profit stakeholders implementing financial education programmes.
- The development of core competencies on financial education can support evaluation, as they identify common financial literacy targets against which to measure progress.

The importance of good reporting to measure progress made in the national strategy's implementation should not be overlooked. Implementing bodies should be encouraged to provide updates on the activity conducted as well as evaluation evidence, and also report, nationally and (where relevant) internationally, other significant information necessary to track the impact of the strategy and knowledge of what works.

🕮 CASE STUDY: AUSTRALIA

Monitoring the implementation of the national strategy through qualitative and quantitative criteria

Under the National Financial Literacy Strategy 2014-17 (Australian Government, 2014), ASIC has committed to oversee implementation, working closely with the Australian Government Financial Literacy Board, and to provide an annual report on progress.

To facilitate monitoring and reporting, the 2014-17 Strategy includes, for the first time, key indicators/criteria aligned to some of the core actions under each of the Strategy's five priorities.

The key criteria will help ASIC compile baseline information to assist in tracking delivery and implementation of core actions under the Strategy. The indicators were developed in close consultation with stakeholders and deemed to be the most critical to assessing the Strategy's progress. See Table 1.

Table 1: National Financial Literacy Strategy 2014-17 – strategic priorities and key indicators

Strategic priority	Key criteria
1. Educate the next generation, particularly through the formal education system	• Number of schools engaging in financial literacy education • Number of teachers participating in ASIC's MoneySmart Teaching professional learning programme • Number of vocational education and training (VET) students participating in financial literacy education
2. Increase the use of free, impartial information, tools and resources	• Number of people accessing ASIC's MoneySmart website and print materials • Number of people accessing other free, impartial sources of information, tools and resources • Outcomes of research studies and evaluations show changes in financial well-being
3. Provide quality targeted guidance and support	• Number of people assisted by national targeted guidance and support programmes • Feedback from intermediaries about guidance and support provided • Outcomes of research studies and evaluations show changes in financial well-being
4. Strengthen co-ordination and effective partnerships	• Enhanced cooperation and partnership between relevant government departments • Feedback from members of ASIC's national Financial Literacy Community of Practice network • Feedback from attendees at national forums and workshops
5. Improve research, measurement and evaluation	• ANZ Survey of Adult Financial Literacy in Australia • Number of financial literacy programmes being evaluated • Feedback from financial literacy stakeholders on opportunities to share information and recognise good practice

Tracking and reporting on progress against the criteria will require collecting a mix of quantitative and qualitative data on an annual basis, from within ASIC as well as from external stakeholders.

It is important to note that the key criteria are not intended to cover all activity carried out under the Strategy. There will be scope in the annual reporting process to highlight additional data and activities and share outcome stories, for example through case studies.

Tracking changes in Australians' financial literacy, behaviour and attitudes over the longer term is also part of monitoring progress under the Strategy (see also Box 4.1 "The development of financial literacy and financial behaviour indicators to monitor the overall national strategy"). The ANZ Survey of Adult Financial Literacy in Australia, conducted at roughly three-yearly intervals since 2003 is, and continues to be, the primary reference point for measuring population-wide financial literacy levels in Australia and observing changes over time.

The findings from a range of other research may also be considered in evaluating the extent of progress of the Strategy over time, especially with regard to specific segments of the community. This additional research may include relevant OECD surveys such as the Programme for International Student Assessment (PISA) financial literacy assessment, aspects of national household panel surveys (e.g. Household, Income and Labour Dynamics in Australia (HILDA) survey), evaluations of national, targeted financial literacy initiatives and research on the financial attitudes and behaviours of Australians (Australian Financial Attitudes and Behaviour Tracker).

THE MEANS: FUNDING THE STRATEGY

The majority of responding countries mentioned that their national strategy is financed by a combination of public and private resources (more than two thirds of respondents). However public sources of funding seem to have a prominent role in most countries.

Public funding either comes from general (annual or multi-year) government budget or from statutory provision within the public institutions involved in the national strategy depending on the structure of the national strategy. In countries with a strong leading body or institution, the budget is generally centralised. In countries where the responsibility of implementing the strategy is shared amongst different stakeholders, the budget is also set independently within each institution in charge of a particular project or sector. In some cases, as in Chile, each institution devolves equal amounts to the development of the strategy. However, in many cases the budget comes from different areas of each institution involved in the implementation of the strategy, thus it is not always possible to define the exact amount of the global budget devoted to the national strategy, even when this is entirely public.

Funding is also sometimes collected through a statutory levy on private financial institutions (as in Ireland, South Africa and the United Kingdom) or made available from the collection of fines for contraventions to regulation (South Africa). In addition, in countries such as Indonesia and South Africa, private financial institutions have to develop financial education as a part of their social responsibility strategy. In some others, private institutions provide some voluntary funding for particular public or not-for-profit financial education projects. The Government of Canada has recently secured a commitment from Canada’s banks to establish a five-year Financial Literacy Partnership Fund of over seven million EUR to provide grants to eligible community organisations for projects that work to improve the financial literacy capabilities of Canadians.

Overall, between 1 million EUR to a maximum of 18 million EUR per year is spent by public authorities on national strategies in economies where they are implemented (based on the sample who have disclosed their data): two million EUR in Spain (excluding human resources, that are paid through the institutions’ budgets), 2.6 million EUR in the Netherlands, 3.5 million EUR in Canada, 8 million EUR in Israel, 18 million EUR in the Russian Federation. The amount obviously depends on the size of the country and the importance of the national strategy. In countries with a considerable budget (such as Russia), the national strategy is very comprehensive (including several evaluated pilot programmes) and also involves the development of a financial consumer protection regime.

Box. 4.2 Spending on financial education vs. financial marketing: the US experience

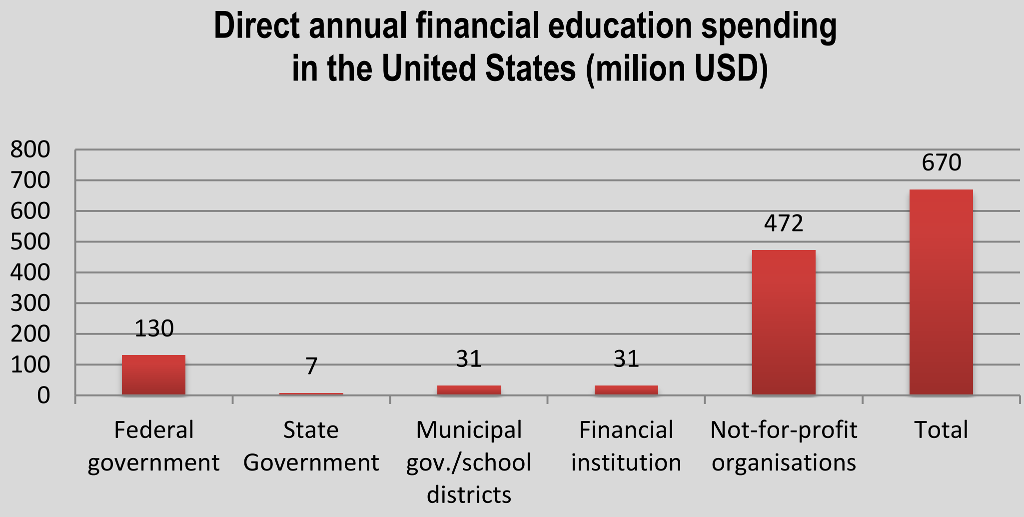
National strategies for financial education are implemented also with the aim of optimising resources, especially as public funding to be spent on financial education by public authorities can be scarce.

The average consumer both in advanced economies and in emerging markets is increasingly targeted by financial marketing messages by the financial services industry. In this context, it is relevant to look at the amounts spent by the private sector and compare it to those spent by the public sector, in order to better understand the kind of messages received by individuals, and through which media they are delivered, as well as what frames individuals' financial decisions.

A study conducted by the Financial Consumer Protection Bureau (CFPB) in the United States has analysed spending by the public sector in financial education and spending by private financial institutions on financial marketing (CFPB, 2013a). The findings of the research point out to a disparity of resources, but also to an interesting break-down of the providers of financial education outside the public sector.

In terms of resources spent, in the US economy spending on financial industry marketing is found to outweigh financial education spending by 25 times. 17 billion USD are spent on marketing consumer financial products (excluding marketing of products related to retirement, college loans and other investments) versus 670 million USD spent on the direct provision of financial education to consumers.

The research identifies several sources of direct provision of financial education, which is provided in decreasing order of magnitude by not-for-profit organisations, the federal government, municipal governments and school districts, private financial institutions and by state governments.



It is interesting to note that two thirds of the total amount comes from private resources, with one third provided by public resources all combined. This calls for an increasing attention to the role that can be played by guidance, principles and codes of conduct in framing the activities of the private and not-for-profit stakeholders (see also Box 3 "Key criteria for the involvement of private and not-for-profit stakeholders in financial education").

With respect to spending on financial marketing, the research identified two marketing spending components: awareness advertising and direct marketing. Awareness advertising includes the delivery of general promotional messages not intended for immediate sales of products, whereas direct marketing includes methods aimed at promoting individuals to make an immediate purchase or generate a lead, such as internet display advertising or direct mail.

The analysis of the products advertised and of the media channels used, although limited to the US market, can offer interesting insights into the marketing and advertising activities of the financial industry. It can provide public authorities with information that is very relevant to design financial education materials and programmes, and to deliver it through the most appropriate channels. It is worth noting in particular that with respect to general awareness advertising, the biggest amounts are spent on credit cards, followed by general banking. With respect to direct marketing spending by media type, internet search and display exceeds by far any other delivery channel, with 44% of spending.

KEY LESSONS LEARNT IN FUNDING THE STRATEGY

National strategies are funded through a variety of sources, modalities and tools. Several key lessons can be drawn from countries' experiences, bearing in mind the differences in national circumstances:

- Long-term planning and multi-year budget horizons are instrumental in implementing effective financial education policies, due to the long-term nature of the behavioural change sought by these public policies.
- Demonstrating impact and return on investment from resources invested in financial education is very important to secure stable sources of budget, especially given the competing policy priorities that governments face nowadays. This calls for good monitoring and evaluation, to ensure accountability in the ways resources are spent, and to allow public authorities to understand which activities have proven successful and are worth receiving additional resources.
- When mixed sources of funding are sought, in order to secure stable funding from the private sector, it is beneficial to involve these stakeholders as early as possible in the design and implementation of the national strategy, to instil a sense of ownership of the initiatives implemented.
- When private stakeholders are financially contributing to the national strategy, appropriate guidelines (based on the OECD/INFE Guidelines for Private and Not-for-profit Stakeholders in Financial Education) should be established to ensure the viability and objectivity of the strategy. Funding mechanisms (such as trust funds) that minimise possible conflicts of interest can also be considered.
- Even when the private sector does not contribute directly to the national strategy, it is important to engage with private financial institutions in order to encourage and facilitate the funding of activities that support the national strategy lead by public authorities.

Case studies

The contribution of resources from the private sector to the activities carried out in the context of national strategies for financial education can create positive opportunities as well as challenges. The examples of Indonesia and South Africa show how private financial institutions can be mandated to conduct financial education programmes by the laws regulating financial markets, in the framework of the national strategy implementation.

CASE STUDY: INDONESIA

Mandating, approving and monitoring the conduct of financial education activities by the private sector

The Indonesia Financial Services Authority (OJK) has a mandate to provide information and financial education as part of the national financial customer protection framework. Supporting this mandate, in November 2013 OJK launched the National Strategy for Financial Literacy. The main objective of the Strategy is to increase the financial literacy level of the Indonesian population, especially among low-income communities. The National Strategy for Financial Literacy consists of many programmes and initiatives categorised into three pillars to be implemented over a period of five years beginning in 2014. This Strategy has become the framework under which both OJK and all private financial institutions conduct financial education programmes.

The National Strategy for Financial Literacy is based around four principles:

- Inclusiveness: financial literacy programmes must cover all communities;
- Systematic and measureable programmes: financial literacy programmes are well planned, understandable, simple, and their achievements can be measured;
- Accessibility: materials and resources are widely distributed across Indonesia and accessible; and
- Collaboration with stakeholders: involving all stakeholders to implement the national strategy.

The National Strategy is implemented with the contribution of the private sector. Financial markets regulations mandate the financial services industry to support the objectives set out in the national strategy's roadmap, and in particular to contribute towards the achievement of an increase in the financial literacy target of two percent every year.

The target of two percent increase is based on the financial literacy index baseline which was 21.84% in the 2013 national financial literacy survey. This index is set as a benchmark for Indonesia's financial literacy index, with a two percent increase in financially literate across the population sought every year. Furthermore, the two percent target increase is an average increase of all financial literacy indexes per product category: banking, insurance, capital market, non-bank financing companies, pension funds and pawnshops.

In the context of the national strategy's implementation, all financial institutions whose licences are released by OJK are mandated to have at least one financial education programme per year addressed to the general public and based on the recommendations of the national strategy. This obligation has its foundation in article 14 of the OJK Regulation number 1/2013 on Consumer Protection which took effect on August 6, 2014.

There are approximately 2700 financial institutions in Indonesia, from banking, insurance, multi- finance, pawnshops, securities and pension funds, which are obliged to include their financial education programme in their annual business plan.

The supervisor must give approval to the plan, and then monitor the programme implementation on a regular basis. The financial education programmes must follow the content of the action plans outlined in the National Strategy, and they cannot be part of marketing activity nor sales activity. The programmes should be stand-alone and dedicated to any community based on the company's target audience and strategy.

Any financial institution, by the end of the year, is mandated to submit a proposal for a financial education plan for the following year which consists of :

- Financial education programme(s):
  - should be based on the National Strategy for Financial Literacy,
  - it is not part of marketing activities. Introduction to basic features of financial products and services including knowledge and skills about benefits, costs, and risks are allowed.
- Objectives of the financial education programme;
- Forms of activities and media that are used in promoting financial literacy;
- Target audiences of the programme;
- Frequency of the financial education programme(s); and
- Source of the budget and whether it is part of the institution's social and corporate responsibility activities.

After completion of the education programme(s) proposed in the business plan, financial institutions must submit the programme implementation report to the supervisor as well as Directorate of Financial Literacy, which is part of OJK. The report will be analysed and evaluated as to whether the education programme has achieved the targets outlined on the business plan.

The effects of the regulation mandating financial institutions to conduct financial education programmes can already be assessed in its first year of application. In 2014, 438 financial institutions submitted proposals that included 1055 financial education programmes or activities for the year 2014. The programmes cover topics such as financial planning, banking, insurance, consumer finance, pawnshop and capital market products and services. The programmes planned by private financial institutions have a wide geographical coverage and they target a variety of audiences including students, employees, pensioners, SMEs, women and workers.

📖 CASE STUDY: SOUTH AFRICA

Pooling private financial institutions' resources in a trust fund and mandating financial education activities

South Africa's national strategy for consumer financial education is co-ordinated by National Treasury and members of the National Consumer Financial Education Committee (NCFEC). The NCFEC includes representatives from industry bodies, regulators, trade unions, government departments, educational institutions and research companies. The Committee serves to ensure that there is a central, coordinated effort in the delivery of consumer financial education initiatives among all stakeholders. To date, funding for consumer financial education programmes has not been centrally co-ordinated, but rather those who deliver these programmes have sought funding individually.

The use of a trust to fund initiatives

The Financial Services Board (FSB) established the Financial Consumer Education Foundation (FSCEF) as an alternative source of funding consumer financial education initiatives. As the FSB is a regulator, it is not in a position to source funding directly from the industry and often the industry does not have the capacity to deliver targeted consumer financial education programmes. The FSCEF provides a conduit between the financial services industry and the consumer financial education initiatives undertaken by the FSB. The FSCEF is a trust which is responsible for sourcing and allocating financial donations made from private companies (both in the financial services industry and otherwise) for use in consumer financial education initiatives. The Consumer Education Department of the FSB make submissions to the FSCEF for funding of a selection of its projects. The FSCEF considers these proposals and funds them. This model allows for those in the financial services industry who would prefer to fund specialist programmes instead of undertaking them themselves, to donate to the FSCEF. Institutions that donate to the FSCEF may apply for a tax benefit under section 18A of the South African Tax Law. A challenge with this model is that trustees may not be willing to allocate the funds to certain initiatives or there is a mismatch between donors' expectations and what can be practically delivered on.

Financial sector codes

The Financial Sector Codes (Government of South Africa, 2012) require all financial services companies who subscribe to the Codes to ensure 0.04% of their after tax profits are used for consumer financial education. The Codes were established and agreed upon by the financial sector in South Africa to encourage Broad Based Black Economic Empowerment (BBBEE) in South Africa. The financial education criterion is only one of several others in the Codes. These include company ownership, skills development, employment equity and access to financial services, amongst others. The implementation and adherence to the code is done by the Financial Sector Charter Council. The Council has published guidelines for the implementation of financial education and these include: target market, types of programmes, measuring principals for qualifying initiatives and the specification of minimum consumer education standards. Though this equates to a large amount of money, there is no central fund from which this money can be accessed and as the FSB cannot solicit funds directly from financial services providers, access to this money is very limited. However, financial industry bodies, such as the South African Insurance Association (SAIA) and the Association for Savings and Investments in South Africa (ASISA), are in a position to pool member funds for consumer financial education initiatives.

On the positive side, the Code requirements provide a funding base for more financial education activities to be initiated and implemented. From a financial inclusion perspective, this gives consumers broader access to information on financial services and products. The NCFEC is in the process of establishing a database on which all financial education initiatives will be recorded. This will give the Committee a broader picture of how the national strategy is implemented.

Challenges

A major challenge for funding the national strategy with private resources is that, from the regulators' context, funds cannot be solicited directly from private sources as those mandated with consumer financial education are bound through legislation. Another issue is that private companies could have their own agendas and expectations for consumer financial education, one of which may include 'product pushing'. Though the Financial Sector Codes do provide guidelines for branding, often the issue arises when regulated institutions want to co-brand financial education initiatives they have been funded through the FSCEF as these projects are delivered by the FSB. This is an ongoing issue and funders may withdraw their funding as a result of the fact that that currently the FSB cannot co-brand with the industry.

CHAPTER 5. ENSURING EFFECTIVE AND INNOVATIVE PROVISION OF FINANCIAL EDUCATION

This chapter aims at highlighting selected traditional and innovative provision of financial education as part of national strategies: from school-based programmes to edutainment and games, from workshops and leaflets to the use of branding and social media. It particularly seeks to identify and highlight combinations of effective delivery methods based on findings coming from evaluation of successful programmes and recent findings from research. As such, it is not intended to be exhaustive or to provide an overview of all successful delivery methods and programmes but rather concentrate on main trends and effective approaches.

MAIN DELIVERY CHANNELS AND TOOLS

National strategies for financial education display a variety of implementation components and delivery channels, based on the policy priorities identified, the subgroups of the population that are targeted, the available budget as well as which channels are used. The delivery channels exploited to provide financial education are increasingly incorporating technology, and benefiting from the results of evaluation, data analysis, and other disciplines such as behavioural economics.

As more national strategies have moved into implementation phase and as more evaluation and research (including findings from behavioural economics and economic psychology) has been conducted on individual programmes, it is possible to identify some of the most effective approaches in the delivery of financial education to individuals as well as communities and target groups. National strategies can incorporate these findings on programme delivery within their roadmaps and include guidance on the delivery of financial education programmes.

The financial education initiatives that have proven to be most effective seek to combine different approaches aimed at:

1. Facilitating access to information and education;
2. Taking into account timing and location and harnessing existing learning environments; and,
3. Supporting individual engagement, motivation and decision-making.

Facilitating access to information and advice through multi-channel delivery

Facilitating access to information can be achieved through a variety of channels, including the creation of national strategy websites, communication campaigns on the strategy or specific areas or priorities within the strategy as well as a multiplicity of tools, including the use of technology.

Websites and web-based tools

In order to maximise impact and the efficient use of resources, the information and tools provided in the framework of the national strategy should be centralised to the extent possible. This can be achieved through the creation of a website for the national strategy, as done in a majority of countries (see also Table 5.2).

The institution(s) leading the national strategy usually develops a dedicated public website to disseminate information and provide educational resources to the general population. In some cases (as in Australia, Japan, the Netherlands, New Zealand, Singapore, Spain, Portugal and the United Kingdom), these portals have become important references in their countries for the provision of financial information and tools. Most of these websites are interactive and adapted to various target audiences. Some of them also provide detailed guidance on personal finance issues adapted to users' needs according to different subgroups.

National strategy websites typically include resources based on a life-stages approach, or centred on the offer of financial products available in the market. Increasingly, these websites also offer sophisticated tools to assist individuals and families in managing their finances. These tools range from budget planning resources to calculators for credit card debt, mortgage repayments or pension entitlements.

In some cases, these websites also act as a repository of information on comparable financial products offered by national financial institutions, allowing a quick and reliable comparison among different providers and product ranges. This is for example the case in Mexico, where the National Commission for the Protection and Defence of the Financial Consumer (CONDUSEF) launched, in July of 2014, the Bureau of Financial Entities (www.buro.gob.mx). The Bureau is a website that provides information about the different financial products available in the market (savings, credit, insurance policies, saving for retirement products, etc.), evaluates the products and indicates whether the financial entity has a financial education programme. This website also contains information on every institution that is part of the Mexican Financial System, including the number of complaints presented by the consumers, sanctions applied to financial entities which breach Mexican regulations, abusive clauses identified in contracts, unhealthy practices and other information that can help consumers in their everyday operations.

Creating a brand

Countries have benefitted from the creation of strategy names in the format of a “consumer brand” as well as logos for their national strategies that could be easily identified by the public. This has proven useful in a number of ways. First, having a strong market presence as an independent source is essential given the broad array of private sector websites capturing consumers attention (see also Box 5 “Spending on financial education vs. financial marketing” in Chapter III). Consequently establishing a website maintained by a public institution as a reference in independent advice and resources has been identified as essential. Second, the creation of a consumer brand linked to financial education makes it easier to advertise the existence of resources and to standardise awareness campaigns around a single access point.

Box 5.1 Creating consumer brands to enhance engagement

The four financial regulators and the Education Bureau joining forces through a common brand and outreach strategy in Hong Kong, China

Since its establishment as a new organisation in 2012, the Investor Education Centre (IEC) has sought to raise public awareness of its holistic education efforts to provide comprehensive, credible and impartial source of financial information, tools and resources; as well as its role as the focal point for financial education in the territory. To do this, a number of mass media education campaigns, community outreach events and corporate activities were held to inform and engage. To convey the broad scope of the IEC’s financial education work and that the IEC is supported by all financial regulators as a credible and impartial source of financial information and education, the logos of the four regulators are positioned alongside the logo of the IEC as well as the statement “The Investor Education Centre is supported by the financial regulators” in all IEC’s public communications materials, where appropriate and practicable.

As part of a review conducted in 2014 to further enhance the effectiveness and public engagement of IEC’s financial education work, the IEC will pursue additional initiatives with an objective to project an image of a “caring” and “credible” life coach to provide support and encouragement to help citizens with their financial learning and actions. The IEC will in particular develop a new consumer brand that increases public awareness of and involvement in financial literacy throughout citizen’s lives as well as appeals to their emotional and practical needs on personal finance. The new consumer brand will become the principal platform for all IEC’s financial education initiatives and communications.

The “Sorted” brand in New Zealand

The centralisation of information can also take place through a brand that is not explicitly linked to the institution leading the national strategy, as in New Zealand. In 2005 the (newly renamed) Commission for Financial Capability created the “Sorted” website (www.sorted.org.nz). The Sorted brand has been used by the Commission to frame its message in mass communications campaigns that have been evaluated and proven very effective. These campaigns were centred on three key messages associated with the three steps in getting individuals' financial lives sorted: Think (ahead); Shrink (your debt); and Grow (your savings).

An evaluation conducted by the Commission in the context of the monitoring of its marketing and communication activities revealed that total awareness of Sorted was 84% (Marketing Monitor) and that among these, the percentage of people taking action as a result of the campaign on shrink debt was 41%; this increased to 50% when adding other Sorted marketing and communication activities. The Commission continues to be involved in the development and delivery of community engagement programmes, and mass reach via communication channels such as Sorted.

The design of different brands to target different audiences in Peru

The Superintendence of Banking, Insurance and Private Pension Funds (SBS) has created 2 brands and several characters for its financial education interventions. A first brand is specifically designed to address the school system, including students, their parents, and teachers, *Finanzas en el Cole* (Finance in school). A second one, *Finanzas para Ti* (Finance for you) provides a common branding for financial education programmes targeting young people, adults and elderly people. The SBS has also designed a specific character, *Torito*: it is a special kind of bull representative of the folklore and culture of the Southern part of the country and with its family they are very appreciated by pupils. This character teaches children about saving and budgeting, and explains them how to achieve their short and long term savings goal.

A consumer-friendly website for South Africa

In South Africa the Financial Services Board (FSB) launched in 2013 its consumer education website (www.mylifemymoney.co.za). Though the website is hosted by the FSB, it was decided that the branding of the website should be separate from that of the regulator and be more consumer driven and more consumer friendly. This has contributed to its increased exposure in print media, radio, television and face-to-face initiatives. The website supports the national strategy as it not only houses the strategy on-line but also provides content to consumers in a life-stage approach which is in line with the strategy. The website also provides a separate portal for stakeholders to access information and to upload initiatives they or their industry members are undertaking.

Awareness and communication campaigns using multi-channel delivery

Several national strategies include in their roadmaps mass communication campaigns, which can be general or focus on selected issues and/or target groups. The campaigns to inform the population of the onset of a national effort to support financial consumers by public authorities fall within the first category. These campaigns are intended as a tool to raise awareness of the existence of the national strategy itself, as well as on the importance of financial education for individual well-being (sometimes coinciding with international co-ordinated initiatives, such as the Global Money Week and the European Money Week). This is notably the case in Australia, India, and Indonesia. These campaigns can also take place as part of the implementation roadmap of the national strategy, as in the Netherlands, and be centred on one or more life events, or key simple messages (as in Singapore and in the above example of New Zealand).

Communication can also use mass media in more sophisticated or innovative ways, such as edutainment. This can also include embedding financial literacy messages within soap operas aired on public television, as in South Africa's "Scandal" series, which included messages and examples around over-indebtedness (Berg and Zia, 2013). Always in South Africa, the Financial Services Board together with the South African Insurance Association are currently developing 26, three-minute edutainment snippets for television entitled "Next of Next Week" (a commonly used slang-term which refers to procrastination): these will be aired on a free-to-air national channel before a major soap opera and will have two of South Africa's leading comedians address money management issues. Radios can offer another powerful tool to deliver financial education, particularly in hard-to-reach geographical areas where radio is a more available mass communication medium. For instance, in Peru, the Superintendence of Banking, Insurance and Private Pension Funds (SBS) together with the Ministry of Agriculture has targeted more than 1.8 million residents in rural communities by using messages aired on local rural radio stations; in Colombia the national insurers association has conducted similar programmes aimed at radio listeners in three main cities of the country (Universidad de los Andes/Fasecolda, 2014).

Accounting for timing and location and harnessing existing learning environments and networks to foster outreach

Choosing the right timing

The programmes within the national strategy can exploit potential teachable moments, such as by adopting a life-cycle approach or by reacting to events impacting the lives of individuals. Indeed a life-cycle approach to financial education is increasingly chosen by many national strategies for financial education.

This approach recognises that financial education can be more powerful when provided at critical points in the lives of individuals, in order to seize "teachable moments". The teachable moments harnessed by life-cycle approaches may vary according to specific national circumstances but are typically linked to key steps in the personal and financial lives of individuals and households such as independent living, marriage, buying a home, the birth of a child, or pre-retirement. Life events and transitions have important effects on the financial situation of individuals and their financial education needs, both in the context of planned events such as getting married and unforeseen ones such as losing a job. These events often require individuals to acquire new financial skills, and change the environmental factors people navigate through. Making the most of these moments calls for the development of tailored resources, and for their provision at the right point in time in the lives of individuals.

Appropriate learning environments

Effective and successful delivery often uses environments conducive to learning, such as schools (see section at the end of this chapter) and the workplace (see Box. 7 below). In the case of workplace education, the institution in charge of the national strategy may provide financial education programmes targeting selected sectors of the economy, or selected workers based on their age and saving needs.

Using trusted intermediaries and networks and training to foster outreach

For the programmes in which the human resource component has a direct interaction with the target audience, such as in workshops or classrooms, the national strategy should promote the proper education and competence of the educators. Trainers and intermediaries should have, or be trained to have, expertise on the subject and on the pedagogic elements of the programme, as well as soft skills such as good communication.

Some effective financial education programmes also make use of existing networks of intermediaries that can deliver financial education and act as a trusted source. Communications directed towards a specific target group may benefit from conveying information and education through trusted and known sources, and by identifying for each of the target audiences of the national strategies also a group of programme deliverers that is most suited to that group. This is particularly the case for more vulnerable or excluded groups that have fewer opportunities to come into contact with the primary national strategy stakeholders. This approach can also be helpful when discussing culturally sensitive issues such as funeral expenses (see the case study of South Africa below) or specific, specialised topics such as retirement savings. This can be done by partnering with established not-for-profit institutions or by creating specific partnerships with the public sector: in Peru, for example, the Superintendence of Banking, Insurance and Private Pension Funds (SBS) partners with the Ministry of Agriculture to outreach to the rural population on personal finance and insurance culture and with the Ministry of Labour in the programme "Youth to work" (*Jóvenes a la obra*) to reach young people and teach personal finance. In addition, the influence and natural audience enjoyed by journalists can be used to spread financial education messages (see case study of Turkey below).

Financial education programmes can also create ad hoc networks of intermediaries. In this respect, the development of programmes to "train the trainers" and the provision of specific information material and tools for these trainers should be encouraged, and ideally identified as a priority in the strategy's roadmap. Networks can also be developed by creating and nurturing a pool of dedicated volunteers and advocates.

Box 5.2 Financial education programmes in the workplace

The workplace is an ideal setting to offer financial education and help employees to make an effective use of their financial resources. Financial education delivered in the workplace typically focuses in particular on retirement planning and investing, in the context of personal financial management. This is typically the case in economies where individuals are more responsible for their own retirement planning, based on factors such as the level of state-benefit in retirement, the role of defined contribution (DC) schemes and the rules surrounding annuities.

There are advantages in delivering financial education in the workplace (Atkinson et al, 2015 forthcoming). By making education readily accessible at work, time participation does not require employees to give up their leisure time or actively and independently seek appropriate courses. It may also be possible to make the education compulsory for all employees, or a subset who are seen to be most likely to benefit (such as pre-retirees). Furthermore, workplace education has been shown to be an effective way of changing behaviour. Evaluation conducted on such programmes, as well as research conducted by the OECD/INFE Secretariat on the topic of financial education for long-term savings and investments shows that workplace education programmes have led to an increase in enrolment and/or contribution into pension schemes. In one study the effect was shown to reach both participants and their co-workers. Research also indicates that workplace financial education is seen as a benefit by employees, which may increase motivation and retention.

National strategy roadmaps can include references to the importance of financial education provided in such settings, and in some cases also provide explicit guidance on the modalities through which this should be conducted.

In the **United States**, the President's Advisory Council on Financial Capability has recommended a strategic framework to guide employers providing financial education in the workplace (President's Advisory Council on Financial Capability, 2012). This framework recognises that employers are increasingly providing financial education and recommends the inclusion of five fundamentals for workplace financial literacy programmes, with specific guidance based on the size of the employer. These fundamentals are the provision of access to employer-sponsored savings vehicles, the delivery of financial education from a trusted source, the need to encourage employees to take advantage of these tools and education, the need for employers to identify goals and key metrics to monitor the programmes' provision, and finally the need to facilitate employees' relationship with financial services providers.

In **Australia**, the National Financial Literacy Strategy 2014-17 (ASIC, 2014) indicates encouraging more workplaces to offer structured financial literacy programmes free-of-charge to employees as a key priority. The aim of these programmes should be the achievement of greater engagement with financial decision-making on issues like superannuation and planning for retirement. Employers that are leading the way in developing workplace-based financial literacy programmes at the national level have also received recognition in the form of outstanding achievement awards by Financial Literacy Australia, a not-for-profit organisation established by members of the Australian Government Financial Literacy Board.

In **New Zealand**, the national strategy roadmap (Commission for Financial Capability, 2014) makes explicit reference to workplace programmes as part of the activity stream "learn", and identifies them as a key component of lifelong learning. Workplace education also features as part of the activity stream "plan", which has among its objectives to work with employer groups to introduce and extend financial education in the workplace. The Financial Capability Commission supports its piloting and development.

As part of the national strategy implementation, the Commission has therefore both encouraged the delivery of financial literacy programmes and developed its own programme, the Sorted Workplace Programme. This course consists of ten two-to-three-hours workshops run by an external facilitator over nine weeks and covering budgeting, managing debt, goals, saving, retirement planning, investments, KiwiSaver, buying a house, insurance and wills. An additional session is held as a family day on a weekend, to include the wider household in the programme. An evaluation of the programmes (Malatest International, 2014) showed that participants have improved in the key aspects of the course, notably with respect to savings behaviour and retirement planning. Employers also reported significant and sustained improvements in the work satisfaction and general capability and confidence of staff in the work place, which has translated to improved productivity.

Successful financial education programmes also include financial education provision in broader social and community activities, especially when targeting hard-to-reach groups, or as part of social policy interventions. Programmes can be embedded in the package of social services provided to recent immigrants, as done by the Australian Securities and Investments Commission (ASIC); they can also be given to its own citizens that have emigrated to other countries, as done by the Ministry of Foreign Affairs in Mexico, through its Institute for Mexicans Abroad (see Box5.3). Financial education can also be provided in the context of conditional cash transfer programmes: the Colombian programme *Familias en Accion* has piloted a financial education component as part of a wider intervention for poorer households. In Brazil, a horizontal financial education programme is planned under the national strategy with the goal of targeting poor households recipient of the conditional cash transfer *Bolsa Familia.* The Central Bank is already developing a financial education programme with the same target audience (see case study below).

Supporting individual engagement, motivation and decision-making

Effective financial education programmes focus on the development of attitudes and skills and not simply on the provision of knowledge. This can be achieved by building on financial competencies early in life (notably through the introduction of financial education in schools and/or targeting young people), or by harnessing peer pressure and the community effect, as in the case of programmes aimed at indigenous communities and cultural minorities. The community effect is harnessed in particular when financial education programmes involve respected community leaders in order to convince target audiences of the importance of the financial education intervention.

When targeting homogenous groups, evidence has showed that role modelling of desirable behaviours and peer-to-peer transmission of financial education can play a role in improving behavioural outcomes and have spillover effects even on those who do not take up financial education. Programmes aimed at changing behaviours among hard-to-reach target groups or the financially excluded have also introduced the use of monetary incentives. The pilot programme for the introduction of a financial education component in the programme *Familias en Accion* in Colombia for example has trialled the use of a monetary incentive for the promotion of a savings habit.

Financial education programmes have also begun exploring new avenues to change the behaviours of target groups. These innovative approaches are often based on the findings of social marketing research and the use of interactive methods, such as games, competitions, visualization and storytelling. Storytelling has proven useful as narratives allow individuals to learn from vicarious experience, this can prove particularly effective when dealing with the less literate.

Embedding financial education in games and competitions is also increasingly adopted when targeting young people. In Portugal, the National Council of Financial Supervisors, in partnership with the Ministry of Education and

Science, organise each year a national competition for schools, rewarding the best financial education projects for each stage of education; in Turkey, the Ministry of Education provides financial education in the context of art classes (see case studies below).

Finally, social media and mobile technologies have recently provided additional ways to deliver key components of national strategies for financial education. This takes place both through an online presence on networking media such as Facebook and Twitter, as well as through the development of mobile applications that can focus on specific policy areas of the national strategy (such as the mobile application on pension savings developed by CONSAR in Mexico, or a web page designed by CONDUSEF to serve Mexicans abroad, which provides specific information about financial entities in Mexico including their compliance).

Box 5.3 Addressing the needs of vulnerable target groups through specifically designed initiatives

National strategies for financial education often identify specific target groups, based on evidence gathered through measurement surveys, through the assessments of their vulnerabilities, or because providing them with financial education complements wider policy agendas of the government.

a) Migrants

Recognising the importance of remittances flows and the vulnerability of migrants, some home and host countries have implemented programmes to support migrant workers and their families and improve their financial literacy (Atkinson and Messy, 2015). A number of public authorities implementing a national strategy have designed specific pedagogic materials for this audience, and provide financial education at teachable moments or as part of wider packages of social interventions aimed at this vulnerable group.

In India, financial education elements have been introduced in the pre-departure orientation course for all migrants, as well as in an entrepreneurship promotion programme designed to stimulate investment in India for migrants returning from the Gulf countries. Moreover, the Ministry of Overseas Indian Affairs (MOIA) has introduced a special social security scheme named "*Mahatma Gandhi Pravasi Suraksha Yojana*" for overseas Indian workers. This scheme helps them to save for their pension through NPS-Lite (National Pension Scheme), to save for their return and resettlement, and to obtain life insurance cover free of charge.

In Indonesia, Bank Indonesia has developed modules for migrant workers and conducted them in Indonesia and in host countries. These were developed with the inclusion of train the trainers components, in collaboration with the Ministry of Manpower, the Financial Markets Authority (OJK), and the National Agency for the Placement and Protection of Indonesian Migrant Workers (BNP2TKI) and supported by the World Bank, the International Labour Organisation (ILO), NGOs (TIFA Foundation), and the banking sector. The programme covers migration targets, financial budgeting, financial products, and banking services industry.

In Mexico, the government provides financial education to Mexican migrants in the United States, as part of interventions addressing also health care, education, workforce development, English language acquisition and leadership. The Ministry of Foreign Affairs in Mexico, through the Institute for Mexicans Abroad (IME) organises financial education weeks in its consulates in the United States and Canada, targeting Mexican Immigrants. The Financial Education Week in 2015 reached almost 100000 people. Furthermore, Mexico launched a Financial Education Window in its Consulate in New York City on May 2014, which operates with non-for-profit funding and provides integral information and advisory and has served over 23000 Mexicans. The Government of Mexico has plans to expand this model to other 10 Consulates in the US by 2016.

In the Philippines, the central bank (BSP) includes the migrant population among the priority target groups of its financial education policies. The Financial Learning Campaign for Overseas Filipinos is part of the central bank's drive to promote a culture of saving among migrants and their families and to spur the channelling of these savings into productive investments at home. The programme targets both migrant workers and their families. The campaign uses a variety of delivery channels: video, public speakers and discussions to prepare staff and sessions for partner agencies. In addition, The Philippine Overseas Workers Welfare Administration (a government agency attached to the Department of Labour and Employment) provides an eight hour pre-departure orientation seminar to migrant workers, and a reintegration programme to returning workers, which include financial literacy.

Migrants are also targeted as vulnerable groups in some host countries, with programmes being implemented as part of the national strategy in Australia and the United States, for example.

b) Women

Gender differences in financial literacy pose challenges to improving women's financial well-being, and this is often acknowledged by public authorities implementing national strategies for financial education (OECD, 2013).

Women display on average lower financial knowledge than men and are also less confident in their financial knowledge and skills. Even though they appear to be better than men in some areas of short-term money management behaviour, they have a number of vulnerabilities in other aspects of financial behaviour: women are more likely to experience difficulties in making ends meet, in saving, and in choosing financial products appropriately. As a consequence, various governments and other stakeholders have addressed these challenges by developing financial education policies and programmes for women and girls. Accordingly, some national strategies specifically include women among the priority target audiences. This is the case in Australia, Brazil, Egypt, Indonesia, Israel, Lebanon, Mexico, Pakistan, South Africa and Turkey.

Countries address the specific needs of women by further segmenting this audience on the basis of age (young or elderly women), income levels and integration into society, professional activity (such as female entrepreneurs). This permits a better definition of programme content, and allows public authorities to define specific content to improve women's financial strategy. These programmes seek especially to increase women's financial inclusion, improve their use of formal saving products, support them in planning for retirement, and help them avoid over-indebtedness. Effective programme design that takes into account the financial literacy needs of women, and that develops appropriate resources and delivery methods, has been shown to lead to behavioural change.

In Colombia, in 2007 the Presidential Agency for Social Action and International Cooperation launched the programme "*Mujeres Ahorradoras en Acción*" (MAA) (Women as active savers), to encourage the use of formal saving products by women. Based on the results of the Colombian Report presented to the UN Committee on the Elimination of Discrimination against Women (CEDAW), the Colombian authorities decided to address the financial needs of low-income women. The MAA programme incorporates both training and support for low income women living in regions affected by high levels of poverty and violence. Its objective is the promotion of women's socio-economic development, the strengthening of their productive activities and the generation of a culture of savings and payment through the formal system. The programme focuses on financial education, as well as business training supported by microcredit lending. Within this programme, women have the opportunity to open a basic saving account in the *Banco Agrario* (a public bank), which provides special benefits to programme participants in order to encourage them to participate and continue saving. The programme has been evaluated, and has proven to be an effective initiative to change the behaviour of the target audience. MAA successfully promoted the use of savings products and reduced the use of informal credit providers from 19.3% in 2007 to 5.3% in 2011.

c) Seniors

Demographic changes determining a sharp increase of the proportion of the elderly population and reforms of retirement benefits systems have called for specific financial education programmes addressing retirees. In some countries, this target groups has become one of the priority actions of the national strategy for financial education.

In Canada**,** the Financial Consumer Agency (FCAC) released Strengthening Seniors' Financial Literacy in October 2014, a strategy responding specifically to the unique financial literacy needs of seniors, based on research and consultation. The research showed that while Canada has one of the lowest rates of seniors living below the poverty line, Canadian seniors are facing higher debt levels and a growing rate of bankruptcy. The number of Canadians 65 and older is growing rapidly, from 15% of the population in 2013 to an estimated 25% by 2036. At the same time, many Canadians do not understand the details of programmes that support seniors. To make appropriate decisions they must understand how government benefits, employer-sponsored pensions, employment income, investments and personal savings all fit into their overall retirement income. Another factor taken into consideration is that Canadians now have more flexibility when they will start to receive government benefits, so they need access to information and tools to understand the implications of their choices. Initiatives are underway to support this learning. The strategy sets out four goals: engage more Canadians in preparing financially for their senior years: help current seniors plan and manage their financial affairs; improve understanding of and access to public benefits for seniors; and increase tools to combat financial abuse of seniors.

Through consultations, the following factors were identified as important considerations: the need to take into account the diversity of the seniors population and the notion that 'one size does not fit all' in terms of how to support people's financial literacy; the importance of early planning and preparation for senior years and of undertaking research to better understand target populations, their needs, and how to best develop effective programmes and communications. Other factors include: the need to simplify documents, processes and financial education materials as well as emphasizing collaboration and sharing to make the most effective use of resources. And finally, the view that financial literacy is not a complete solution and that complementary initiatives in consumer protection and other policy areas could help support the strategy.

Several initiatives are underway to support the strategy. The Canadian Bankers Association has launched "Your Money Seniors," training sessions run by volunteer bankers with consumers and caregivers about fraud, financial abuse and cash management for seniors. This Association is also leading efforts to make available more information about Powers of Attorney and joint deposit accounts for those clients who want to give someone else the authority to do banking for them. This commitment includes staff training. The credit union movement in Canada, under the umbrella organisation Credit Union Central Canada, has released a comprehensive programme aimed at training frontline workers to recognize, review and respond to possible abuse of older adults.

Case studies

The following examples show how effective and successful financial education programmes can take place through a variety of delivery tools (for case studies on the introduction of financial education in schools, please refer to the section at the end of this chapter).

Facilitate access to information and education

The experience of the Central Bank of Brazil is an example of the use of technological tools to target households in condition of extreme poverty, also thanks to the role of respected community leaders, in the context of a nation-wide social programme to fight poverty.

The Netherlands and Turkey are two examples of targeted communication and outreach. The experience of the Netherlands exemplifies a multi-stakeholder approach to implementing a National Strategy for Financial Education in which partners from the business community, government, academia and civil society cooperate in two successful annual national events. The example of Turkey illustrates how the outreach and communication efforts of the public institutions implementing the national strategy can address the general population focusing on national macroeconomic priorities.

Take into account timing and location and harness existing learning environments

The examples of Singapore and the training of journalists in Turkey show successful experiences in which public institutions harness existing networks to increase the effectiveness of their financial education outreach. In Singapore this is achieved by partnering with an established institution that has an expertise in conducting continuing education and training for working adults to conduct workplace programmes in the country. In Turkey, journalists are trained by the central bank, given their role of providers of financial information, to obtain effective coverage of financial education topics and reinforce the impact of the national strategy's programmes.

In South Africa, the financial sector regulator partners with a trusted intermediary, the national association of churches, in order to deliver financial education on a very sensitive cultural practice that determines unsustainable levels of over-indebtedness among a specific target group.

Support individual engagement, motivation and decision-making

The case study of Hong Kong, China, shows how institutions are increasingly combining traditional approaches to audience segmentation, based on sociodemographic characteristics and measurement surveys, with new tools that can also be borrowed from other policy areas, such as health, in order to more effectively identify target audiences that are homogenous and will react similarly to a financial education intervention.

In Portugal, the National Council of Financial Supervisors in partnership with the Ministry of Education organises a national competition for schools, with a view to encourage teaching of financial education and raise students' awareness on the importance of financial literacy.

The last example of Turkey shows how elements such as self-esteem of children can be harnessed to support the effectiveness of a financial education programme provided through art lessons.

CASE STUDY: BRAZIL

The use of technology to address the needs of poor household recipients of social programmes

The Citizen Financial Education Project (*Projeto Educação Financeira Cidadã*) seeks to promote the financial education of young people and adults in poverty and extreme poverty thanks to the use of technological resources.

The project is the result of a strategic partnership among the Central Bank of Brazil (BCB), which coordinates and is responsible for the project, the Brazilian Network of Community Banks (civil society organisations hired by financial institutions as non-banking agents for their respective communities), *Fundación Capital,* and the University of Bahia within its Solidarity Economy and Territorial Development department (ITES/UFBA).

The project is expected to reach 5000 families within ten Brazilian low-income communities. These ten communities have been chosen among those targeted in the context of the Unified Database of Social Programmes of the Brazilian Federal Government (*Cadastro Único de Programas Sociais do Governo Federal*), that comprises initiatives such as the conditional fund transfer programme Bolsa Familia.

The programme is delivered through tablet computers that have been previously loaded exclusively with self-instructional financial education content. Such content focuses on asset accumulation and savings within the communities supported by community banks. The programme comprises five modules: "ABC of Economy", which includes tips on savings; "I take good care of my money", which emphasizes the importance of family and personal budgeting; "My bank", covering financial and non-financial banking products and services; "I want to practice", with simulations of ATM operations; and, finally, "*Bolsa-Familia*", with information on the functioning of the conditional cash transfer programme. The modules provide basic notions of financial literacy and have been designed taking into accounts behavioural elements. The contents include, for example, guidance on the consumption of financial products and services, basic information on the functioning of credit unions, the management of personal finance, and, especially, access to credit.

The implementation of this intervention involves the circulation of the tablets among the targeted families, a process that is coordinated by local agents recruited by ITES/UFBA. Among the criteria used for selection, it is important to highlight that local agents must either be community leaders or members of community institutions that already promote social work, because it is fundamental that local agents be well respected within their communities. In addition to promoting the distribution and circulation of the tablets, local agents collect quantitative evidence for the evaluation phase of the project.

Evaluation

From its design phase the project includes an impact assessment conducted through a randomised controlled trial. The families have been divided into two groups: a control group and a treatment group. Individuals from the control group are not exposed to the financial education intervention through the tablet and only participate directly in the evaluation by responding to a questionnaire administered by the local agents. On the other hand, individuals from the treatment group receive financial education through the tablet and also respond to the questionnaire. The quantitative questionnaire aims to assess financial behaviour, knowledge and attitudes. To ensure that the two groups are representative of the sample, they were randomly selected from the Single Registry of Social Programmes of the Federal Government.

This impact evaluation, led by the central bank, aims to verify what kind of changes will have taken place among the treatment group as a result of the intervention. It also aims to understand more thoroughly how the target population relates to financial issues.

The impact evaluation has been designed to assess, in particular, the families' understanding of financial products and services, and how they deal with financial products and services on a daily basis. In addition, the evaluation also seeks to provide a better understanding of supply-side factors, especially whether there is a need for products and services that better suit the needs of families in conditions of poverty or extreme poverty.

Financial Citizenship

The research involved in CFEP is also very important for the central bank in order to better understand the impact of its financial inclusion policies and programmes. The Citizen Financial Education Project is part of the Financial Citizenship Programme of the Central Bank, which seeks to contribute, through appropriate financial inclusion, to the efficiency of the national financial system and to the maintenance of Brazil's economic stability.

🕮 CASE STUDY: THE NETHERLANDS

The national strategy's stakeholders joining forces to target students and to foster pension awareness

National Money Week

The National Money Week for primary school children brings together a high concentration of initiatives for lessons about dealing with money. During the week, a large number of schools, businesses, NGOs, broadcasting companies and public authorities offer a programme of activities for children, such as guest lessons in schools, museum visits, theatre, teaching programmes, debates, newspapers in the class room and television programmes. The concentration of activities in one week leads to a lot of attention through the media and in schools. An accompanying effect is that the participants of the National Money Week meet and inspire each other, as a result of which further collaboration in the area of teaching financial literacy to children originates. The National Money Week is considered to have had a very positive impact on both children and participating organisations. During the fourth edition of the National Money Week – which took place in 2014 – 37% of all primary schools actively participated.

Pension3day

In the Netherlands, many people lack basic understanding of pension schemes – including their own. They perceive pensions as a complicated topic and they have the tendency to postpone looking at their retirement income. At the same time, responsibility is shifting from government and employers to individuals. Pension funds initiatives, and those developed by the government and employers have proven to be unable to increase pension awareness. In an effort to join forces in this area, the Money Wise Platform organises the *Pension3day*, during which pension funds, employers, government, insurance companies and non-profit organisations stimulate people to look into their pension. In the fourth edition of the *Pension3day* in 2014, more than 250 different organisations throughout the country participated. 67% of 30 to 55-year-olds and 79% of the 55 to 67-year-olds indicated that they heard about pensions in the media during the *Pension3day*. 21% of the 30 to 55-year-olds and 23% of the 55 to 67-year-olds have heard about the *Pension3day*. Some 38% of them took action as a result of this, or intend to take action. Many employers used a pension lunch as an easily accessible way to inform their employees about their own pension. Online tools were also used to give people specific tips that help them improve their pension situation.

CASE STUDY: TURKEY

A national awareness campaign supporting the country's long-term macroeconomic goals

In 2014, Turkey started the implementation of the National Strategy for Financial Access, Financial Education and Financial Consumer Protection. One characteristic of the National Strategy is its focus on ensuring that financial education and training fit into the country's long-term macroeconomic goals, which includes increasing the domestic savings rate, which has been low for a while. The Strategy bases many of its goals on the findings of a national survey carried out by the World Bank and the Capital Markets Board that found 52 percent of the population look less than six months ahead when they plan their finances. The Strategy covers the years 2014 to 2017 and gives the Capital Markets Board responsibility for monitoring developments in financial literacy through subsequent polling and surveys. Similarly, the Banking Regulation and Supervision Agency, in charge of coordinating the financial consumer protection action plan within the strategy, initiated a financial awareness project in 2013. Under this project, three public spotlights on personal finance and savings, effective credit card management and security issues of banking products and services are designed and aired on TV channels to reach a large base of financial consumers.

The Central Bank of the Republic of Turkey is one of the institutions responsible for two actions of the Strategy and is developing outreach and communication strategies to improve the financial literacy of two key segments: young people and the media.

"Savings Start with the Kurus" Campaign

One of the pilot projects serving the goal of higher savings rates is a campaign focused on the kurus, the lowest-denomination coin. Under the slogan "Savings Start with the Kurus", this project run by the Central Bank of the Republic of Turkey aims to raise awareness of savings among children aged between eight and 12. Turkey's population is relatively young and the campaign seeks to encourage the habit of saving at an early age through activities designed to promote the importance of the kurus. The campaign is additionally a response to underutilisation of kurus coins in daily transactions. The Central Bank's campaign is an attempt to change public behaviour by encouraging use of the kurus.

The campaign is supported by a range of educational materials and games and was launched in 2013 with two events. Firstly at the International Children's Festival organised by the TRT (Turkish Radio and Television Agency) held on April 14- 24 2013 in İzmir, the CBRT provided attending children with:

- Animated cartoons on savings and kurus;
- The opportunity to buy pouches containing 1 lira in coins (100 kurus);
- A sound and light show to promote the use of money boxes; and
- A present bag containing "Kurus Champion" certificates and other materials.

The CBRT also attended the 2nd Child and Youth Finance International Summit on 7-9 May 2013, presenting:

- Educational material and a range of English-language publications targeted at over-18s
- A workshop with 140 children and 400 participants to elicit views and information on financial education strategies,
- Central Bank money box, bookmarks, pens, erasers, a "Kurus Champion" rosette.

In the scope of the kurus campaign, the CBRT also set up booths in the 1st Financial Literacy and Access Summit on 22 May 2013 and the 5th İzmir Economic Congress on 30 October -1 November 2013.

In 2014, cooperation began with TRT through the public broadcaster's Children's Magazine publication. The monthly magazine now includes a regular cartoon strip aimed at explaining savings, sensible spending and use of the kurus to children aged from eight to 12 through the adventures of the Kurus Family.

Following positive feedback from the 2013 event, the CBRT introduced a pilot version of a computer game based on collecting kurus as well as providing animated cartoons on savings and kurus themes, rosettes, and bookmarks at the 2014 International Children's Festival organised by the TRT held in Gaziantep.

Throughout 2013 and 2014, the CBRT visited 136 primary schools, distributing educational materials, holding classes on the importance of savings, and showing cartoons. The students were also invited to contribute stories about savings and the kurus for evaluation in the later stages of the campaign.

The project to change attitudes toward the kurus and encourage savings at an early age is still continuing. Later phases will include fostering contact among students based on the stories they have written and the development of educational materials aimed at older age groups.

Take into account timing and location and harness existing learning environments

🕮 CASE STUDY: TURKEY

Harnessing existing networks to foster outreach

National financial education requires that media coverage of financial matters is conceptually accurate and clearly explained. The media represent a major channel of information. The Turkish National Strategy addresses this through action plans calling for "Education of Media Employees on Required Financial Subjects" with the goal of building capacity to produce effective, accurate and clear coverage of financial topics.

As the responsible body tasked with delivering this goal, the CBRT has set a priority goal of increasing the ability of economics reporters at various media companies to understand CBRT statements and macroeconomic data by providing training on basic economic and central banking concepts, aiming at news reports that are clearer and more easily understood by the public at large.

A total of four one-day training sessions were held in Istanbul and Ankara, attended by approximately 70 reporters from domestic news agencies. The participants were given training in basic economic concepts, structural aspects of Turkish economy, the macroeconomic policy and the financial markets. They were also given practical training in accessing data through official databases and interpreting them. The training will continue with updates and adjustments based on feedback from participants.

🕮 CASE STUDY: SINGAPORE

Partnering with a higher education institution to deliver workplace financial education

MoneySENSE is the national financial education programme in Singapore. It is spearheaded by the Financial Education Steering Committee (FESC). The Monetary Authority of Singapore chairs the FESC, which comprises representatives from several public sector agencies and government ministries, including the Ministry of Education, Ministry of Health, Ministry of Manpower, Ministry of Social and Family Development, Central Provident Fund Board, National Library Board and People's Association.

In 2012, MoneySENSE and Singapore Polytechnic collaborated to form the MoneySENSE-Singapore Polytechnic Institute for Financial Literacy (IFL). Singapore Polytechnic is an Institute of Higher Learning with an established track record in delivering continuing education and training to working adults.

Fully funded by MoneySENSE, the IFL delivers financial education to working adults and works with community organisations to develop and conduct customised programmes for lower income Singaporeans. The IFL utilises different delivery mechanisms such as workplace talks and workshops, as well as e-learning modules. Some of the topics covered by the IFL include:

- Making the Most of Your Money;
- Financial Planning Begins Now;
- Are You Borrowing Too Much?
- Do I Need Every Type of Insurance?
- Building Your Nest Egg;
- Investment and Financial Products.

Since its inception in July 2012, the IFL has conducted over 500 talks and workshops per year, compared to about 20 annually before the IFL was set up.

Singapore Polytechnic's strong network of practitioners and contacts as well as dedicated team of trainers has allowed MoneySENSE to substantially extend its outreach to the workplace. This reduces the reliance on industry volunteers to deliver training programmes and allows for a more sustainable outreach over time.

🕮 CASE STUDY: SOUTH AFRICA

Partnering with a trusted intermediary to reach out to a specific target group on funeral expenses

In South Africa it is a cultural practice specifically among Black South Africans to provide for lavish and expensive funerals. These funerals often leave the bereaved heavily in debt. As a result many South African's having multiple funeral policies to pay for such events.. The FSB has been attempting to address the issue of lavish funerals, funeral polices and the associated costs with limited success. In 2012 a recommendation from Parliament was that the FSB work with the South African Council of Churches (SACC) in the delivery of workshops to members of the religious congregations. The majority of churches with congregants who pay for these types of funerals are affiliates of the SACC, the largest religious body in South Africa.

In 2012 the FSB conducted a pilot with the SACC. This included training SACC facilitators to deliver workshops on behalf of the FSB to congregants of their respective parishes. As the project was a joint initiative with the SACC, congregants were more receptive to the workshops. The success of the initial pilot saw the project rolled out nationally. In 2013-2014 40 national workshops reaching eight of the nine provinces were conducted reaching a total of 1102 congregants. In 2015 a proposal for continuing the project is being considered with the focus now being on pastors in addition to congregants.

Support individual engagement, motivation and decision-making

🕮 CASE STUDY: HONG KONG, CHINA

The definition of target audiences based on a model used in public health interventions

In Hong Kong, China, the Investor Education Centre (IEC), established in November 2012 by the four financial regulators, designed the financial education strategy for the territory[14].

The IEC has always adopted an evidence-based approach to the definition of the target audiences of its financial education programmes, based on the results of financial literacy measurement surveys and of public consultations (IEC, 2013). During the revision of the financial education policies in the territory conducted in 2014, the IEC decided to further refine this approach and to use in addition a prioritisation model borrowed from the fields of public health interventions and marketing.

This audience segmentation approach uses psycho-demographic analysis to define target audiences that are internally homogenous (people inside each group will react approximately in the same way to external actions) and externally heterogeneous (they will react differently compared to other discrete groups in society).

The elements considered in the definition of the segments are shown in the table below.

The TARPARE model (Donovan et al, 1999)

T	**T**otal number: it is assumed that the greater the number of people in a segment, the higher its priority
AR	Proportion of **A**t-**R**isk people within the segment
P	**P**ersuasibility of the segment: the easier it is to change behaviours in a segment, the more likely to achieve behavioural change, and as such the higher its priority
A	**A**ccessibility of the target audience: the easier it is to access a segment via mass communication or dedicated delivery channels, the more likely an effective outcome of public policy intervention
R	**R**esources required to meet the need of the target audience, in terms of financial, human, and structural resources needed to address the segment and serve its needs
E	**E**quity: the need to take into consideration social justice and target specific disadvantaged segments. These groups might represent a small proportion of society but might be granted special programmes based on this criterion.

14 http://www.hkiec.hk/web/en/about-iec/hksfl/index.html

The use of this approach, coupled with more traditional methods such as measurement surveys, desk research, and focus groups, has brought the IEC to suggest new target groups and to establish their priority based on a multi-factor weighted scoring system. The new suggested target groups are: formal education system (primary, secondary and tertiary students), working adults (new to employment, pre-retirees), parents with dependents (new-to-be parents; parents with school aged children; single parents; new to Hong Kong parents), and retirees with a retirement fund. It should be noted that IEC resources will be available to all members of the public. The Hong Kong strategy for financial literacy launched in late 2015 highlights audiences not automatically covered in the IEC target group list above.

The TARPARE model is also used to assign a level of priority to these segments, thanks to the definition of priority factors associated to each element of the model:

Elements		Priority factors
T	**T**otal number	Segment size
AR	Proportion of **At**-**R**isk people	Needs: gap between ideal and actual level of the financial competences
P	**P**ersuasibility	Willingness to change: tendency of individuals to change their behaviours, levels of engagement of the individuals in the segment Ability to change: ability of individuals to move towards the ideal competency level after intervention
A	**A**ccessibility	Ability of the IEC to reach out to the segment via the key delivery channels
R	**R**esources	
E	**E**quity	N.A.
Additional factor		Lack of quality providers for the segment: the lower the penetration, the higher the prioritisation.

The application of these priority factors to the identified segments will allow the IEC to prioritise certain groups, based on their need for public policy intervention.

CASE STUDY: PORTUGAL

A national contest to promote financial education projects in schools

The Portuguese National Plan for Financial Education is led by the National Council of Financial Supervisors, composed of the three financial supervisors – the Central Bank (Banco de Portugal), the Portuguese Securities Market Commission and the Portuguese Insurance and Pension Funds Supervisory Authority – with the contribution of a significant number of stakeholders.

Since 2012, the National Council of Financial Supervisors, in partnership with the Ministry of Education and Science, has organised an annual, national competition for schools, the *Todos Contam* competition. The purpose of this competition is the promotion of financial education projects in schools, covering all stages of education.

The competition is launched before the beginning of the school year and the terms of reference are disseminated to the schools at a national level. The schools apply with the financial education projects to be implemented throughout the school year.

The competition awards five prizes to the best financial education projects to be implemented in schools: one for kindergarten, one for each of the three stages of basic education and one for secondary education.

The schools with the winning projects are announced on the 31st October, at the Financial Literacy Day, a financial education awareness-raising event organised annually by the National Council of Financial Supervisors, in partnership with the stakeholders of the Portuguese National Plan.

The financial education projects submitted to the *Todos Contam* competition must be based on the Core Competencies for Financial Education for Kindergarten, Basic Education and Secondary Education, a document prepared in collaboration between the three financial supervisors and the Ministry of Education and Science, and adopted by this Ministry as the reference for financial education in schools.

On the basis of the Core Competencies for Financial Education, projects submitted to the competition must be designed to:

- Raise students awareness of the importance of financial literacy on a day-to-day basis;
- Develop financial knowledge and skills among students;
- Promote appropriate financial attitudes and behaviours,
- Promote the creation of savings habits;
- Encourage the use of the contents and resources available on the website of the National Plan of Financial Education – *Todos Contam* website.

The schools' financial education projects must also be in line with the Principles for Financial Education Initiatives. These Principles set out in particular that, in the scope of the National Plan, private financial institutions can only participate in financial education initiatives through the respective sectoral associations.

The assessment of the applications and the selection of the best projects for each level of education is the responsibility of a selection panel. The members of the selection panel consider each application based on all the assessment criteria of the terms of reference of the *Todos Contam* competition:

- Educational quality;
- Scientific quality in the development of subjects in line with the Core Competencies for Financial Education;
- Creativity and relevance;
- Involvement of the academic community;
- Viability and feasibility;
- Use of the *Todos Contam* website.

The five prizes in this competition consist of books and school materials and are awarded according to a two-stage process: half of the prize is granted at the start of the school year, while the other half is only given at end and subject to confirmation by the selection panel that the project goals were met.

To emphasise the commitment of the National Council of Financial Supervisors to disseminate financial education in schools, all the prizes are delivered personally by the heads of the three financial supervisors – the Governor of Banco de Portugal, the Chairman of the Securities Market Commission or the Chairman of the Insurance and Pension Funds Supervisory Authority –, during a visit organised by the financial supervisors and the Ministry of Education and Science to each of the winning schools. During these visits, the heads of the financial supervisors highlight the importance of financial education and respond to questions raised by the students.

CASE STUDY: TURKEY

Exploiting children's creativity to teach financial education

Financial literacy is integrated into various courses in schools in Turkey, including mathematics, life sciences, social studies, technology and design. One of the initiatives undertaken by the Ministry of National Education is the "Project on Social and Financial Education Through Art", carried out in primary and secondary schools with the financial support of a commercial deposit bank, namely the Turkish Economy Bank, in cooperation with the UNICEF National Committee of Turkey. This project was launched in June 2013 and has had an impact on nearly 12 million children from about 45000 schools.

The objectives of the project include reinforcing the self-esteem of children and youngsters, increase their autonomy, and encourage them to get involved with social and financial processes affecting their own lives and the society they live in. It is also intended to contribute to children's social development as well as their awareness on financial issues. In order to meet these objectives, social and financial literacy issues are discussed in compulsory and elective courses of visual arts and music lessons.

Activities within the scope of the project

A. Activities in the educational programme
   1. The inclusion of social and financial issues in the curriculum development studies on Visual Arts and Music classes;
   2. Developing teaching materials for these educational programmes;
   3. Organising training programmes for trainers.

B. Extra-Curricular Activities
   1. Developing supplementary teaching materials for elementary students;
   2. Implementation of these supplementary materials in selected schools;
   3. Dissemination of developed teaching/training materials across the country;
   4. Conducting an impact assessment analysis.

Completed activities within the scope of the project

1. Primary Education Institutions' (Primary and Secondary schools) Visual Arts Course Curriculum (1-8 Grades) which was prepared within the scope of the project and gradually implemented from the 2014-2015 academic year of 1st and 5th grades.
2. Primary Education Institutions' (Secondary Schools and Religious Vocational Secondary Schools) Optional Visual Arts Curriculum (for 5th, 6th, 7th and 8th grades) and gradually implemented from the 2014-2015 academic year of 5th, 6th and 7th grades.
3. Within the scope of the project, a five-day training session for trainers was organised in August 2014. Sixteen visual arts teachers were trained along with academics and experts from the General Directorate of Primary Education.
4. 3-day-long training sessions were simultaneously provided to teachers from 81 provinces in 10 regions in Turkey by the teacher trainers.

Ongoing studies within the project

1. The preparatory studies of the draft curriculum regarding compulsory music lessons in 1st -8th grades and elective music courses in 5th -8th grades classes are about to be completed.
2. Studies to develop additional materials for visual arts course are in progress.
3. In-service trainings for music course teachers are being planned.

Monitoring and evaluation studies regarding the implementation in schools are in progress.

EVALUATION OF FINANCIAL EDUCATION PROGRAMMES

Monitoring and evaluation of programmes are becoming a more common practice (Atkinson et al, 2015 forthcoming; Garcia et al., 2013; Messy and Monticone, 2012). More national strategies also include evaluation of programmes as an essential component of roadmap and action plans, but there is however still room for improvement. International work on evaluation methodology has supported public authorities and programme developers in this domain particularly through the work of the Russian/World Bank/OECD Trust Fund[1]; it also encouraged the sharing of evidence, in particular through the platform provided by the OECD/INFE (see Box 9) and the global database of evaluated financial education programmes that is currently being developed.

At the programme level, evaluation evidence is being used to ascertain whether a programme is effective, to ensure that resources are being well spent, and to identify areas for improvement as well as replicable practices. More broadly speaking, evaluation evidence is valuable to the implementation of national strategies as it can be used to inform future funding decisions and to allocate resources across the different programmes. Policy makers and the authorities in charge of the implementation of the national strategy can also use the results of several evaluations to inform the revision of the overall priorities of the strategy and of its main delivery tools.

Policy makers now recognise that reporting is also an important component of monitoring and evaluation. Whilst it is still the case that most evaluation results are not widely disseminated there has been considerable support for the OECD/INFE initiative to create a dedicated evaluation database. Public authorities involved in the implementation of financial education programmes have realised that, thanks to the increasing amount of valuable evidence, the results of evaluation can usefully be disseminated to stakeholders involved in programmes as well as those implementing similar programmes elsewhere. This is a welcome development, as it enhances national and international knowledge on effective practices and promotes accountability and efficiency amongst financial education providers.

[1] See also the website of the Trust Fund (https://www.finlitedu.org/) as well as the OECD web page on evaluation of financial education programmes http://www.oecd.org/daf/fin/financial-education/evaluatingfinancialeducationprogrammes.htm.

Box 5.4 Evaluation of financial education programmes: instruments and tools developed by the OECD/INFE

The OECD/INFE has developed significant work in relation to evaluating financial education programmes, including the collection of countries' experiences, challenges, and lessons learnt in evaluating their financial education programmes. Based on this evidence and the lessons learnt, the OECD/INFE has developed policy instruments on the evaluation of financial education programmes, including the INFE High-level Principles on Evaluation of Financial Education Programmes (OECD/INFE, 2012a) and two non-technical OECD/INFE Guides to Evaluation (OECD/INFE 2010a; OECD/INFE 2010b). In 2015, the OECD/INFE has also begun the design of a practical checklist for the evaluation of financial education programmes, as well as the development of a global database of evaluated financial education programmes.

The INFE High-level Principles on Evaluation

The INFE High-level Principles were designed to highlight the importance of evaluation to policy makers, programme developers and to the stakeholders active in financial education:

1. They identify evaluation as an essential component of every financial education programme;
2. They provide guidance on how to set a budget for evaluation and how to reduce costs;
3. They present the role of external evaluators, to add credibility, skills and independence;
4. They stress the need for appropriate evaluation design, aligned with programme's objectives, size and length, target audience, delivery method;
5. They highlight how to attribute change to the programme, and the best ways to infer causal relationship between the programme intervention and the change observed;
6. They finally focus on the importance of reporting data, including the negative findings, to properly inform future programme design.

OECD/INFE Guides to Evaluation

The OECD/INFE has also developed two practical guides to evaluating financial education programmes designed to help project managers, educators and stakeholders in monitoring and evaluating their financial education programmes and choosing the best evaluation methods (one provides an overview, whilst the other is more detailed). The guides address practical needs and suggest ways to choose and conduct the most appropriate evaluation based on the programme features and the evaluators' needs, identifying benefits and limitations of a number of evaluation/research methods.

The Checklist for the Evaluation of Financial Education Programmes

The OECD/INFE is also developing a checklist that is aimed at offering a 'self-assessment' tool for policy makers and other organisations involved in the development and/or monitoring/evaluation of financial education programmes. It is intended to be used at the beginning of programme design and development and again at key points throughout the delivery process. The Checklist covers both monitoring and evaluation.

Case studies

The following case studies show how programme evaluation can provide results that go beyond the effectiveness and functioning of a specific delivery channel. In the case of Malaysia, the evaluation of a programme addressing personal debt management has helped public authorities understand the effects of an intervention on different aspects of financial literacy, namely knowledge, attitudes and behaviours. In Spain, the evaluation of the national pilot programme of financial education in the formal school curriculum has allowed testing the effectiveness of the pedagogical materials developed as well as measuring the effects on the financial literacy of students. It also served to foster dialogue and cooperation among teachers and national/regional authorities, and has confirmed the importance of financial education in schools for the Spanish national strategy.

🕮 CASE STUDY: MALAYSIA

A programme evaluation providing insights into levels of knowledge and behavioural change

Pengurusan Wang Ringgit Anda (POWER!) programme is a financial capability programme developed by Bank Negara Malaysia (BNM) and its subsidiary, the Credit Counselling and Debt Management Agency (AKPK), targeted at young individuals and first-time borrowers aged 18-30 years.

Introduced in January 2011, it provides participants with skills and knowledge to achieve their financial goals, and protect themselves from over-indebtedness through better borrowing decisions. The programme focuses on empowering participants on financial management as well as practicing prudent debt acquisition.

The programme covers six main areas: Cash flow management, basics of loans, credit card usage, buying a car, buying a house and the importance of debt management.

The programme has attracted about 300,000 consumers to-date delivered mainly via face-to-face sessions as well as through an online programme.

Evaluation

Pre- and post-assessment for the programme indicated an increase of 12% in the level of knowledge and skills. There is also a plan to continuously assess the impact of POWER! programme over a longer term period. An online impact evaluation was conducted in May-June 2013 by BNM in collaboration with a local university, *Universiti Putra Malaysia* (UPM). The evaluation involved analysis of the financial literacy of 677 adult consumers who have attended the POWER! programme (treated group) against a control group with 641 respondents who have not attended the programme. The respondents for the treated group are chosen among participants who attended the POWER! programme six month (or more) prior to participating in the evaluation, in order to assess the impact of the programme over a longer term period.

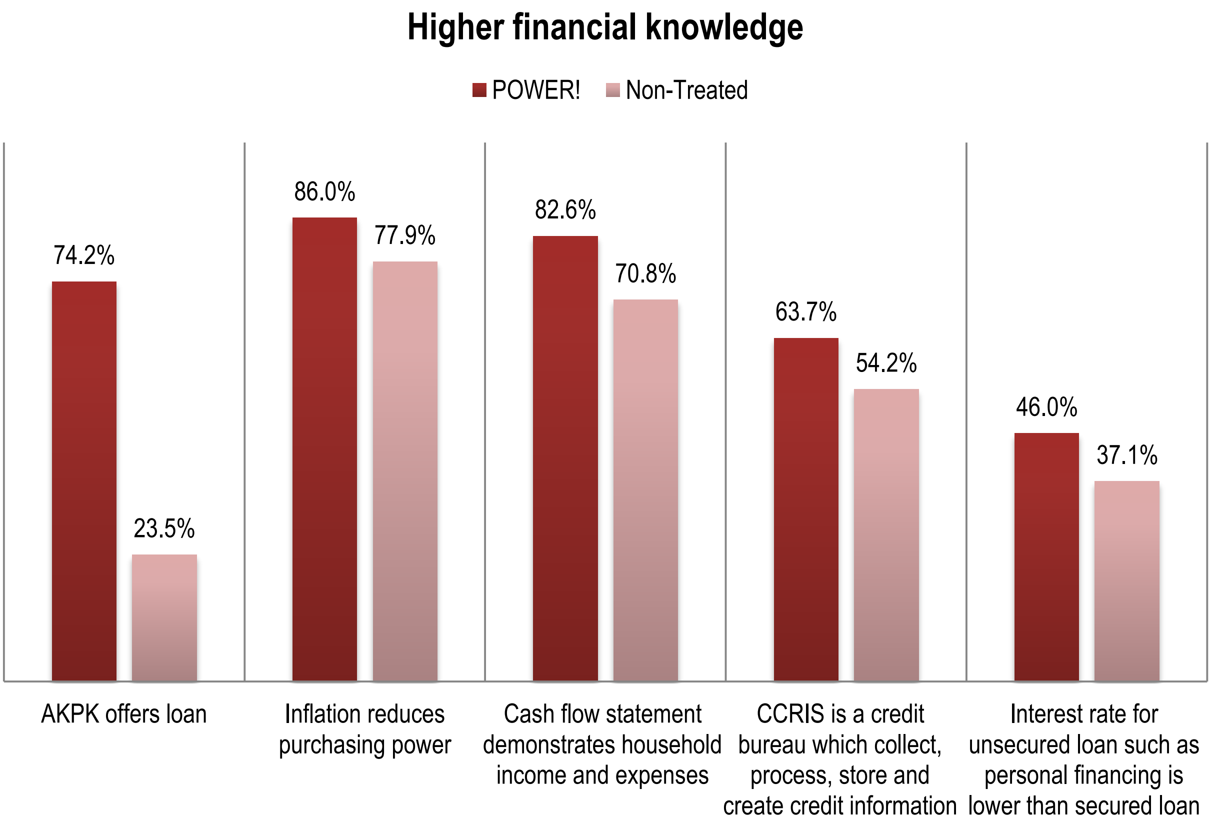
The evaluation variables were categorised into 3 domains:

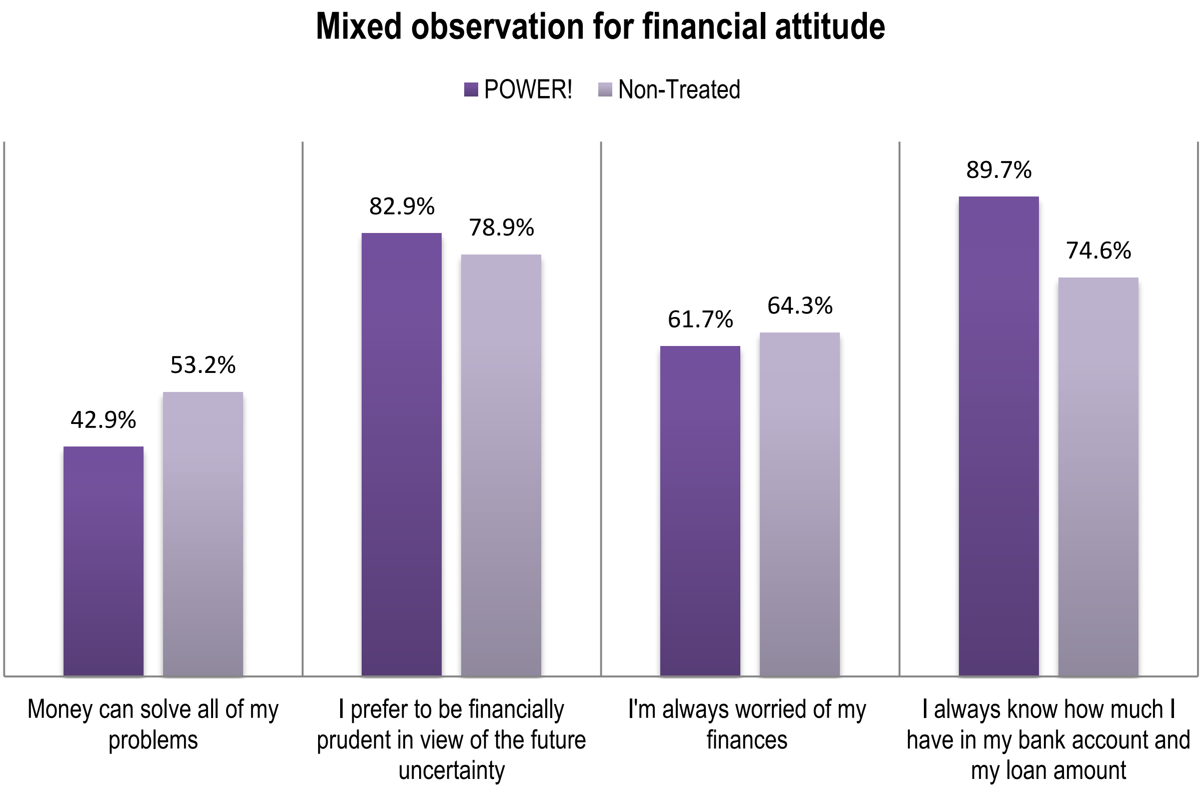
- Knowledge, which measures consumers' information related to personal finance;
- Attitude, which measures consumers' perception towards personal finance; and
- Behaviour, which measures consumers' financial capability (habits and actions).

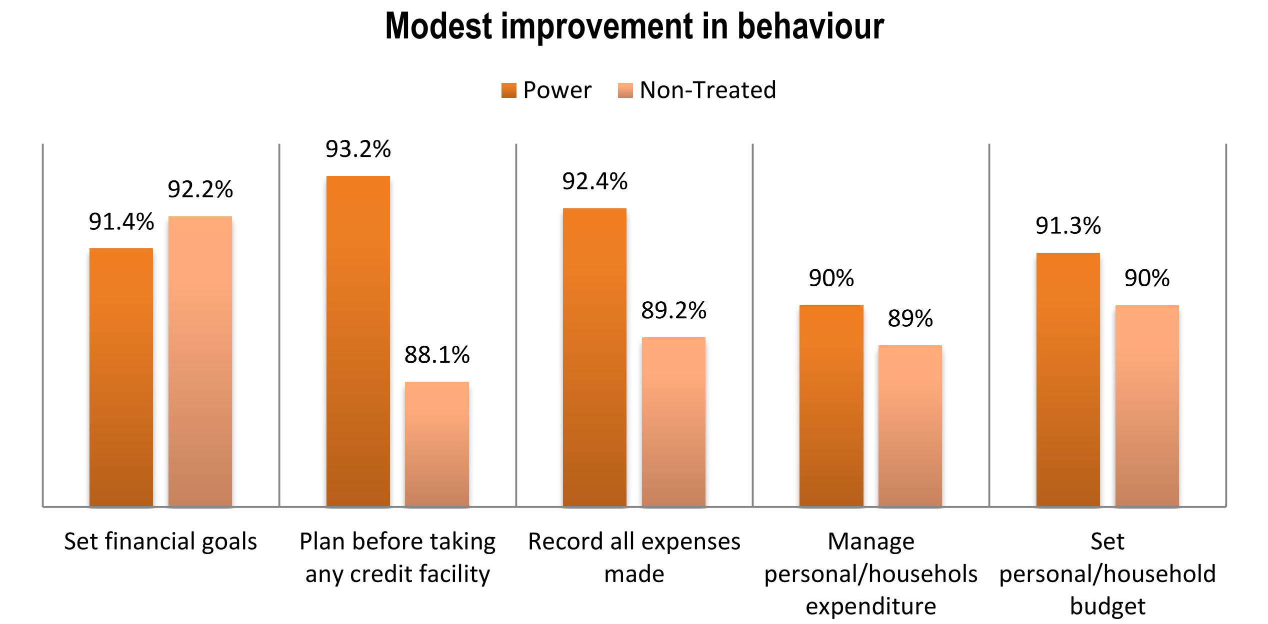
Key findings

The evaluation also allowed Malaysian authorities to gather useful insights on the programme's impact on the financial literacy of participants (see also the graphs):

- POWER! participants demonstrated higher levels of financial knowledge
- Mixed results were observed for financial attitudes
- There were no clear behavioural differences between the two groups


Higher financial knowledge
POWER!
Non-Treated
74.2%
23.5%
86.0%
77.9%
82.6%
70.8%
63.7%
54.2%
46.0%
37.1%
AKPK offers loan
Inflation reduces purchasing power
Cash flow statement demonstrates household income and expenses
CCRIS is a credit bureau which collect, process, store and create credit information
Interest rate for unsecured loan such as personal financing is lower than secured loan


Mixed observation for financial attitude
POWER!
Non-Treated
42.9%
53.2%
82.9%
78.9%
61.7%
64.3%
89.7%
74.6%
Money can solve all of my problems
I prefer to be financially prudent in view of the future uncertainty
I'm always worried of my finances
I always know how much I have in my bank account and my loan amount



In addition, the evaluation made it possible to obtain further understanding of participants' behaviours. While POWER! participants tend to view money as a means to an end, which is a desirable attitude, they have not demonstrated much difference in improvement of behaviour related to financial management.

Improvement to the programme

Based on the findings from the impact evaluation, BNM and AKPK have enhanced the POWER! Programme with refinements to contents, delivery and overall approach. The programme enhancement aims to ensure that the modules continue to be relevant and effective in meeting the needs of its target group of consumers in various life events and life stages, and in addressing pertinent and key vulnerable areas. The revised programmes have since been rolled out to other target groups such as workers and lower-income groups.

CASE STUDY: SPAIN

The evaluation of the programme for financial education in schools

The financial education programme in schools is one of the pillars of the Spanish national strategy for financial education and was included in the Financial Education Plan (2008-2012 edition). After implementing a first pilot programme during the school year 2010-2011, an evaluation was carried out to assess the impact of the programme and to learn from the first experience in order to inform the future roll-out of the programme (see also Hospido et al, 2015). The positive results contributed to the decision to continue implementing the programme and to broaden its scope. A second and more in depth evaluation was implemented in the course 2012-2013. Once again, the results justified the decision to continue with the programme.

This experience has demonstrated the importance of evaluating programmes within the national strategy, and consequently the second phase of the Financial Education Plan (2013-2017) (Bank of Spain and CNMV, 2012) strengthens the role of programme evaluations in order to assess the quality of the activities developed. In this context, a new evaluation was designed to test 4th year of secondary education pupils during the course 2014-2015. New schools participating in the programme are being selected to identify a control group, which will be tested before and after receiving financial education materials and a treatment group that will be tested after participating in the programme.

2010-2011 course: 32 schools and 2700 pupils involved

The evaluation was carried out by an independent expert in order to assess (i) possible improvements in the financial literacy levels of pupils, attitude and belief changes in respect of financial issues, and interest in and usefulness of the teaching materials used, and (ii) suitability of the training received by the teaching staff and the usefulness, appropriateness, and ease of use of the materials and resources available, among other aspects. The results of the assessment were encouraging, especially in terms of the positive acceptance of the programme and the favourable attitude of the pupils towards it. There was also evidence that the technical knowledge of the pupils had increased after completing the course.

The pupils considered that the subject was very useful in terms of their day-to-day life and their understanding of the environment they were living in. A positive change was identified regarding their attitudes and beliefs about financial issues. The teaching materials used were considered to be appropriate by both pupils and teaching staff, and the contents of the educational portal www.gepeese.es were considered to be particularly useful. It should be noted that both the teachers and those responsible for the implementation of the programme in the regional governments were in favour of including financial education in the school curriculum.

2012-2013 course: 452 schools and more than 43000 pupils involved

A survey following the methodology recommended by the OECD was introduced to track progress of financial literacy as well as to evaluate the quality of materials provided. The results of this evaluation show that:

- The financial literacy of pupils increased after completing the programme. Comparing the scores, the treatment group performed better than the control group.
- 88% of the teachers believed that the programme should be part of the compulsory curriculum.
- 90% of teachers involved in the programme thought that financial education contents must be included in the school curriculum.
- 42.8% of the teachers believed that the programme should be introduced in a cross-curricular fashion.
- 47% of the teachers considered that a higher number of hours should be devoted to the programme as they didn’t have enough time to complete it.
- Materials and resources available were positively evaluated- average higher than 7 out of 10.
- Teachers considered that the programme should be better adapted to the present financial situation the country faces.
- Motivation of the students in some cases was low, because the evaluation of the contents did not affect the final student´s grades at school.
- The global evaluation of the programme by teachers was high: between 7-8 out of 10.

The results of the evaluation are very encouraging but are not conclusive with respect to the best way to integrate financial education into the official school curriculum: as a stand-alone subject or into existing subjects such as mathematics, social science or citizenship. This will call for further evaluation of the next waves of programme implementation.

FINANCIAL EDUCATION FOR YOUTH AND THE ROLE OF SCHOOLS

Young people are the primary target group in the majority of national strategies. This is attributable to the advantages provided by reaching out to an entire generation before adulthood as well as on the potential positive spill-over effects on parents as well as the community (OECD, 2014a). Moreover, nurturing more sound financial culture and behaviours is easier in an environment conducive to learning, such as schools, and among young people.

Evidence from the PISA Financial Literacy Option

The PISA Financial Literacy Option conducted in 2012 (OECD, 2014b) provided for the first time an internationally comparable assessment of the financial literacy levels of students globally. The assessment was conducted in 18 participating countries and economies including 13 OECD members: Australia, the Flemish Community of Belgium, the Czech Republic, Estonia, France, Israel, Italy, New Zealand, Poland, the Slovak Republic, Slovenia, Spain and the United States; and five partner countries and economies: Colombia, Croatia, Latvia, the Russian Federation and Shanghai-China.

The analysis of students' performance indicates that more needs to be done to empower future generations with the tools to achieve financial well-being.

Only one in ten students across participating OECD countries and economies are able to tackle the hardest financial literacy tasks in PISA 2012. In contrast, 15% of students, on average, score below the baseline level of performance in the PISA financial literacy scale. These students can recognise the difference between needs and wants, make simple decisions about everyday spending, recognise the purpose of common financial documents, such as an invoice, and apply single and basic numerical operations (addition, subtraction or multiplication) in contexts that they are likely to have encountered personally.

Work conducted on the development of the PISA Financial Literacy framework and the analysis of the dataset also permitted the identification of five proficiency levels, as well as of a baseline (Level 2). Level 2 is considered to be the baseline of financial literacy proficiency, with students falling in this level displaying skills that are essential for full participation in society as an independent and responsible citizen. At this level, students begin to apply their knowledge to make financial decisions in contexts that are immediately relevant to them. They can recognise the value of a simple budget, and undertake a simple assessment of value-for-money, choosing between buying vegetables by the kilo or by the box, for example. Students at this level can also apply single basic numerical operations to answer financial questions, and can show an understanding of the relationships between different financial elements, such as the amount of use and the costs incurred.

Beyond their direct relevance and relationship with mathematics and reading, these financial literacy skills may also be beneficial for building other competencies that are becoming increasing important, such as critical thinking and problem solving.

Provision of financial education in a school context

The PISA Financial Literacy Option 2012, as well as regular surveys conducted within the OECD/INFE membership, revealed that a growing number of countries have introduced some form of financial education in the formal school curriculum (see Box 5.5 "Instruments to facilitate the introduction of financial education in the formal school curriculum"). Financial education is either introduced as a stand-alone subject or through a cross-curricular approach, in which financial education is taught as part of other subjects such as mathematics or social sciences. In a limited, but growing, number of economies financial education has become mandatory at the national level.

Box 5.5. Instruments to facilitate the introduction of financial education in the formal school curriculum

The introduction of financial education in the formal school curriculum may be useful to address the gaps identified through the PISA Financial Literacy Option but can be challenging in many ways. To meet the needs of the educational community and of public authorities at the national and local level, supranational organisations as well as several countries have developed nationally-approved or endorsed guidance to guide the introduction and implementation of financial education in schools.

The INFE Guidelines for Financial Education in Schools

The INFE Guidelines (OECD, 2014a) aim to provide high-level non-binding guidance to assist policy makers and interested stakeholders in designing, introducing and implementing efficient financial education programmes in schools. They also received the support of the Finance Ministers of the Asia Pacific Economic Cooperation (APEC) in 2012 (APEC, 2012). They are complemented by the Guidance on Learning Frameworks, defined as planned and coherent approaches to financial education in the formal school sector that define overall learning outcomes or standards for financial education. They were developed through a comprehensive consultative process which involved a very wide range of stakeholders.

The Guidelines indicate that financial education can be integrated into school curricula as part of a wider co-ordinated national strategy involving the community, should be targeted at every child within the jurisdiction and should be preceded by an assessment of the status and level of financial literacy of young people. They also recommend the involvement of the Ministry of Education and education stakeholders. Moreover, the Guidelines suggest flexible modalities capable of adapting to national and local circumstances.

The Brazilian Guidelines for Financial Education in Schools

The Guidelines for Financial Education in Schools approved by the National Committee on Financial Education (CONEF) and drafted in co-operation with stakeholders from federal and local education authorities and national financial institutions part of the Pedagogical Support Group, opted for a cross-curricular approach in the introduction of financial education in schools.

Schools are called to support the development of values, knowledge and skills that are important for driving an autonomous financial life. The Guidelines identify a group of objectives sought with the implementation of financial education school programmes, relating either to the spatial or the temporal dimension, or the balance of financial life.

The pedagogical section of the Guidelines underlines that financial education should foster dialogue between different areas of knowledge, and as such calls for it to be introduced as a theme that easily transits among different topics of the national curriculum. The Guidelines identify Environment, Work and Consumption, as well as Tax Education as the subjects that better allow for the integration of financial education topics.

Finally, in order to adapt to a federal educational system in which local schools are autonomous from the federal government, Brazilian authorities have devised a flexible implementation approach in which voluntary teachers from different disciplines can opt to teach financial education, receiving teaching support as well as pedagogical material.

The Policy Recommendations for Advancing K-12 Financial Education and the Guide for Policy Makers in the United States

In the United States, the Consumer Financial Protection Bureau (CPFB) published the Policy Recommendations to outline how focusing specifically on youth financial education can mitigate the ongoing struggle of many consumers to manage their finances and to propose a comprehensive strategy to impart personal financial-management skills to young people while through the school system. The report provides an overview of the situation in the different States, and the levels of provision targeting young people also outside of schools.

The document makes five important recommendations on financial education in schools:

1. Introduce key financial education concepts early and continue to build on that foundation consistently throughout the K-12 school years. In addition, CFPB encourages states to make a stand-alone financial education course a graduation requirement for high school students;
2. Include personal financial management questions in standardized tests;
3. Provide opportunities throughout the K-12 years to practice money management through innovative, hands-on learning opportunities;
4. Create consistent opportunities and incentives for teachers to take financial education training with the express intention of teaching financial management to their students;
5. Encourage parents and guardians to discuss money management topics at home and provide them with the

tools necessary to have money conversations with their children. (CPFB, 2013b)

The K-12 Recommendations are also complemented by guidance addressed at policy makers (CPFB, 2015) to help them connect with the available tools, information, and insights and as such support them in their efforts aimed at advancing K-12 financial education. The Guide includes a framework, which takes policy makers through a series of questions set out to cater the needs of those just beginning to pursue K-12 financial education and those seeking to enrich existing K-12 financial education provision and strengthen it. The framework consists of three sections "Laying the groundwork," "Building the Initiative" and "Extending the Impact", for each of which the Guide includes examples from across the different States.

Table 5.1 summarises some of the relevant experiences of introduction of financial education in schools, highlighting the modalities introduction and whether there are programmes to support teachers development and whether dedicated pedagogical materials have been prepared by public authorities.

Table 5.1 Financial education in schools: selected examples of modalities of introduction and support

Country **(non-exhaustive list)**	Modalities of introduction	Teachers development (offered as part of teachers professional development)	Pedagogical material (developed and/or certified by public institutions)
Australia	Part of the National Curriculum; cross-curricular (maths, english, science in foundation to Year 10; economics and business Year 5 to 8).	ASIC's MoneySmart Teaching includes resources and training aligned to the National Professional Standards for Teachers.	Yes
Brazil	Pilot in high schools, evaluated, under implementation. Pilot in primary schools – to be implemented.	Virtual platform with distance learning course and video lessons for high school teachers (www.edufinanceiranaescola.gov.br/) and video lessons for primary school teachers.	Yes
Belgium	Pilot project in 25 secondary schools.	Teachers training to begin in 2016 for French-speaking part of the country.	Yes
Canada	Decided at the Provincial (State) level.		Yes
Czech Republic	**Compulsory** since 2009 in secondary schools (cross-curricular) and 2013 in primary schools (as part of citizenship education); full responsibility for financial education in schools to the Ministry of Education.		
Denmark ***(see also case study below)***	**Compulsory**, cross-curricular (part of the mathematics and social science's curriculum in lower secondary education).	Teachers who teach social science (in primary and lower secondary school) are trained to teach the students about the relationship between personal finances and political economy, students consumer behaviour and to teach the students to reflect on their own financial situation and disposals.	
Estonia	Cross-curricular (2010 curriculum incorporates monetary and finance-related topics in primary and lower secondary school).		Yes (www.koolielu.ee)

France	Elements of financial education are included in the secondary school curriculum.		
Hong Kong, China	Aspects of financial literacy are included in primary school (general studies, mathematics); lower secondary school (mathematics, life and society, home economics); upper secondary school (mathematics, liberal studies, business, accounting & financial studies, economics).	The Investor Education Centre has started providing in-service teacher development seminars via the Education Bureau. No pre-service training.	In the process of developing.
Indonesia	2014, financial education was introduced in high schools as part of economics.	Training of trainers for teachers.	
Ireland	Aspects of financial literacy are covered in lower secondary education in maths (mandatory), in home economics and business studies (optional). In upper secondary education, aspects of financial literacy are also covered in maths, as well as the optional subjects of accounting, business, economics, and home economics.		
Lebanon	Part of the national curriculum, introduced in 1996: as part of the civic education curriculum at lower secondary level, and as part of the economics curriculum at upper secondary level.	Yes – at the upper secondary level through a joint programme developed and implemented by the Ministry of Education and Higher Education and the *Institut des Finances Basil Fuleihan*.	Yes
Japan	Part of the National Curriculum (2008 and 2009); Cross-curricular (social studies, home economics, and moral education, the period for integrated studies, special activities, etc., in primary and secondary schools).	Yes – teachers' seminars.	Yes (lesson plans, educational materials, etc.)
Latvia	Cross-curricular; financial education is integrated into various subjects of the General Curriculum - in grade 1.-9. subject “social studies, in secondary/ vocational education- “economics” or “commercial sciences"	Yes, as well as annual seminars of strategic partners.	Yes, National Centre for Education and the BA School of Business and Finance have developed an educational toolkit freely available to the economics and social sciences teachers
Malaysia	**Compulsory** since 2014 in primary schools and 2017 in secondary schools; cross-curricular (primary schools: maths, English language, Malay language, and in non-core subjects such as moral education - secondary school curriculum: mathematics, English language, Malay language, commerce, basic economics and living skills).	Financial education module integrated into teachers’ professional development and trainee teachers.	Yes. Lesson plans have been developed and distributed to the teachers. The lesson plans will be made available online in the e-portal. On line learning tools for students – games and quizzes

Netherlands	Basic financial education elements are included in primary education (money calculus) and in secondary education (household economics).		A framework has been designed to help publishers of pedagogical materials.
New Zealand	2007, cross-curricular: it provides a context for linking learning areas such as social sciences, mathematics and statistics, English, business studies, health and technology. Full responsibility for financial education in schools to the Ministry of Education.	Yes. In 2014 the Financial Capability Progressions of Learning were added. The progressions describe learning outcomes for students at all levels of the curriculum.	Yes – Ministry of Education
Peru ***(see also case study below)***	**Compulsory.** Since 2008, by the Ministry of Education through Resolution N° 440-2008-ED; and later amended, in 2015, by the Ministry of Education through Resolution N° 199-2015-MINEDU.	Yes. The SBS implements the Teachers Training Programme *Finanzas en el cole* (Finances at school).	The SBS has a "Teacher Guide" and is developing pedagogical material for high school students. Finally, the SBS has created stories, comics, and supporting material for elementary school.
Portugal	Yes, in citizenship education based on the 2013 Core Competencies (covering kindergarten, 1st, 2nd and 3rd stages of basic education and secondary education).	Ministry of Education and Science and the three financial supervisors are implementing a training programme for school teachers, which provides the teachers with "credits" that are considered in their career development.	A school book is currently being prepared by three financial supervisors, the Ministry of Education and Science and the four largest financial institutions
Russian Federation	Pilot educational courses and modules at the every grade from elementary to high school in 5 regions with further being introduced in other regions	Special training and methodological support at federal and regional levels through seminars and remotely via webinars and consultations. Further the federal methodological center of teachers training will be established.	Yes. Developed materials for students, teachers, parents and evaluation forms for all grades.
Singapore	Among other initiatives, financial literacy messages have been incorporated into Character and Citizenship Education for primary school students since 2012. Lower secondary students have been introduced to basic consumer and financial literacy education since the 1990s through the Home Economics curriculum. In 2014, the subject Home Economics was renamed as Food and Consumer Education and includes messages on managing financial resources and understanding consumer rights and responsibilities.	Yes, Citi-NIE Financial Literacy Hub for Teachers launched in 2007.	Yes

South Africa	Cross-curricular; integrated in the school curriculum in all grades in a number of learning areas (e.g., economic and management sciences, and mathematical literacy).	No, not officially, but part of specific financial education project related objectives.	Yes, two resources, which included lesson plans and assessment, were developed by the Financial Services Board and partners and approved by the Department of Basic Education for teachers of Mathematical Literacy (Managing your Money) and Economic Management Sciences (Money in Action).
Spain ***(see also case study on its evaluation)***	**Compulsory** since 2013 new Law for Primary school, where this law introduces some contents of financial education as part of Social Sciences area of knowledge. As regards Secondary school, some more in depth contents of financial education are included as part of the optional subject of Economy in 4th year. Besides, "Financial Education in schools" programme keeps on being implemented in Secondary schools on a voluntary basis.	Yes (finanzasparatodos.es/gepeese)	Yes (finanzasparatodos .es/gepeese)
Thailand	Financial education is included in primary and secondary school curricular, and is mainly taught in economics.	Yes – included in the training on teaching social studies.	Yes (approved by the Ministry of Education)
United Kingdom	**Compulsory** in the four devolved nations (England, Northern Ireland, Scotland, Wales).		Yes (by not-for-profit *pfeg*)
United States	**Compulsory** in some of the States.		

Case studies

Denmark, Malaysia and Peru have successfully achieved the integration of financial education in the school curriculum.

In Denmark, financial education is mandatory in the framework of a decentralised educational system in which municipal boards play an important role in implementing the common learning outcomes decided at the national level. In Malaysia, financial education in schools has been introduced in the context of the national strategy for financial education. The actions of the central bank and of the Ministry of Education were facilitated by the pre-existence of national initiatives focusing on school children. The example of Peru shows how the introduction of financial education in schools can build up expertise within national administrations and establish strong cooperation agreements. The background work conducted for the introduction of financial education in schools has proven instrumental in the definition of a national strategy for financial education.

CASE STUDY: DENMARK

Mandatory provision of financial education in a decentralised educational system

In Denmark financial education activities are developed and coordinated at the national level by the Money and Pension Panel, a board established by the Danish Parliament in June 2007. The Danish Financial Supervision Authority (FSA) provides technical and analytical assistance and acts as the secretariat of the Panel.

The Danish educational system

At the national level in Denmark, the Danish *Folkeskole* (primary and lower secondary schools) are regulated by the *Folkeskole* Act. By means of this Act and its Executive Orders, all municipal primary and lower secondary schools share common learning objectives and standard requirements concerning the subjects that are to be taught at specific grades, standard regulations concerning the learning outcomes (defined as “Common Objectives”) for teaching in individual subjects, as well as standard regulations concerning the organisation of the school system at the local level. The final and grade level objectives establish a national standard and common goals, aimed at ensuring that students acquire the knowledge and skills in the subject/topic at, respectively, the end of their programme of education and at the conclusion of specific grade levels. It is then the responsibility of the individual municipal boards to determine how the municipality’s schools are to be organised in practice, within the framework established by law. The municipal boards themselves determine the municipal level of service for the *Folkeskole* within this overriding framework and can set their own additional objectives for the schools.

Common Objectives cover the two most important sets of academic texts regarding the school’s subjects and topics.

1. The binding national objectives; and

2. Guidelines for curricula and descriptions of the educational development designed to reach the grade level and end objectives.

Once the local curricula and descriptions receive final approval from the municipal board, they become binding for the individual schools.

Financial education provision and assessment

Personal finance, economics and finance are included in the Common Objectives for maths and social studies in lower secondary school. The Common Objectives for maths and social studies address issues related to the daily life and personal finance covering for example savings, loans, credit, budget, consumer behaviour, tax and pensions. The Ministry of Education has completed the process of revising the Common Objectives for all subjects: the requirements of the personal finance in both maths and social studies have been reinforced and the Common Objectives for maths now also include everyday economy in primary schools.

The national examinations after grade level nine in maths and social studies test students in the Common Objectives, including on personal finance and economics. Personal finance is also included in the national tests in maths after grade levels three and six.

With regards to teachers’ development, social science teachers (in primary and lower secondary schools) are trained to teach the relationship between personal finance and political economy, and consumer behaviour and to teach students to reflect on their own financial situation. In addition to this training, the Panel and the Ministry of Education provide a selection of pedagogical materials on their websites.

🕮 CASE STUDY: MALAYSIA

Co-operation among the private sector, central bank and Ministry of Education paving the way to mandatory financial education

The formal introduction of financial education in Malaysian schools was preceded by a series of initiatives that fostered the collaboration between the central bank, the Ministry of Education, as well as financial services providers.

Efforts leading to integration of financial education into the school curriculum:

- 1996 - National Savings Promotion Campaign was the first collaborative effort of Bank Negara Malaysia (BNM), the Ministry of Education (MOE) and the adoptive financial service providers to inculcate savings and smart money management in school children; and
- 2003 - Promotion of financial education for school children integrated into the Consumer Education Programmes initiatives under the Financial Sector Master Plan 2000 – 2010.

In the framework of these two policies, a series of initiatives was successfully implemented:

- School Adoption Programme (since 1997) - the adoptive financial service providers support teachers in conducting activities related to banking, insurance and basic financial knowledge, also provide an opportunity for school children to experience having a bank account. About 10000 Government aided schools are adopted by the financial service providers.
- Students Financial Clubs (since 1998) - as a platform for schools to organise financial education activities (via workshops, quizzes, contests, visits to financial institutions, knowledge-sharing sessions and games).
- Pocket Money Book (since 1999) - developed with the objective to educate and assist children to manage their pocket money and to take control of their personal finance.
- *duitsaku.com* (since 2004) - an interactive website that promotes financial education through edutainment via games, competitions, quizzes, financial calculations, e-counsellors and other activities related to personal financial management.

The integration of financial education into the school curriculum has benefited from these existing programmes, and is now part of a national strategy agenda, in line with the following recommendations:

- Economic Transformation Plan (2010-2020) – BNM will lead the creation of a coordinated national financial literacy programme based on a public-private partnership. A cornerstone of the programme will be the integration of financial literacy into the formal school curriculum; and
- Bank Negara Malaysia Financial Sector Blueprint 2011-2020 (Blueprint) sets out a number of recommendations aimed at empowering consumers with knowledge, skills and tools to make informed decisions to build, manage and protect their wealth. One of the key recommendations is: promote financial capability as an essential life skill from an early age through the integration of financial education into formal curriculum at schools and higher learning institutions.

Since 2006, BNM has made continuous engagements and persistent efforts to get the buy-in from the MOE to integrate financial education into the school curriculum. BNM's collaboration with the MOE to integrate financial education into the school curriculum has made encouraging progress since 2011 when the MOE was developing a new curriculum for Malaysian schools.

Since 2014, financial education in the new school curriculum has been implemented progressively beginning with year 4 (for children aged 10 years old) in primary schools for subjects such as mathematics, English language, Malay language and moral education.

Beginning in 2017, financial education will be implemented progressively into the secondary school curriculum in mathematics, English language, Malay language, commerce, basic economics and living skills.

The proposed financial education framework comprises the following six financial literacy elements. Their respective learning standards for different school grades has been used by the MOE as key reference in the embedment of financial education into the school subjects:

- Money, Source of Income and Career Choice;
- Financial Responsibility and Decision Making;
- Money Management and Planning;
- Savings and Investments;
- Credit and Debt Management;
- Risk Management, Wealth Protection and Insurance.

Key achievements to-date for collaborative initiatives between BNM and the MOE to complement and support the integration of financial education into the school curriculum include:

- Financial education elements incorporated in year 5 and 6 mathematics, English language, Malay language and moral education;
- Compulsory 14-hour financial education module for final semester trainees teachers at all Teachers Training Institute in Malaysia;
- Training the trainers to support key lecturers to deliver the 14-hour financial education module to trainee teachers;
- Financial education module being developed for the train-the-trainers programme for teachers in service set to roll out in 2015;
- Lesson plans (mathematics, Malay language, English language) were developed to support and guide teachers in the implementation of financial education in the classroom;
- Through engagement sessions such as workshops, more than 1,930 school heads and potential school heads were made aware on the importance of financial education and the roles they need to play to support the implementation of financial education in the classroom at their respective schools; and
- Roles of adoptive financial service providers under the School Adoption Programme were realigned and enhanced - to serve as subject matter experts to provide advice to teachers on the technical aspects of financial management, including on products and services.

🕮 CASE STUDY: PERU

The inclusion of financial education in the national curriculum in Peru and a successful national programme to train teachers.

During the last decade, the Peruvian Superintendence of Banking, Insurance and Private Pension Funds (SBS) and other institutions have been working on increasing the level of financial literacy of the population. This effort has evolved from an approach targeting the general public to a more focused target group approach, recognising that each group has its own set of preferences and needs. In particular, the need of financial education for children and youth has been identified as a policy priority in Peru, and therefore, the government has incorporated financial education in the school curriculum.

In 2006, the SBS and the Ministry of Education (MINEDU) signed an agreement to promote financial education in public schools. As a result of this agreement, the two institutions designed and implemented a teacher training programme aimed to provide high school teachers with basic financial knowledge and skills that can be transferred to their students.

In 2007, the first teacher training programme was carried out by the SBS in Lima with the participation of 44 teachers from 13 public schools selected by MINEDU. Since then, the programme was successfully replicated throughout the country reaching out to more than 9000 teachers in eight years.

In 2008, the Ministry of Education recognised the importance of financial education for youth and incorporated it into the National Curriculum for high schools. Having financial education into the National Curriculum represented a milestone not only in the country but also in the region as Peru was the first country in Latin America to incorporate financial education into the school curriculum.

The collaboration between the Ministry of Education and the SBS in the implementation of the teacher training programme, as well as the technical assistance provided by the SBS to improve the current national curriculum in terms of financial education content, has been very important. Due to the high level of staff turnover in the public sector, it was very important to involve professional staff at different levels and engage in communication efforts underlining the importance of financial education. The efforts of the SBS have also been supported in creating incentives to promote financial education at different levels through the active involvement of international organisations, private sector and civil society.

The joint development of financial education within a competence based curriculum

Since 2012, the MINEDU has been working on a competence-based curriculum for all regular basic education, which includes kindergarten, elementary and high school levels. Every competence is broken down in a set of capacities that help teachers to understand the different angles of the learning outcome.

Between 2013 and 2014, the MINEDU invited the SBS, the National System of Evaluation, the Accreditation and

Certification of Educational Quality (SINEACE, its acronym in Spanish) and other financial education experts to participate in a working group in order to develop the financial education learning framework. The working group reviewed other countries' curricula, national experiences on financial education and harnessed the pedagogical and technical expertise of its members.

As a result of the activity of the working group and recognition of the importance of financial education, an update of the national curricula was approved in March 2015 by the Ministerial Resolution N° 199-2015-MINEDU. This incorporates the financial education competence: "He/she acts responsibly with regard to economic resources". This is divided in three more specific abilities:

1. understands the relationship between elements of economic and financial systems;
2. becomes aware that he/she is part of the economic system; and
3. manages resources with responsibility.

The update also included a set of indicators of achievement for each level for the students, in order to allow teachers to have a clear picture about their progression and to understand whether the students meet the expectation for the particular level.

It is expected that this will empower individuals to take responsible decisions through their lives, under the assumption that economic and financial literacy will help them to achieve their individual financial well-being and collective goals more efficiently.

Pilot of financial education for the VII level

The MINEDU together with the SBS and the Bank Association are working on a financial education pilot programme for the VII level of regular basic education (the last three years of high school). The pilot programme has a set of defined outcomes for 2015:

- Create teaching materials such as textbooks for students and pedagogical guidelines for teachers;
- Train the trainers: MINEDU experts will provide the SBS trainers with pedagogical guidelines and technical knowledge on how to understand and use the material developed to train school teachers;
- Design the programme to train teachers to ensure that they have the knowledge and capacities to deliver financial education content in the classroom; and
- Monitor and evaluate the main results of the implementation of the programme on students.

The pilot will be part of a group of projects that MINEDU will be implementing during 2015 in high schools. This programme will be implemented in a set of schools that this year will have extended teaching hours (2 extra hours every day). The results of the pilot will be particularly useful in testing the new approach of financial education and understanding the amount of time required to teach the modules.

It is important to understand that this process is dynamic and the textbooks proposed will need to be refined as necessary based on the feedback received during the pilots, so that the content can be adjusted to better help students achieve their learning goals. This assumes even more relevance as the goals have not yet been tested and most students have not received any kind of financial education before.

National Plan for financial education

In 2014, a Multisectoral Commission for Financial Inclusion was created with the goal of designing and implementing the first National Strategy for Financial Inclusion. In July 2015, the President launched the strategy, by the Supreme Decree N° 191-2015-EF, which will include Financial Education as one of its main components.

Given the importance and complexity of the Financial Education component, the Commission has proposed the creation of a national strategy for financial education called "National plan of financial education" to be jointly led by the Superintendence of Banks, Insurance and Private Pension Funds (SBS) and the Ministry of Education (MINEDU). The Plan will be implemented in parallel and in coordination with the one on inclusion, to lead and articulate all the financial education initiatives over the next five years.

The development and implementation of the strategy on financial education will certainly benefit from the work that has already been done on the introduction of financial education in schools, as this allowed the key stakeholders to develop an expertise on economic-financial education. Moreover, the curriculum for schools can be used as a reference to develop other curricula for the other target groups such as youth and adults.

Table 5.2 National websites for national strategies for financial education (selected examples)

Country	Website(s) *Please describe its interactive elements and main components*
Armenia	**WEBSITE**: Finances for all www.abcfinance.am The website is created by The Central Bank of Armenia and provides a full range of information related to personal finance management. The content is organised by target groups (children, students, teachers etc.) and by topics (budgeting, investing, debt, financial system, financial education at teachable moments etc.). The website also includes APRC and APY calculators, budgeting tools, as well as the “Shopping around” comparison tool which gives the possibility to consumers to find out the most appropriate financial product for them available in the market and make informed decisions. The website contains financial games to make it more entertaining and interactive as well.

Australia	**WEBSITE 1:**
	Name: **National Financial Literacy Strategy**
	Web address:financialliteracy.gov.au www.financialliteracy.gov.au
	Main features:
	• ASIC's national strategy website contains information and resources to guide and encourage all those with a role to play in improving financial literacy, including the government, business and industry, research and education, community and not-for-profit sectors.
	• Key sections include:
	  ▪ Strategy and action plan: details of the 2014-17 Strategy and Action plan, including core principles, strategic priorities, core actions, key indicators and annual reporting on progress; plus the 2011 Strategy and 2013-14 review and consultation process
	  ▪ Supporters: organisations actively undertaking initiatives under the Strategy, including alignment with Strategy priorities
	  ▪ Research and evaluation: a selection of financial literacy research and evaluation reports from Australia and around the world, including the ANZ Survey of Adult Financial Literacy in Australia and ASIC's Financial Attitudes and Behaviour Tracker
	  ▪ Community of Practice: a national forum to encourage discussion and sharing of relevant research and projects
	
	WEBSITE 2:
	Name: **ASIC's MoneySmart**
	Web address:moneysmart.gov.au www.moneysmart.gov.au
	Main features:
	• ASIC's interactive financial education website for consumers and investors contains clear information, useful tools and independent guidance to help people of all ages, life-stages and circumstances to make the most of their money.
	• Content is organised by topic, and also tailored for different ages, life-stages, life events and target audiences. Layering of detail from general to specific means people can get a quick answer to a money question or delve more deeply into topics of interest. It is suitable for people with different levels of financial knowledge – from those tackling money issues for the first time, through to more experienced financial consumers.
	• The website is user-friendly and mobile-responsive. As well as online and print publications, it includes calculators, mobile phone apps, quizzes, videos, infographics and case studies. ASIC's MoneySmart team produces a monthly eNewsletter and is active on social media (Twitter, Facebook and YouTube). Site users can become free members of the website, enabling them to save their online calculator content (eg budget planner, retirement planner) for later access.
	The Teaching section contains resources for primary and secondary school teachers (including professional development activities, and classroom units of work and digital activities aligned to the national curriculum) and parents, community educators, post-secondary vocational education and training (VET) pathways, and workplaces.

Country	Website(s) *Please describe its interactive elements and main components*
Brazil	**WEBSITE** 1: Vida & Dinheiro (Life & Money) – http://www.vidaedinheiro.gov.br Vida & Dinheiro features information about the National Strategy (ENEF) and its main horizontal programmes, as well as Financial Education in general. It also provides many tools which can help the citizen on issues related to savings, insurance, consumer protection, financial planning etc., and all the legal documents issued by the National Committee for Financial Education and its subgroups. This website is maintained by the Associação de Educação Financeira do Brasil (mentioned in pages 54 and 62). **WEBSITE** 2: *Semana ENEF* (ENEF Week) – http://www.semanaenef.gov.br This website is specifically dedicated to the National Week for Financial Education (Semana ENEF), a yearly event aimed at the promotion of the National Strategy and the activities developed by the members of the National Committee. It features general information about the National Week, its schedule (with filters for cities and institutions), links to registration for events and information for the press. **WEBSITE** 3: *Programa Educação Financeira nas Escolas* (Financial Education Programme in Schools) – http://www.edufinanceiranaescola.gov.br/ Open virtual platform that presents the materials prepared for the Financial Education Programme in High Schools and provides all their content for free download.
Canada	**WEBSITE**: www.fcac.gc.ca Financial Consumer Agency of Canada (FCAC) This website provides comprehensive financial literacy information, in English and French, geared to Canadian financial consumers, merchants and the financial institutions regulated by FCAC. The Agency's website offers free, objective, interactive and engaging resources such as selector tools, calculators, videos, life events and educational programmes. The Canadian Financial Literacy Database is housed on this website. It is a one-stop shop highlighting resources available from public, private and non-profit organisations across the country to help people improve their financial knowledge and skills. The Agency is also active in social media (Twitter, Facebook, LinkedIn and YouTube).
Estonia	**WEBSITE:** www.minuraha.ee This website contains information about different financial services and products (insurance, savings, and investments), a wide range of calculators as well information centred on life events and on complaint and redress mechanisms (how to face financial difficulties, how to complain, useful information for students etc.). The website is in Estonian and Russian.
Hong Kong, China	**WEBSITE** www.hkiec.hk Investor Education Centre It provides a full spectrum of information and tools relating to all aspects of personal finance, from banking and insurance to investing, and retirement planning to assist the public with their financial decision-making and learning. In addition, the IEC has launched a suite of user-friendly and interactive digital tools to help the public plan, review and manage their finances. These include seven digital calculators and one mobile application to help address the most common financial knowledge and capability needs. Brief description of these tools is outlined below and more details are found in www.hkiec.hk/calculators: • Financial Health Check - Assess your financial health and get a free analysis report and an action plan for improving it. • Budget Planner - Develop your budget and take control of your spending and savings. • Cut-back - Work out where you can make savings and cut back non-essential expenses. • Saving Goals - Check out how to reach your savings goals and how long it will take to get there. • Debt - Provide an overview of all your personal debts and tips to help you manage your debts. • Net Worth - Weigh up your assets and debts and check out how good you are at managing your wealth. • Retirement Planner - Work out your retirement budget and get action plans. • Money Tracker - A mobile app to help you plan budget and track your expenses and

Country	Website(s) *Please describe its interactive elements and main components*
	income anytime, anywhere The website also hosts a dedicated "Life Events & You" section providing the general public with information and tips about how to manage their finances to meet their personal needs at different life stages or events, such as getting married, buying and setting up a home and suffering from an illness. Students, fresh graduates just entering the work place and retirees can access a full suite of comprehensive, credible and impartial information about all aspects of financial management in this section on the IEC website. Reference link: www.hkiec.hk/lifeevents In addition, the recently enhanced IEC website offers multimedia contents, cases, newsletters and glossary as well as IEC YouTube channel, a sharing function via the Facebook and my favourite page" function to help enrich users' experience.
Japan	**WEBSITE:** www.shiruporuto.jp, www.fsa.go.jp/news/24/sonota/20130430-5/01.pdf
Latvia	**WEBSITE 1:** "The Client School" for customers of financial service providers educational site of the Financial and Capital Markets Commission (FKTK) www.klientuskola.lv Launched in 2011. Educational materials on most frequently used financial services and associated risks, tests, as well as evidence from research and the national measurement survey. A new section, the CLIENT ABC, has been added in 2015: it includes educational materials on more than 70 different financial literacy topics and tests for different literacy levels (A, B and C). Basic materials have been available also in Russian as from 2012. Website also explains key supervisory principles of the financial sector, deposit guarantee schemes, consumer protection measures and competences of regulatory authorities in Latvia. As of 2014 the website also includes the Index of financial literacy and the summary of indicators featuring in the Latvian household survey. **WEBSITE 2**: "The Money School" for teachers/educators, created by Bank of Latvia" www.naudasskola.lv Educational website to raise knowledge especially in macroeconomics matters. It also features a *Teacher's Room* that provides information on new courses, further education seminars and educational activities for pupils at every grade.
The Netherlands	**WEBSITE***:* www.wijzeringeldzaken.nl - Consumer website providing approachable easy to understand information, tools, calculators, checklists, hints etcetera aimed at advancing responsible financial behavior - Centered around themes (mainly life events, such as having children, changing jobs, getting married, retiring, et cetera) - Over two million visitors per year (2015)
New Zealand *(see also case Chapter III "Facilitating access to information and advice through multi-channel delivery")*	**WEBSITE 1: Sorted** www.sorted.org.nz The website created by the Commission for Financial Capability includes information centred on the key three steps to get financially sorted: Think ahead - Make a plan for your money; Shrink your debt - Get rid of high interest debt as fast as you can; Grow your savings - Save regularly to reach your goals. The website also includes calculators and budgeting tools, as well as a comparison tool to find the most appropriate KiwiSaver fund (a voluntary long-term savings scheme for retirement or to build up a deposit for first home), as well as a section for "Sorted Schools". **WEBSITE 2:** www.cffc.org.nz/what-we-do/financial-capability/national-strategy/ Made up of description of the National Strategy, its vision and activity streams with related links to educational programmes in schools, adult learning environments and workplaces. Iterative components are to be built.

Country	Website(s) *Please describe its interactive elements and main components*
Portugal	**WEBSITE:** *Todos Contam* (meaning everybody counts, everybody matters) www.todoscontam.pt The website is a hub for the financial education initiatives of all stakeholders of the Portuguese National Plan for Financial Education and it provides financial education tools, including helpful tips and calculators for planning the personal budget, building savings and investments and entering into different credit and insurance products. It also provides tips for different stages of life. Three different libraries with free financial education materials are available: a library for the general public, the Junior Library targeted at students (offering publications for children, games, videos, etc.) and the Trainers' Library targeted at trainers (offering lesson plans and other teaching materials).
Spain	**WEBSITE**: www.finanzasparatodos.es The aim of the web is to provide help an information to the citizens by covering a wide set of possible financial decisions faced by most individuals over their lives. The website offers practical contents in an everyday language. It presents a wide variety of useful tools to help to manage personal finances, which allows the user to prepare personalized budgets, calculate loan payments, estimate a reasonable level of indebtedness, etc. Different ways of navigation are available: • by modules (How to meet the ends, the most important financial decisions at every stage of your life, etc…), • by profiles (student, unemployed, retired, etc…) and • by needs (I need to buy a house, to understand the payroll, etc…). Multimedia resources have been created, such as 12 videos about a young couple who face different financial problems. Social networks have been also exploited in order to make users aware of the resources and interactive tools available at the portal. In this respect, the inclusion of new contents and the development and incorporation of the new downloadable application "My budget" have to be highlighted. This open access, free-of-charge application enables users to interact with and download onto their PCs a tool which helps them keep a tight rein on their personal finances, set targets, and match their budget to their financial situation. On the other hand, the "Financial Education in schools" programme led to the creation of a restricted area inside finanzasparatodos.es, which has been set up in order to provide pupils and teachers participating in the programme with games, workshops, tools and interactive resources (www.gepeese.es). The aim is to provide young people with a more practical and accessible approach to these subjects and to give the teaching staff more support and educational resources. Also, a "private area" for teachers has been created inside the website www.gepeese.es which includes (i) teaching resources, guidelines and recommendations to teach financial education in the classroom, (ii) the curricular areas related with financial education, (iii) games, workshops, etc. This area has a special section with news and events so teachers may exchange their materials or discuss about their experiences teaching financial education.

Country	Website(s) *Please describe its interactive elements and main components*
South Africa *(see also case Chapter III "Facilitating access to information and advice through multi-channel delivery")*	**WEBSITE**: www.mylifemymoney.co.za *Mylifemymoney* aims to help consumers make the most of their money in the following ways; • Life events and the various financial responsibilities • Free budget template and calculators. • Booklets and brochures /glossary • Financial Tips & Public warnings • Interactive: Blogs, Feedback forum, CED.consumer@fsb.co.za. • Online learning and training
United States	**WEBSITE** www.mymoney.gov The website of the Financial Literacy and Education Commission is a "one-stop shop" for Americans to find financial education information and resources from across the federal government in one place. The website includes information for youth, educators, and researchers, including articles, calculators, worksheets, checklists and other information from over 20 government agencies. It includes interactive MyMoney Five Quizzes and the FLEC Research and Data Clearinghouse. The website is built around the MyMoney Five building blocks for managing and growing money – earning, spending, saving and investing, borrowing and protecting.

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ANNEX 1
CHECKLIST FOR THE IMPLEMENTATION OF NATIONAL STRATEGIES FOR FINANCIAL EDUCATION

Introduction

This Checklist has been developed by the OECD/INFE Technical Committee and approved in May 2015. It has been designed to be an easy-to-use tool to help public authorities (especially if they are leading/coordinating a national strategy) and/or other relevant stakeholders who would like to self-assess the implementation of their strategy for financial education and the associated policies and initiatives.

Regular collection of information based on the checklist will also be used to keep track of relevant trends in the development and implementation of national strategies and identify future challenging areas.

The list of questions included in the checklist follows the sections of the OECD/INFE High-level Principles on National Strategies for Financial Education. It is also based on the lessons learnt in the Policy Handbook on the Implementation of National Strategies for Financial Education as well as relevant OECD Recommendations[15] and OECD/INFE practical instruments developed over recent years to support effective financial education provision. The checklist accordingly covers the key aspects of a national (regional or local) strategy for financial education including the preparatory steps (I), the leadership, coordination mechanisms and role of main stakeholders (II), the roadmap (III) as well as relevant delivery mechanisms and their evaluation (IV).

The Checklist's format is the following:

- It mainly consists of closed (yes/no) questions providing guidance on important actions to be performed to design and implement a successful strategy. Public authorities can also indicate whether developments related to certain actions are "in progress". Itemised lists are provided in many cases, but as these may not be exhaustive, an "other" choice is typically included, for which a specific answer may be required.

- A "comment'' column is also included to allow public authorities to add comments to support the effective implementation of the strategy (in case the concern issue/action is in progress or if the question is an open one).

- The last column provides information on available and relevant OECD/INFE policy and practical tools that can support particular areas of the national strategy implementation.

[15] Recommendation on Principles and Good Practices for Financial Education and Awareness (2005), Recommendation on Good Practices for Financial Education Relating to Private Pensions (2008), Recommendation on Good Practices for Enhanced Risk Awareness and Education on Insurance Issues (2008), Recommendation on Good Practices on Financial Education and Awareness Relating to Credit (2009). Please see: http://www.financial-education.org/standards.html

Checklist for the implementation of National Strategies for Financial Education

ISSUE	ANSWER			AVAILABLE TOOLS
	YES	IN PROGRESS	COMMENTS	
PART I – PREPARATION OF THE NATIONAL STRATEGY *The development of a national strategy should involve the whole sequence of appropriate assessment, mapping, consultative and communication processes and preparatory surveys. Such preparation should preferably be driven by the government, a public or regulatory authority or a national consultative/steering body.* (OECD/INFE High-level Principles on National Strategies for Financial Education, 2012, G20 endorsement)				
MAPPING AND EVALUATION OF EXISTING INITIATIVES				
1. Have we mapped the existing financial education initiatives?	❑	❑		
a) Have we assessed the quality of these initiatives?	❑	❑		
2. Have we mapped and reviewed relevant research and literature?	❑	❑		
3. Have we mapped and reviewed international initiatives?	❑	❑		
4. Have we identified:				
a) effective and replicable practices	❑	❑		
b) possible inefficiencies and/or gaps in provision	❑	❑		
ASSESSMENT OF THE POPULATION AND MAIN POLICY ISSUES				
5. Do we have a baseline measure/survey of the level of financial literacy of the population (and relevant subgroups)?	❑	❑		2015 OECD/INFE Toolkit for Measuring Financial Literacy and Financial Inclusion PISA 2012 Financial Literacy Framework OECD PISA financial literacy assessment of students
a) Do we repeat this survey?	❑	❑		
i. If yes, how often is it conducted?	❑	❑		
b) Do we use an international survey instrument, and if yes, which one (response in comment)?	❑	❑		
c) Are data for our country/economy included in available international comparisons (such as PISA Financial Literacy assessment, OECD/INFE measurement exercises)?	❑	❑		

ISSUE	ANSWER			AVAILABLE TOOLS
	YES	IN PROGRESS	COMMENTS	
6. Do we also draw quantitative and qualitative information on the financial literacy needs of our population from:				
a) Household surveys (including financial assets ownerships, savings and indebtedness rates, investment preferences, etc.)	❑	❑		
b) Opinion polls	❑	❑		
c) Consumer complaints data	❑	❑		
d) Market research	❑	❑		
e) Others (specify in comment)	❑	❑		
7. Have we conducted any additional research on specific financial literacy needs and vulnerabilities of the population? (specify in comment)	❑	❑		
CONSULTATION				
8. In mapping existing financial education initiatives and assessing the population needs and gaps, have we consulted:				
a) Interested public authorities and government	❑	❑		
b) Civil society stakeholders and intermediaries:				
i. Consumers' associations	❑	❑		
ii. Employers' associations	❑	❑		
iii. Trade unions	❑	❑		
iv. Teachers' association	❑	❑		
v. Media	❑	❑		
vi. Universities/academia	❑	❑		
vii. Others (specify in comment)	❑	❑		
c) Private stakeholders	❑	❑		
d) General public	❑	❑		
9. Have we set up a consultative platform/mechanism for stakeholders to provide input and feedback into other phases of the national strategy?	❑	❑		

ISSUE	ANSWER			AVAILABLE TOOLS
	YES	IN PROGRESS	COMMENTS	
COMMUNICATION AND AWARENESS				
10. Have the results of the mapping and assessment exercise been reported to:				
a) Relevant public authorities/government	❑	❑		
b) Civil society stakeholders and intermediaries:				
i. Consumers' associations	❑	❑		
ii. Employers' associations	❑	❑		
iii. Trade unions	❑	❑		
iv. Teachers' association	❑	❑		
v. Media	❑	❑		
vi. Universities/academia	❑	❑		
vii. Others (specify in comment)	❑	❑		
c) Private stakeholders	❑	❑		
d) General public through awareness campaigns	❑	❑		
PART II – GOVERNANCE MECHANISMS AND THE ROLE OF STAKEHOLDERS *The strategy framework should be tailored to national circumstances and be flexible. It should also rely on transparent co-ordination and governance mechanisms with an identified leading authority or governing mechanism and shared but clearly defined roles and responsibilities for relevant stakeholders.* (OECD/INFE High-level Principles on National Strategies for Financial Education, 2012, G20 endorsement)				
LEADERSHIP AND GOVERNING STRUCTURE				
11. Is the strategy supported/endorsed at the highest policy level?				
a) By the Head of Government/State?	❑	❑		
b) By relevant Ministers/Central Bank Governor/Heads of Supervisory Authorities?	❑	❑		

ISSUE	ANSWER			AVAILABLE TOOLS
	YES	IN PROGRESS	COMMENTS	
12. Is there a mandate for financial education?	❑	❑		
a) If yes, is it granted to:				
i. A single authority	❑	❑		
ii. A committee	❑	❑		
iii. If a committee, which authorities are involved? (response in comment)				
13. Does an institution/authority/body have a leadership role to develop/implement the strategy?	❑	❑		
CO-ORDINATION AND THE ROLES AND RESPONSIBILITIES OF STAKEHOLDERS				
Public authorities				
14. Do we involve these public authorities?				Recommendation on Principles and Good Practices for Financial Education and Awareness
a) Ministry of Finance	❑	❑		
b) Ministry of Education	❑	❑		
c) Ministry(ies) with mandate for social affairs and/or vulnerable groups	❑	❑		
d) Central Bank	❑	❑		
e) Financial regulator(s) and/or supervisor(s)	❑	❑		
f) State/regional authorities (If we are a federation)	❑	❑		
g) International donors (if relevant)	❑	❑		
15. Are there appropriate reporting mechanisms to keep the government informed of relevant progress, achievements and challenges in the implementation of the strategy?	❑	❑		

<table>
<tr><th rowspan="2">ISSUE</th><th colspan="3">ANSWER</th><th rowspan="2">AVAILABLE TOOLS</th></tr>
<tr><th>YES</th><th>IN PROGRESS</th><th>COMMENTS</th></tr>
<tr><td colspan="5">Private and not-for-profit stakeholders</td></tr>
<tr><td>16. Do we involve trusted stakeholders in the private sector in the strategy (if/when relevant)?
a) If yes, are these:
i. Industry associations
ii. Financial corporation entities
iii. Telecommunication companies
iv. Other (specify in comment)</td><td>❑

❑
❑
❑
❑</td><td>❑

❑
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❑
❑</td><td></td><td>OECD/INFE Guidelines for Private and Not-for-profit Stakeholders in Financial Education</td></tr>
<tr><td>17. In particular, have these trusted stakeholders in the private sector been consulted/involved in:
a) the design of the national strategy
b) the implementation of the national strategy</td><td>
❑
❑</td><td>
❑
❑</td><td></td><td rowspan="7">OECD/INFE Guidelines for Private and Not-for-profit Stakeholders in Financial Education</td></tr>
<tr><td>18. Did we develop principles/guidelines/quality standards about the design/implementation of financial education initiatives by private stakeholders?</td><td>❑</td><td>❑</td><td></td></tr>
<tr><td>19. If we have defined principles/guidelines/quality standards, do we monitor the design and implementation of financial education initiatives by private stakeholders to check that they are followed?</td><td>❑</td><td>❑</td><td></td></tr>
<tr><td>20. Are there enforcement mechanisms to ensure compliance with these principles/guidelines/quality standards?
a) If yes, which authority has enforcement powers?</td><td>❑</td><td>❑</td><td></td></tr>
<tr><td>21. Do private stakeholders that follow these principles/guidelines/quality standards get a recognition of their contribution to the national strategy?</td><td>❑</td><td>❑</td><td></td></tr>
<tr><td>22. If we have not defined principles/guidelines/quality standards, do we monitor in some other way the involvement of private stakeholders? If so, how? (specify in comment)</td><td>❑</td><td>❑</td><td></td></tr>
<tr><td>23. If we have not defined principles/guidelines/quality standards, did we encourage relevant private and not-for-profit stakeholders to develop their own codes of conduct?</td><td>❑</td><td>❑</td><td></td></tr>
</table>

ISSUE	ANSWER			AVAILABLE TOOLS
	YES	IN PROGRESS	COMMENTS	
24. Do we involve trusted organisations among not-for-profit and/or civil society stakeholders in the strategy?	❑	❑		OECD/INFE Guidelines for Private and Not-for-profit Stakeholders in Financial Education
a) If yes, which of the following stakeholders are particularly involved				
i. National NGOs	❑	❑		
ii. International NGOs	❑	❑		
iii. Trade unions	❑	❑		
iv. Consumer associations	❑	❑		
v. Teachers association	❑	❑		
vi. Employers	❑	❑		
vii. Media	❑	❑		
viii. Others (specify in comment)	❑	❑		
25. Is there a partnership with national research centres and/or universities in order to support our financial literacy analysis and research on programmes?	❑	❑		
26. Are there appropriate reporting mechanisms to keep stakeholders informed of relevant progress, achievements and challenges in the implementation of the strategy?	❑	❑		
International cooperation				
27. Do we engage in international cooperation and dialogue on these issues?	❑	❑		

ISSUE	ANSWER			AVAILABLE TOOLS
	YES	IN PROGRESS	COMMENTS	
PART III – ROADMAP *The strategy framework should encompass the design of a tailored roadmap including an overall and cross-sectoral vision; realistic, measurable and time-bound objectives; and the definition of relevant policy priorities and, where relevant, target audiences. It should also plan an overall impact assessment and identify appropriate resources. The roadmap should be sufficiently flexible and take account of the dynamic context of the national strategy (including the political environment). It should be reconsidered regularly through research and analysis to ensure the continued relevance of its content.* (OECD/INFE High-level Principles on National Strategies for Financial Education, 2012, G20 endorsement)				
COMMON OBJECTIVES AND POLICY PRIORITIES				
28. Have we identified policy priorities emerging from the quantitative and qualitative assessments?	❑	❑		
a) If yes, do these include				
i. Financial inclusion	❑	❑		
ii. Credit and indebtedness	❑	❑		
iii. Retirement	❑	❑		
iv. Long-term savings and investments	❑	❑		
v. Insurance	❑	❑		
vi. Financial consumer protection	❑	❑		
vii. Other (specify in comment)	❑	❑		
29. Do we have a roadmap/action plan?	❑	❑		Good Practices on Financial Education and Awareness Relating to Credit Good Practices for Enhanced Risk Awareness and Education on Insurance Issues Good Practices for Financial Education Relating to Private Pensions
a) If yes, does the roadmap include relevant financial education components in existing legislation and regulation covering financial markets, insurance, pension, and credit, financial inclusion and/or financial consumer protection?	❑	❑		
i. If yes, which? (response in comment)				
30. Have we set long-term (5 years or longer) objectives?	❑	❑		
a) If yes, are they measurable?	❑	❑		

ISSUE	ANSWER			AVAILABLE TOOLS
	YES	IN PROGRESS	COMMENTS	
31. Have we set quantitative and qualitative targets:				Core competencies on financial literacy for youth Core competencies on financial literacy for adults
a) for the overall strategy	❑	❑		
b) for specific audience	❑	❑		
c) for specific priorities	❑	❑		
32. Have we agreed on short-term and intermediate outputs?	❑	❑		
33. Have we included a clear time schedule within the roadmap to achieve the objectives (in the short, intermediate and longe term)?	❑	❑		
TARGET AUDIENCES				
34. Are we using methods to segment the population?	❑	❑		
a) If so, which ones?				
i. Analysis of financial literacy data	❑	❑		
ii. Qualitative life-stages approach	❑	❑		
iii. Assessing vulnerabilities	❑	❑		
iv. Ethnographic studies of consumer behaviour	❑	❑		
v. Other (specify in comment)	❑	❑		
35. Have we defined target audiences?	❑	❑		INFE Guidelines on Financial Education in Schools OECD/INFE Policy Guidance on Addressing Women's and Girls' Needs for Financial Awareness and Education Policy Guidance on Financial Empowerment for Vulnerable Groups Checklist on Financial Education for Migrants and their Families
a) If yes, which ones?				
i. Young people	❑	❑		
ii. Working adults (specify in comment)	❑	❑		
iii. Women	❑	❑		
iv. Entrepreneurs	❑	❑		
v. Elderly	❑	❑		
vi. (Other) vulnerable groups (specify in comment)	❑	❑		
vii. Migrants	❑	❑		
viii. Others based on national circumstances (specify in comment)	❑	❑		

ISSUE	ANSWER			AVAILABLE TOOLS
	YES	IN PROGRESS	COMMENTS	
OVERALL IMPACT ASSESSMENT				
36. Do we monitor the implementation of the national strategy?				2015 OECD/INFE Toolkit for Measuring Financial Literacy and Financial Inclusion Guide to Evaluating Financial Education Programmes Detailed guidance for evaluating financial education programmes INFE High-level Principles for the Evaluation of Financial Education Programmes Checklist on the evaluation of financial education programmes
a) If yes, through which of the following methods ?				
i. Feedback from individual initiatives	❑	❑		
ii. Formal reporting systems from public authorities and stakeholders	❑	❑		
iii. Feedback from third parties (e. g. monitoring conducted by independent bodies)	❑	❑		
iv. Other (specify in comment)	❑	❑		
37. Do we gather evaluation evidence through the following methods:				
a) Repeated waves of financial literacy measurement	❑	❑		
b) Basic indicators of financial literacy levels	❑	❑		
c) Qualitative and quantitative evaluation of the programmes part of the national strategy	❑	❑		
i. If yes, which ones? (response in comment)				
38. Do we report these results to:				
a) The government/parliament	❑	❑		
b) General public	❑	❑		
c) Interested stakeholders (specify in comment)	❑	❑		

ISSUE	ANSWER			AVAILABLE TOOLS
	YES	IN PROGRESS	COMMENTS	
RESOURCES				
39. Have we earmarked dedicated resources for the development and implementation of the strategy in a single budget?	❑	❑		
a) If yes, is this budget established for:				
i. The long term (at least several years)	❑	❑		
ii. The whole strategy	❑	❑		
iii. Specific programmes/projects	❑	❑		
b) If not (i.e. a single budget does not exist), do participating authorities set specific amounts in their budgets for the strategy?	❑	❑		
40. Have we encouraged private stakeholders to contribute resources to the strategy implementation?	❑	❑		
a) If yes, what are the main contributors:				
i. National associations/self-regulatory bodies	❑	❑		
ii. Financial institutions	❑	❑		
iii. Others (specify in comment)	❑	❑		
41. If private stakeholders are providing resources to the national strategy is this done through:				
a) Levies on the financial services industry	❑	❑		
b) Financial contributions:				
i. Voluntary	❑	❑		
ii. Mandatory	❑	❑		
iii. For the overall strategy	❑	❑		
iv. For specific projects	❑	❑		
c) In-kind contributions/support:				
i. For the overall strategy	❑	❑		
ii. For specific projects	❑	❑		

ISSUE	ANSWER			AVAILABLE TOOLS
	YES	IN PROGRESS	COMMENTS	
PART IV – DELIVERY MECHANISMS AND PROGRAMME EVALUATION *The strategy framework and its roadmap should provide directions on the delivery, implementation and evaluation of dedicated financial education programmes. (OECD/INFE High-level Principles on National Strategies for Financial Education, 2012, G20 endorsement)*				
DELIVERY METHODS, TRAINING AND TOOLS				
42. Did we define (e.g. in the strategy roadmap) general guidance on the most efficient delivery methods and tools?	❑	❑		OECD Recommendation on Principles and Good Practices for Financial Education and Awareness OECD/INFE High-level Principles on National Strategies for Financial Education
a) If yes, is this based on the following:				
i. Research results	❑	❑		
ii. Identified national good practices	❑	❑		
iii. Pilot programmes	❑	❑		
iv. International guidance	❑	❑		
v. Other (specify in comment)	❑	❑		
43. Have we set up as part of the strategy:				
a) Train-the-trainers programmes	❑	❑		
b) A single website/source of information for the population	❑	❑		
c) Mass awareness/communication campaigns	❑	❑		
d) Awards or certification for initiatives meeting certain quality criteria	❑	❑		
e) A financial literacy day/week/month	❑	❑		
f) Programmes aimed at specific target audiences (if yes, specify in comment)	❑	❑		

ISSUE	ANSWER			AVAILABLE TOOLS
	YES	IN PROGRESS	COMMENTS	
44. Is financial education taught in schools/universities?		❑		INFE Guidelines on Financial Education in Schools Core competencies on financial literacy for youth
a) If yes, is it provided in:	❑			
i. Kindergarten or primary schools	❑	❑		
ii. Middle, secondary or high schools	❑	❑		
iii. Vocational schools	❑	❑		
iv. Universities	❑	❑		
v. Other further/higher education establishments (if yes, specify in comment)	❑	❑		
MONITORING AND EVALUATION OF PROGRAMMES				
45. Have we actively promoted the monitoring and evaluation of individual financial education initiatives part of our strategy?	❑	❑		Guide to Evaluating Financial Education Programmes Detailed guidance for evaluating financial education programmes INFE High-level Principles for the Evaluation of Financial Education Programmes Checklist on the evaluation of financial education programmes
46. Do we use robust monitoring and evaluation methodologies to assess the efficiency and impact of the initiatives part of the strategy (such as the ones developed by the OECD/INFE and the World Bank)?	❑	❑		
47. Do we systematically disseminate the the monitoring and evaluation results of initiatives part of the strategy?	❑	❑		
48. Do we centralise information on the results of monitoring and evaluation of initiatives part of the strategy?	❑	❑		
a) If yes, do we disseminate this information internationally (including through the OECD/INFE)?	❑	❑		

ANNEX 2
OECD/INFE HIGH-LEVEL PRINCIPLES ON NATIONAL STRATEGIES FOR FINANCIAL EDUCATION

ENDORSED BY G20 LEADERS IN 2012

INTRODUCTION

With the support of the G20 Mexican Presidency and at the request G20 Finance Ministers and Central Bank Governors in February and April 2012, the OECD/INFE High-Level Principles on National Strategies for Financial Education were submitted to, and endorsed by, G20 Leaders at their meeting in Los Cabos in June 2012.

At the request of the APEC Russian Presidency, these Principles were also transmitted to APEC Ministers of Finance whom welcomed their endorsement by APEC leaders at their meeting on 30 August 2012.

The development of the High-level Principles[16] largely built on the work developed by the OECD/INFE. The OECD/INFE started working on this issue through a dedicated expert subgroup on national strategies for financial education[17] in June 2010. The work began by a wide and comprehensive stock-take of existing practices amongst INFE members between July 2010 and March 2012. This exercise formed the basis of a first comparative analytical report[18] and of these High-level Principles.

The development of the High-level Principles followed an iterative and thorough discussion and review process within the dedicated INFE subgroup and the INFE and also involved the OECD legal department and OECD bodies in charge of financial education (i.e. the OECD Committee on Financial Markets and the OECD Insurance and Private Pensions Committee). Between May 2011 and April 2012, five versions of the principles have been debated and progressively fine-tuned. The fifth and final version of the High-level Principles has been formally approved by the OECD/INFE and by the OECD Committee on Financial Markets and the OECD Insurance and Private Pensions Committee in the course of April 2012.

In the aftermath of the financial crisis, financial literacy[19] has been increasingly recognised as an important individual life skill in a majority of economies. The underlying reasons for this growing policy attention encompass the transfer of a broad range of (financial) risks to consumers, the greater complexity and rapid evolution of the financial landscape, the rising number of active consumers/investors in the financial sphere and the limited ability of regulation alone to efficiently protect consumers. In addition, the consequences of the financial crisis have demonstrated the potential implied costs and negative spill-over effects of low levels of financial literacy for society at large, financial markets and households.

Financial education has thus become an important complement to market conduct and prudential regulation, and improving individuals' financial behaviour(s) has become a long-term policy priority in many countries. This trend has

16 This project benefited from the support of the Russian Trust Fund on financial education and literacy.

17 Chaired by South Africa and Portugal and composed of representatives of Armenia, Canada, Colombia, Czech Republic, France, India, Jamaica, Italy, Mexico, Turkey and United Kingdom.

18 See also Grifoni, A. and F. Messy (2012), "Current Status of National Strategies for Financial Education: A Comparative Analysis and Relevant Practices", OECD Working Papers on Finance, Insurance and Private Pensions, No. 16, OECD Publishing, Paris.

19 Defined as "a combination of financial awareness, knowledge, skills, attitude and behaviours necessary to make sound financial decisions and ultimately achieve individual financial well-being": see Atkinson and Messy (2012).

notably led to the development of a wide range of financial education initiatives by governments, regulators and various other private and civil stakeholders, sometimes combined with financial consumer protection measures.

As the amount of attention and resources spent on financial education has increased so has the importance of ensuring the efficiency and relevance of these programmes and their long term impact. In this respect, the establishment of co-ordinated and tailored strategies at national level has been widely considered to be one of the best means to achieve these efficiency goals[20] while avoiding duplication of resources and efforts. However such national endeavours have often proved to be challenging due to limited long-term commitment from concerned stakeholders, difficult co-operation between them, competing interests and mandates, lack of financial and in-kind resources and other implementation issues.

The High-level Principles are aimed at addressing these issues and offer interested stakeholders, and in particular governments and public authorities, non-binding international guidance and policy options in order to develop efficient national strategies for financial education. As such, they constitute a key global guidance instrument on financial education and awareness. They should be read in conjunction with, and as an overarching framework for, the series of recommendations already produced and endorsed by INFE and the OECD Council on these issues and including:

- **OECD (2005)** Recommendation of the Council on Principles and Good Practices on Financial Education and Awareness;
- **OECD (2008)** Recommendation of the Council on Good Practices for Financial Education relating to Private Pensions;
- **OECD (2008)** Recommendation of the Council on Good Practices for Enhanced Risk Awareness and Education on Insurance issues;
- **OECD (2009)** Recommendation of the Council on Good Practices on Financial Education and Awareness relating to Credit;
- **OECD/INFE (2011)** High-level Principles on the Evaluation of Financial Education Programmes and dedicated Guides on Evaluation; and
- **INFE (2013)** Guidelines for Financial Education in Schools.

The High-level Principles also take into account work carried out by the OECD/INFE for particular groups of the population (including women or underbanked); on measurement of financial literacy and on the role of financial education to support and encourage saving and investment.

The High-level Principles acknowledge that there is no one-size-fits-all model for the development of national strategies for financial education. They are rather aimed at providing general guidance on the main desirable elements of efficient national strategies for financial education which should be applied taking into account countries' circumstances and context.

In this respect, in some countries, the national strategy for financial education may be developed as part of a wider framework aimed at enhancing financial inclusion through improved access to financial products and services, on the supply side, and enhanced financial literacy and awareness, on the demand side. National strategies for financial education should also be conceived as complements to measures aimed at reinforcing the financial consumer protection framework and related regulatory and prudential framework.

Whenever possible and/or relevant, the High-level Principles suggest various options for implementation purposes and/or provide more detailed explanatory guidance in order to provide clear but flexible guidance to policy makers and interested stakeholders.

Such indications are displayed in italics in the document.

[20] See Grifoni and Messy (2012).

TEXT OF THE OECD/INFE HIGH-LEVEL PRINCIPLES ON NATIONAL STRATEGIES FOR FINANCIAL EDUCATION

I - Definition, scope and purpose

A national strategy for financial education (referred to in the rest of the document as "*National Strategy*" or NS) is defined as "**a nationally co-ordinated approach to financial education that consists of an adapted framework or programme**, which:

- Recognises the importance of financial education[21] - including possibly through legislation- and defines its meaning and scope at the national level in relation to identified national needs and gaps (sections I and II);
- Involves the cooperation of different stakeholders as well as the identification of a national leader or co-ordinating body/council (section III);
- Establishes a roadmap to achieve specific and predetermined objectives within a set period of time (section IV); and,
- Provides guidance to be applied by individual programmes in order to efficiently and appropriately contribute to the NS (section V)."

There is no one-size-fits-all model or process for the development of a NS. The process for NS development and the design of its framework should address specific national challenges and be adapted to countries' short and long term policy objectives.

The NS can be part of, or a complement to, an holistic approach aimed at financially empowering consumers and investors through enhanced access to a range of regulated financial services or appropriate financial inclusion[22] and/or improved financial consumer protection framework; or more broadly at promoting the development of sound and fair financial markets and supporting financial stability.

Whether they are part of a wider strategy or not, NS have to be developed to be consistent with related national strategies or initiatives on financial inclusion and financial consumer protection, reflecting the need to develop a trilogy approach on financial consumer empowerment promoted by the G20 and the OECD/INFE.

The process for establishing and implementing the NS can follow different paths depending on countries' circumstances. Accordingly, the articulation of the following 4 sections (which mirrors the NS abovementioned definition) does not necessarily reflect a sequential order, but the main elements of a NS which can be put in place at different times or simultaneously in countries depending on their context.

The specific objectives of the financial literacy component can range from improved awareness, confidence, knowledge and understanding of consumers and investors on financial issues to making savvier financial decisions. They can also involve more tailored priorities including reaching out to specific and potentially vulnerable segments of the population, as well as addressing identified policy priorities (see also section IV).

The preparation and development of the NS on one hand and its implementation on the other hand can involve different parties and timeframes.

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[21] Defined by the OECD in 2005 as "*the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice develop the skills and confidence to become more aware of (financial) risks and opportunities to make informed choices, to know where to go for help, and take other effective actions to improve their financial well-being*".

[22] Financial inclusion is currently defined in various ways. The G20 Global Partnership on Financial Inclusion and the INFE subgroup on the role of financial education in financial inclusion have developed globally acceptable definitions. For the sake of this document, the agreed working definition of the INFE subgroup will be used "*the process of promoting affordable, timely and adequate access to a range of regulated financial products and services and broadening their use by all segments of society through the implementation of tailored existing and innovative approaches including financial awareness and education with a view to promote financial well-being as well as economic and social inclusion*".

Considering the diversity of experiences, the OECD/INFE should continue to provide a platform for peer learning through which countries that have developed a NS can share lessons learnt and good practices.

II – Preparation of the national strategy: Defining its scope and purpose through assessment, mapping and consultation

Ideally, the development of a NS should involve the whole sequence of appropriate assessment, mapping, consultative and communication processes and preparatory surveys. Such preparation should preferably be driven by the government, a public or regulatory authority or a national consultative/steering body.

In order to avoid losing momentum but taking into account possible challenges (including political willingness and available resources), this preparatory step should be followed in a timely manner, or concomitant with, the design of a common framework (sections III and IV) and its implementation (section V).

The process for the development of the NS is important in order to raise the level of awareness of financial literacy issues at a national level, build trust among various stakeholders, identify the best modalities for co-ordination and ensure relevance at the national level. It can also be instrumental in identifying a leading authority for the NS and establishing adequate co-ordination mechanisms in readiness for implementation.

A- Mapping and evaluation of existing initiatives

The preparatory phase should notably encompass the mapping and review of:

- existing financial education initiatives promoted by public, private and civil society stakeholders;
- relevant research and literature; and
- international practices (including the OECD and INFE instruments, analytical and comparative surveys, findings and recommendations[23]).

The mapping exercise should allow the identification of relevant and trusted partners, operational and replicable practices, as well as possible inefficiencies and/or gaps.

B- Assessments of the needs of the population and main policy issues

Assessments of the needs of the population in terms of financial literacy and of the main national policy shortcomings should also be conducted. Such assessment(s) should preferably be based on a national measurement of financial literacy[24].

The assessment(s) can also draw information from sources such as consumer surveys and market research, opinions polls, consumers' complaints, financial market surveys, financial and economic indicators or other consultative processes.

The assessment(s) should enable a better definition of the NS main targets, priorities and short and long term objectives, as well as provide a baseline from which to measure change.

C- Consultation

A mechanism or mechanisms to ensure consultation and co-ordination between the various NS stakeholders (and possibly the general public) should also be identified and activated during this preparatory phase.

The mechanism can include consultative processes and/or the creation of a dedicated platform or council/board including relevant stakeholders. The scope and level of formality of these structures will depend on the country's circumstances and context.

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[23] See also Grifoni, A. and F. Messy (2012).

[24] For example, the measure developed at an international level by the OECD/INFE and by the World Bank.

D- National awareness and communication

The reporting and adequate communication of the results of this preparatory phase and the official announcement of the launch and development of the NS to relevant stakeholders and the public should be actively promoted and publicised.

Appropriate communication can help further raise awareness on the importance of financial education and the related NS and reinforce buy-in from key stakeholders and the population at large.

III - Governance mechanism and the role of main stakeholders in the national strategy

The NS framework should be tailored to national circumstances and be flexible. It should also rely on transparent co-ordination and governance mechanisms with an identified leading authority or governing mechanism and shared but clearly defined roles and responsibilities for relevant stakeholders.

A- Leadership and governing structure

The NS should preferably be initiated, developed and monitored by a widely credible and unbiased leading authority or governing mechanism. It should be recognised and promoted at the highest policy level. Such a leading authority or governing mechanism should possess expertise and ideally a dedicated mandate on financial education (or consumer empowerment issues including financial education). It should also have the necessary resources and possibly enforcement powers to enable it to develop and ensure the appropriate implementation of a nationally-adapted, sustainable and efficient NS.

The leading authority or governing mechanism can be an existing public authority or body (either government, public body regulator(s) or council), a new and dedicated body or a new mechanism/structure aimed at co-ordinating various responsible authorities. Such new structures can take various forms[25]*, and can involve, and be financially supported by, a range of stakeholders.*

B- Co-ordination and the roles and responsibilities of various stakeholders

The NS framework should involve cross-sectoral co-ordination at a national level of the various stakeholders known to be competent and interested in financial education. Such co-ordination should encompass the setting of responsibilities and roles consistent with the main stakeholders' expertise, strengths, interests and resources. It should be sufficiently flexible to adapt to changing circumstances and permit renegotiations amongst concerned stakeholders whenever necessary in order to better co-ordinate the various financial education programmes and avoid unnecessary duplication.

1) Public authorities

All potentially relevant public stakeholders should be involved, to the extent possible, including ministries (and in particular the Ministries of Finance and Education), the Central Bank, the financial regulator(s) and supervisor(s), as well as other public national, regional and local authorities[26].

Depending on national circumstances, the involvement of public authorities should at least encompass:

- the preparation and establishment of the NS framework, in consultation with other stakeholders;
- the identification of overarching goals and national priorities for financial education; and,
- the design and/or promotion of effective and flexible regulation, guidance, quality standards, codes of conduct[27] and/or licensing in order to achieve these objectives through the provision of appropriate and high quality financial education programmes.

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[25] For example, a steering committee, council, platform, board or an independent authority.

[26] Such as deposit guarantee scheme bodies.

[27] These should be based on international criteria such as those developed by the OECD/INFE.

The actions of public authorities should not substitute or duplicate existing efficient initiatives by non-public stakeholders, but rather strive to co-ordinate, facilitate, reinforce and ensure the quality of the actions of all stakeholders.

2) Private sector and financial service providers[28]

Owing to the expertise and resources of market players and in particular financial institutions, their role in financial education and in the development of related NS should be promoted as a component of their social responsibility and good governance.

The private sector contribution to financial education should at the same time be monitored and guided in order to manage potential conflicts of interests. The involvement of national associations or self-regulatory bodies should be encouraged as well as the private sponsorship of public or civil society programmes. Dedicated national and/or international quality standards, charters and/or codes of conduct for the development and implementation of financial education programmes by the private sector should be developed; and their enforcement by private actors actively supported. More generally, the development of financial education programmes by the private sector should not involve the promotion and/or marketing of specific financial products or services.

The actions of private sector and financial service providers can take various forms including their involvement in the preparation and/or development of the NS framework, the implementation of financial education initiatives, the provision of dedicated material or training programmes, the participation in public-private partnerships, and support for public or civil society initiatives.

3) Other civil society and international stakeholders

Other partners, such as relevant nongovernmental organisations, trade unions, consumer associations, employers, media and other national disseminators (e.g. public servants) should also be involved in the NS framework development and/or its implementation.

International cooperation, including through the OECD and its INFE, should be further encouraged and used to promote the development of efficient NS.

IV - Roadmap of the national strategy: Key priorities, target audiences, impact assessment and resources

The NS framework should encompass the design of a tailored roadmap including an overall and cross-sectoral vision; realistic, measurable and time-bound objectives; and the definition of relevant policy priorities[29] and, where relevant, target audiences. It should also plan an overall impact assessment and identify appropriate resources.

The roadmap should be sufficiently flexible and take account of the dynamic context of the NS (including the political environment). It should be reconsidered regularly through research and analysis to ensure the continued relevance of its content.

A- Common defined objectives and policy priorities

The NS framework should define an overall and cross-sectoral vision and set general, realistic and measureable objectives and policy priorities for the NS in accordance with the findings of the preparatory phase and the circumstances of the country.

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[28] In the framework of their commercial activities, financial service providers, their intermediaries and authorised agents have a responsibility to provide objective and timely information and advice to their customers as well as ensure the qualification and adequate training of their staff (especially those involved in the selling of financial products and interacting with customers) – see G20 High-level Principles on Financial Consumer Protection (2011) and OECD (2005) Recommendation for further guidance on financial service providers and authorised agents' role and responsibilities *vis-à-vis* consumers and their customers through their commercial activities.

[29] Where appropriate, more detailed OECD/INFE Recommendations on Principles, Guidelines and Good Practices as well as other relevant international work are referred to in the following subsections in order to provide particular guidance on specific contents of the NS Roadmap. Such guidance should be implemented taking into account countries' specific circumstances.

These objectives and policy priorities should preferably involve the design of a tailored roadmap of short-term and intermediate outputs, as well as anticipated longer-term outcomes and the setting of quantitative[30] and possibly qualitative targets for the overall NS and relevant policy priorities.

The roadmap should also contain a time schedule for the achievement of these objectives and relevant policy priorities.

Depending on national circumstances, policy priorities can include increased access to, and use of, appropriate financial services[31], more suitable saving and investment, reduced indebtedness and more responsible credit [32], improved level and quality of saving for retirement and related pension issues[33], as well as savvier decisions vis-à-vis risk and insurance[34].

B- Target audiences

The NS framework and its roadmap should recommend the introduction of financial education as early as possible in individuals' lives and preferably through its inclusion in the school curriculum.[35]

Drawing on the results of the preparatory surveys, the framework should also indicate the main target audiences and priorities of the NS and, if relevant, a focus on particular vulnerable groups of the population.

In principle, a NS should aim to ensure that all segments of the population become financially literate. In practice and according to national circumstances and identified needs, this may mean targeting specific (vulnerable) groups with more intensive interventions or greater resources. Such groups[36] may include elderly populations, youth, migrants, low income groups, women[37], workers, the unemployed as well as communities speaking a different language and ethnic groups.

C- Overall impact assessment

Methods should be identified within the NS framework and its roadmap in order to assess the implementation of the NS and provide an overall measure of its impact.

Overall impact should preferably be assessed through the development of national financial literacy surveys planned at the beginning of the NS and conducted at regular intervals (e.g. 3 to 7 years).

These surveys can be carried out using various methods including the OECD/INFE dedicated methodology. These regular surveys can be coupled with the development of additional indicators aimed at monitoring the impact of policies and evolution of financial literacy skills and needs and qualitative surveys.

D- Resources

Financial and in-kind resources should ideally be earmarked for the development, implementation and evaluation of the NS, if not for the whole strategy, at least by each of the main stakeholders involved. This is particularly important if the roadmap defines some specific projects.

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30 Depending on policy priorities, these could include the level of financial access, indebtedness, saving - in particular for retirement- quality of investments, level of fraud, number and nature of consumers' claims, etc.

31 For Good Practices and more detailed information and guidance see notably the work of the Global Partnership for Financial Inclusion and the OECD/INFE subgroup on the role of financial education in financial inclusion.

32 See OECD (2009) Recommendation of the Council on Good Practices for Financial Education and Awareness relating to Credit.

33 See OECD (2008) Recommendation of the Council on Good Practices for Financial Education relating to Private Pensions.

34 See OECD (2008) Recommendation of the Council on Good Practices for Enhanced Risk Awareness and Education on Insurance Issues.

35 See INFE (2012) Guidelines for Financial Education in Schools.

36 Such vulnerable groups and in particular elderly population should also be protected by adequate financial consumer protection framework.

37 For more detailed information on Empowering Women through Financial Education and Awareness, See Hung *et al* (2012) and OECD (2012), *Gender Equality in Education, Employment and Entrepreneurship: Final Report to the MCM 2012*, Chapter 2.6.

A combination of various public and private financial resources as well as funding through tailored partnerships should be considered. Financial contributions by the private sector to the NS should be actively encouraged.

Financial contributions by the private sector can include a levy on the industry, a voluntary contribution through financial and in-kind support to public and civil society financial education programmes, or through national associations or self-regulatory bodies.

V- Implementation of the national strategy: Delivery mechanisms and evaluation of programmes

The NS framework and its roadmap should ideally provide directions on the delivery, implementation and evaluation of dedicated financial education programmes.

Depending on countries circumstances, the development of the NS framework (sections II, III and IV) and its implementation may involve different parties, resources and timeframe.

A- Delivery methods, training and tools38

The NS framework should preferably make general recommendations on the most efficient delivery methods and tools based on identified good practices and ongoing research.

These should include:

- the use of a wide and appropriate range of delivery methods and dissemination channels adapted to the circumstances of the population at large and those of targeted groups;
- the promotion of financial education on a regular basis to communities and throughout the lives of individuals ;
- the appropriate training of disseminators and providers of financial education; and,
- the development and promotion of tailored regulation, quality standards and codes of conduct by competent public authorities and their implementation by providers of financial education programmes.

B- Impact and process evaluation of programmes

The monitoring and impact evaluation of individual financial education programmes contributing to the overall NS should also be promoted actively and developed as part of each relevant programme. The use of already identified and available methods[39] should be recommended.

[38] See also Box 1.

[39] Such as those developed by the OECD/INFE and the World Bank.

Box 1: Further guidance on delivery methods, training and tools

The NS can also include the following guidance for the provision and delivery of financial education programmes:

- *The preferences and needs of target groups should be assessed in order to design, develop and evaluate tailored and adapted dissemination tools. These can include:*
  - *Wide and targeted public awareness campaigns to inform the public about the financial education needs of the population and important risk and financial issues; the development of these campaigns should be planned on a regular basis at a national and/or regional level.*
  - *Objective and interactive website(s) with online information and advice should be established and maintained preferably by public stakeholders. This can include comparisons of various types of financial products. This source of information should be widely publicised and appropriate incentives can be provided to consumers to encourage them to access and use it.*
  - *A range of other tools as appropriate including paper materials, workshops and training, and advice centres, etc.*
- *Particular attention should be paid to the quality and timing of the delivery of financial education:*
  - *Financial education provision should be as straightforward and engaging as possible and also include interactive tools and tips such as budgeting plans to help individuals make suitable financial decisions;*
  - *The development, use and evaluation of innovative tools aimed at influencing consumers' financial behaviours rather than improving their financial knowledge should also be promoted. These can encompass social marketing tools or the use of relevant findings of behavioural economics and psychological research; and,*
  - *Financial education should preferably be provided to individuals and or communities at "teachable moments" of their lives when they are making long term plans, when they need or are about to make important (financial) decisions (e.g. wedding, pregnancy, new job, divorce, retirement, unemployment etc) or when they are in an environment conducive to learning (such as school, adult education colleges, the workplace).*
- *The development and careful monitoring of programmes to train the persons providing financial education and/or programmes aimed at training and teaching potential future disseminators of financial education (e.g. the media, public servants, employees, etc) should be encouraged and promoted. This should help to enhance the effectiveness and reach of financial education initiatives.*
- *The development of financial education awards and, resources permitting, licensing and certification of programmes and providers can also be considered.*
- *Incentives can also be developed to encourage funding to support direct provision of financial education by non-profit organisations, educational institutions, as well as local or regional governments.*

ANNEX 3
OECD/INFE GUIDELINES FOR PRIVATE AND NOT-FOR-PROFIT STAKEHOLDERS IN FINANCIAL EDUCATION

Process

The Guidelines were developed by the OECD International Network on Financial Education (INFE), comprising now representatives from over 110 economies. The Guidelines are aimed at being disseminated and actively used by financial authorities and other stakeholders involved in financial education, which are also welcome to inform the OECD/INFE Secretariat of their use.

Following the endorsement by G20 Leaders in 2012 of the High-level Principles on National Strategies for Financial Education, these Guidelines are ultimately expected to be part of a policy handbook on the implementation of national strategies for financial education called for by G20 Leaders in 2013.

The draft Guidelines were prepared by the INFE, made available for public consultation between 18 November 2013 and 10 January 2014, and then revised based on comments received.[40]

The Guidelines were approved by the OECD/INFE Technical Committee in May 2014 and by the OECD bodies responsible for financial education (the Committee on Financial Markets and the Insurance and Private Pensions Committee) in August 2014. The final version of the guidelines was included in a progress report on the implementation of national strategies for financial education transmitted to G20 Finance Ministers and Central Bank Governors at their meeting in Cairns in September 2014 and to G20 Leaders at their Brisbane Summit in November 2014.

Background

The growing relevance of financial education[41] in recent years has been accompanied by an increasing involvement in financial education of a wide range of actors, including governments, regulators, financial institutions, not-for-profit organisations, and the civil society. The participation of diverse stakeholders with potentially diverging goals, interests, and approaches has highlighted the need to foster coordination in order to avoid duplication of efforts and resources while at the same time ensuring the relevance, quality and consistency of financial education initiatives.

The OECD/INFE started addressing these issues in 2010 by developing policy analysis on national strategies for financial education, which led to the OECD/INFE High-level Principles on National Strategies for Financial Education, endorsed by the G20 in June 2012. The joint Russia's G20 Presidency-OECD publication on *Advancing National*

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40 The Secretariat received replies and comments from the following institutions:

- Public authorities: Australian Securities and Investments Commission (ASIC); Austria Federal Ministry of Labour, Social Affairs and Consumer Protection (Bundesministerium für Arbeit, Soziales und Konsumentenschutz - BMASK); Brasil Central Bank (Banco Central do Brasil - BCB); New Zealand Commission for Financial Capability (CFFC); Guatemala's Superintendence of Banks (Superintendecia de Bancos de Guatemala – SIB).
- Not-for-profit organisations and industry associations: Association of Chartered Certified Accountants (ACCA); Aflatoun; Canadian Foundation for Economic Education (CFEE); Child and Youth Finance International (CYFI); European Banking Federation (EBF); European Fund and Asset Management Association (EFAMA); pfeg, UK; Massey University, Financial Education and Research Centre, New Zealand / Dr. Pushpa Wood; World Savings and Retail Banking Institute-European Savings and Retail Banking Group (WSBI-ESBG).
- Financial institutions: BBVA, Spain; and Intesa-Sanpaolo, Italy.

41 Financial education is defined by the OECD as "the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being" (OECD, 2005).

Strategies for Financial Education provides further insights on recent developments in G20 economies and invited countries.

To deepen its work on national strategies, the OECD/INFE considered that further work was needed to address practical implementation issues through the development of a policy handbook on the implementation of national strategies for financial education, and of guidelines on private and not-for-profit stakeholders in financial education. The latter are particularly relevant to ensure that efforts of private and not-for-profit entities are appropriately coordinated, monitored and evaluated, and that conflicts of interest are adequately addressed.

The OECD and its INFE have already addressed issues relating to the involvement of private stakeholders, by clarifying the role of the private sector in particular through various policy instruments, including:

- the OECD Recommendation of the Council on Principles and Good Practices for Financial Education and Awareness (OECD, 2005);
- the OECD/INFE High-Level Principles on National Strategies for Financial Education (OECD/INFE, 2012);
- the INFE Guidelines for Financial Education in Schools and the guidance on learning frameworks on financial education (OECD, 2014).

Starting in 2012, the OECD/INFE pursued a specific stream of work on the involvement of private and not-for-profit entities in financial education by carrying out an international mapping of the involvement of private and not-for-profit stakeholders in financial education and of any related principles or codes of conduct.

Based on this mapping and on previous OECD/INFE policy instruments, the OECD/INFE developed the current Guidelines for Private and Not-for-profit Stakeholders in Financial Education (referred to as the Guidelines in what follows).

The Guidelines are, first, intended for public authorities who want to set a framework and define criteria for the involvement of private and not-for-profit stakeholders in national financial education strategies and programmes. They are also meant to be used by private and not-for-profit stakeholders involved in financial education to develop their own codes of conduct and guide their initiatives.

During the 12th INFE meeting held in Paris, France in October 2013, the Guidelines were approved for public consultation with OECD/INFE affiliates and observers, as well as other interested stakeholders. Sixteen institutions from the public, private and not-for-profit sectors participated in the public consultation from November 2013 to January 2014. This document was revised to address the relevant comments received. The Guidelines were approved by the OECD/INFE Technical Committee on 21 May 2014, and by the OECD bodies responsible for financial education (i.e., the Committee on Financial Markets and the Insurance and Private Pensions Committee) and were circulated to G20 Ministers of Finance and Leaders in 2014.

The Guidelines for Private and Not-for-profit Stakeholders in Financial Education contain the following parts:

- the scope of the Guidelines, including specifically a definition of the stakeholders addressed and of the modalities of their involvement (Section I);
- the Guidelines that relevant private and not-for-profit stakeholders should be encouraged to follow when involved in financial education policies and initiatives (Section II);
- compliance issues (Section III).

TEXT OF THE OECD/INFE GUIDELINES FOR PRIVATE AND NOT-FOR-PROFIT STAKEHOLDERS IN FINANCIAL EDUCATION

Introduction

The growing relevance of financial education in recent years has been accompanied by an increasing involvement in financial education of a wide range of actors, including financial institutions, not-for-profit organisations and the civil society, alongside governments and regulators. This engagement is particularly important for the implementation of national strategies for financial education and for the sustainability of long-term financial education initiatives.

The involvement of private and not-for-profit stakeholders follows different modalities within and across countries, as highlighted in the "Revised Mapping on the Involvement of Private and Not-for-profit Stakeholders in Financial Education and Related Codes of Conduct", including:

- involvement in the design of the national strategy;
- involvement in the implementation of the national strategy, including through *ad hoc* bodies, public-private partnerships, and/or certification and accreditation systems;
- provision of financial support, though mandatory levies and voluntary contributions, in favour of public financial education bodies, strategies, and/or initiatives; and
- the implementation of financial education activities by financial institutions, financial industry associations, NGOs and other civil society associations with little co-ordination within a national framework.

The involvement of private and not-for-profit stakeholders in financial education is essential but poses a number of challenges:

- The involvement of the **private sector** in financial education can bring a number of benefits including the contribution of financial resources, specialist and up-to-date knowledge on financial issues, and efficient communication. Moreover, some financial sector stakeholders are well positioned to reach a wide audience, to exploit teachable moments related to key financial decisions, and to combine financial education with financial inclusion efforts. However, the involvement of private stakeholders in financial education may bring about potential shortcomings, including un-coordinated initiatives, duplication of efforts, lack of teaching experience and expertise, lack of programme evaluation, and a potentially inefficient use of resources. Moreover, the delivery of financial education as a business activity may lead to the use of financial education for commercial purposes. There is also a risk that private organisations are more prone than public and not-for-profit ones to targeting the most profitable and easy-to-reach clients, and to having a preferential focus on short-term views, initiatives and resources.

- Also the participation of **not-for-profit organisations** can bring a number of benefits. Not-for-profit organisations can be especially well-positioned to address hard-to-reach audiences and can have expertise in specific fields (e.g., pedagogical expertise). However, the involvement of not-for-profit organisations may also involve some shortcomings. Financial education initiatives of not-for-profit stakeholders, especially international ones, may lack coordination with other national initiatives, as well as rigorous evaluation. In addition, not all not-for-profit organisations possess an expertise in financial education and some may be tempted to manifest themselves as financial education providers only as a way to seek funding.

It is therefore important to recognise the nature of financial education as a public good, which benefits both consumers and financial institutions, and the need to develop financial education initiatives that are:

- *Coordinated/integrated* in the national framework. It should be preferably channelled through national strategies, partnerships involving different stakeholders, and/or national/international quality standards, certifications, accreditation systems, charters, and/or codes of conduct (whose use should be monitored).
- *Unbiased, fair, equitable, and of high-quality*, meaning that it should ensure that financial education is conducted in the interest of consumers; that it addresses all relevant segments of the population, especially vulnerable groups; and that its content is accurate and up-to-date.

- *Evaluated*, as a way to monitor whether resources are used efficiently and to ensure that feedback on programme effectiveness is circulated and shared among stakeholders.

- *Sustainable*, recognising that long term commitment is required by implementing bodies and that its results will be seen in the long term.

In this context, the following Guidelines define the scope, modalities, and key criteria for the involvement of private and not-for-profit stakeholders in financial education. As such they complement the OECD/INFE High-level Principles on National Strategies for Financial Education and the INFE Guidelines on Financial Education in Schools, which apply fully to areas of financial education not covered by these Guidelines. They also complement the relevant parts of the G20 High-level Principles on Financial Consumer Protection focusing on financial education, but do not address financial consumer protection issues, which are dealt with by the G20/OECD Task Force on Financial Consumer Protection.

I – Scope and definitions

The range of private and not-for-profit stakeholders with an interest in financial education is potentially vast and so is the nature of their activities. This section defines the scope of the Guidelines in terms of the stakeholders addressed and of their role in financial education.[42]

Definition of stakeholders

The set of private and not-for-profit stakeholders with an interest in financial education is large and encompasses a wide range of diverse actors, including for-profit and not-for-profit stakeholders from financial and non-financial sectors. These Guidelines are applicable to all private and not-for-profit stakeholders with an interest in financial education, namely comprising:

1. **For-profit institutions providing financial services**: e.g., banks and other financial institutions, including microfinance institutions, credit institutions, insurance companies, pension funds, stock exchanges, individual financial professionals/providers (including fund and asset managers), and other companies with a licence to provide financial services.

2. **For-profit institutions delivering financial education as a business activity**: e.g., private service providers that are contracted out to carry out financial education on behalf of other public, private and not-for-profit institutions. This group also includes consultancy firms.

3. **Non-financial for-profit institutions**: including non-financial companies (e.g. employers providing financial education in the workplace and/or financing financial education initiatives, media companies, etc.), as well as telecommunication companies involved in mobile banking (i.e. telecommunications companies whose network is used by financial institutions to provide financial services).

4. **Not-for-profit organisations with links to the financial sector but no direct commercial interest**: e.g., industry associations (e.g., associations of banks, investment funds, insurance companies, pension funds, etc.) as well as financial institutions' foundations and financial ombudsmen.

5. **Not-for-profit organisations with no direct link to the financial sector and with an interest in financial education**: non-governmental organisations (NGOs), consumers' associations, trade unions, research institutions, teachers' unions, parents' associations, etc.

[42] These guidelines do not specifically cover the activities of financial services providers, their intermediaries and authorised agents in relation to the provision of financial information and advice to consumers of financial products and services in the course of their commercial activities. These activities are covered by G20 High-level Principles on Financial Consumer Protection (G20, 2011) and by the work of the OECD/G20 Task Force on Financial Consumer Protection on effective approaches to transparency and disclosure, responsible business conduct, and complaint handling and redress (G20/OECD Task Force on Financial Consumer Protection, 2013).

Modalities of involvement of private and not-for-profit stakeholders

The involvement and role of private and not-for-profit stakeholders can take various forms, and can include the following modalities and activities:[43]

- the preparation and/or development of a national strategy framework in co-operation with public authorities;
- the implementation of a national strategy framework or other financial education initiatives, alone or in co-operation with other stakeholders (e.g., from the public, private, and not-for-profit sectors);
- the participation in public-private partnerships (PPPs). PPPs can also take place outside of the scope of / in the absence of a national strategy (where private and not-for-profit stakeholders may have different roles and can be involved to varying degrees, including the definition of objectives, the implementation of initiatives, and the provision of funding);
- the support by the private sector of national and international public and not-for-profit bodies, initiatives, and research through mandatory or voluntary contributions, in the form of financial resources or in kind;
- the preparation of dedicated financial education material and resources, including teaching and training material; and the delivery of training programmes, face-to-face or using a variety of media (television, radio, websites, etc.);
- the organisation of awareness/sensitisation campaigns, conferences, forums, and related events, including contests and annual financial literacy days/weeks; the professional development of teachers delivering financial education in schools, and the training of trainers delivering financial education outside schools; and
- the monitoring and evaluation of financial education programmes, and similar activities that contribute to enhancing the knowledge base of effective financial education initiatives.

II – Guidelines

Private and not-for-profit stakeholders should be encouraged, in accordance with the regional, national and global context, to reduce to a minimum potential shortcomings related to their participation in financial education activities. These include lack of coordination, duplication of efforts, inefficient use of resources, lack of fairness in the extent of outreach, as well as potential conflicts between commercial and educational activities. In order to ensure that their participation is appropriate, private and not-for-profit stakeholders should adhere to a number of guidelines in the design and implementation of financial education initiatives.

In addressing these potential shortcomings, it should be recognised that some population subgroups are particularly vulnerable to financial abuse and may not be able to fully distinguish commercial from educational purposes, also due to low financial literacy. Depending on national circumstances vulnerable group may include young people, people with special education needs, elderly, women, and/or migrants. Vulnerable groups should be particularly protected in the application of these Guidelines.[44]

A) Framework for the involvement of private and not-for-profit stakeholders in financial education policies and initiatives

1. Co-ordination between public, private and not-for-profit stakeholders

In order to maximise the benefit to consumers, to avoid the duplication of efforts, and to ensure fair and adequate outreach, financial education initiatives by private and not-for-profit stakeholders should be mapped and integrated into any existing national strategy for financial education or other coordinated policy framework at the national, state or regional level. If such a framework does not exist yet, private and not-for-

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[43] The OECD/INFE High-Level Principles on National Strategies for Financial Education mention the role of various stakeholders in the design and implementation of national strategies for financial education, including that of the private sector and financial service providers, the civil society and other international stakeholders (OECD/INFE, 2012).

[44] See also the OECD/INFE Policy Guidance on Financial Empowerment for Vulnerable Groups.

profit stakeholders should be encouraged to participate in the design of a national strategy, and/or to co-ordinate among themselves if a national strategy is not planned.[45]

Co-ordination among stakeholders through partnerships, working groups and other fora should preferably be carried by a leading public authority or body, which should also establish from the outset the roles and responsibilities of private and not-for-profit stakeholders.[46]

Whenever private and not-for-profit stakeholders are involved in the design and delivery of financial education in schools, co-ordination with the national school curriculum and/or education policies should also be ensured. [47]

2. Managing potential conflicts of interest and other shortcomings

The involvement of private and not-for-profit stakeholders should be designed in such a way to enhance its efficiency and outreach, and to identify and address, to the extent possible, potential conflicts of interest that can arise when institutions with a commercial interest are involved in financial education.

Potential shortcomings can be addressed through the following (non-mutually exclusive) channels:

a. **Support for public strategies and initiatives**. The involvement of private and not-for-profit stakeholders through the financial and in-kind support of national strategies and initiatives should be encouraged and disclosed, but not as a means of direct marketing/advertising.

b. **Indirect involvement of financial institutions**. Whenever possible, the involvement of financial for-profit institutions should preferably be carried out within the framework of the financial education activities of the relevant national industry association or self-regulatory body, which should also be the promoting entity.

c. **Development of, and compliance with, codes of conduct.** Private and not-for-profit stakeholders should be encouraged to participate in national strategies for financial education and/or other nationally coordinated financial education initiatives through specific codes of conduct or guidelines detailing the scope, modalities, and criteria for the involvement of private and not-for-profit stakeholders. Such codes of conduct should be developed in coordination with the interested private and not-for-profit stakeholders following the key criteria detailed in Section II.B.

d. **Distinction between commercial and educational activities**. Direct involvement of private and not-for-profit stakeholders in financial education initiatives should be designed and developed so as to make sure that educational activities can be clearly distinguished from commercial/marketing activities.[48] Consumers' interests should be given priority, in particular ensuring that:

   i. Financial providers refrain from using educational initiatives to promote their own products and services and/or to criticise the products of their competitors;

   ii. Conflicts of interest of organisations and individuals in carrying out awareness, communication, and financial education activities are disclosed and managed; and,

   iii. Educational resources are distinguished from commercial material.

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45 See the OECD/INFE High-level Principles on National Strategies for Financial Education (OECD/INFE, 2012) about any aspect related to governance mechanisms and the role of main stakeholders in a national strategy not covered in these Guidelines.

46 The OECD/INFE High-level Principles on National Strategies for Financial Education state that "the national strategy framework should involve cross-sectoral co-ordination at a national level of the various stakeholders known to be competent and interested in financial education". They also recommend that "the national strategy should preferably be initiated, developed and monitored by a widely credible and unbiased leading authority or governing mechanism" (OECD/INFE, 2012).

47 See the INFE Guidelines on Financial Education in Schools (OECD, 2014) about any aspect related to the involvement of private and not-for-profit stakeholders in the delivery of financial education in schools not covered in these Guidelines.

48 The OECD/INFE High-level Principles on National Strategies for Financial Education state that "the development of financial education programmes by the private sector should not involve the promotion and/or marketing of specific financial products or services" (OECD/INFE, 2012).

B) Key criteria for the involvement of private and not-for-profit stakeholders in the implementation of financial education initiatives

The implementation of financial education initiatives by private and not-for-profit stakeholders should follow a number of key criteria. Compliance with these key criteria should be monitored appropriately (see Section III).

1. Objectivity

The content and format of any material and physical environments (e.g. locations dedicated to financial education delivery, such as learning centres, museums, etc.) used for financial education training and awareness initiatives that is developed, promoted or used by private and not-for-profit stakeholders should be balanced, impartial, unbiased, and not linked to their commercial priorities. In particular, materials should not be specific to a given product or provider. Any branding, logo, or reference to a financial institution should be kept to a minimum and within limits agreed in advance and in accordance with national circumstances.

Similarly, staff and representatives of private stakeholders participating in financial education delivery should not carry out marketing activities on behalf of their organisation.

While the objectivity criterion is important for all financial education programmes developed by any stakeholder, it is particularly important that it is followed by financial sector stakeholders, as a means to ensure an appropriate distinction between educational and commercial activities, and to reinforce the credibility of the initiative.

2. Quality of resources and trainers

Financial education materials and programmes should be developed in the interest of consumers and learners and of addressing their needs. They should also make reference to financial consumers' rights and responsibilities as appropriate.

All information, awareness and education **resources**, including those developed, promoted or used by private and not-for-profit stakeholders should be:

a. **tailored** to national and local contexts, including social, economic, cultural and linguistic circumstances;

b. **appropriate** to the target audience's level of literacy, numeracy, financial knowledge, technological ability, learning styles and preferences; they should especially avoid technical jargon unless appropriate to the audience;

c. **fair** in addressing all relevant population segments (for instance in terms of gender, age, social background, culture, ability, and any additional factor depending on national/local circumstances and needs);

d. **accurate**, complete, up-to-date and of high quality; as well as

e. **easily accessible** to individuals.

When staff members of private and not-for-profit stakeholders act as financial literacy **trainers**, they should:

a. be trained and/or qualified in order to have adequate subject knowledge and confidence to teach financial literacy topics;

b. have adequate teaching skills to address the target audience, especially in the case of children and young people (within or outside schools); and

c. conduct any direct intervention in the classroom under the oversight of and in collaboration with the school teaching/management staff.[49]

3. Monitoring and evaluation[50]

As for all other financial education programmes, the design of financial education initiatives involving private and not-for-profit stakeholders should preferably include:

d. a pilot/trial phase of the financial education programmes and related resources, before they are scaled up to the full audience of interest; and

e. rigorous and independent monitoring (process evaluation) and impact evaluation. These should be included in the programme design from the beginning to assess to what extent the programme meets participants' needs and programme objectives.[51] Evaluation results should be shared publicly, or at least among the relevant stakeholders, to allow a wider audience to benefit from feedback on programme effectiveness.

In developing such impact assessments, stakeholders should refer for guidance to the INFE High-level Principles for the Evaluation of Financial Education Programmes and the related practical guides.[52]

III – Compliance issues

Public authorities responsible for coordinating national financial education strategies and/or other nationally coordinated frameworks should consider, resources permitting and given countries' legal framework, the creation of awards, accreditation, certification, and licensing systems of programmes and providers. These should establish the criteria and the modalities under which private and not-for-profit stakeholders can deliver financial education, based on the guidelines and key criteria detailed in Section II.

More generally, public authorities responsible for coordinating national financial education policies should be encouraged to develop and implement monitoring and compliance mechanisms to ensure that private and not-for-profit stakeholders involved in financial education are accountable and comply with national codes of conduct and/or these international Guidelines.

49 See also the INFE Guidelines on Financial Education in Schools, Box 2 (OECD, 2014).

50 See the INFE High-level Principles for the Evaluation of Financial Education Programmes (OECD/INFE, 2012).

51 The OECD Recommendation on Principles and Good Practices for Financial Education and Awareness states that "Financial education provided by financial institutions should be regularly assessed to ensure it meets consumer needs. This may be achieved through partnerships with independent, not-for-profit financial advisory bodies that may have better connection with consumers, particularly those facing disadvantage in their participation in financial markets (OECD, 2005, para 17)".

52 www.oecd.org/daf/fin/financial-education/evaluatingfinancialeducationprogrammes.htm

Within a fast evolving financial landscape where access to financial services is made easier while more risks are being transferred to citizens, financial literacy has become a key life skill for individuals as well as micro and small businesses. Financial education can help enhance financial literacy by increasing financial knowledge, skills and attitudes. In turn, this can contribute to individuals' (including vulnerable and low income) participation in financial, economic and social life as well as to their financial well-being. As a complement to financial inclusion and financial consumer protection, financial education is also important to restore confidence and trust in financial markets, and can support financial stability.

Today, 59 economies worldwide are implementing national strategies using guidance from the OECD/INFE High-level Principles on National Strategies for Financial Education. The Policy Handbook describes the experiences of these economies and addresses challenges that countries have faced in implementing the Principles.

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OECD

GLOBAL HEALTH RISKS

Mortality and burden of disease attributable to selected major risks

World Health Organization

GLOBAL HEALTH RISKS

Mortality and burden of disease attributable to selected major risks

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Summary

The leading global risks for mortality in the world are high blood pressure (responsible for 13% of deaths globally), tobacco use (9%), high blood glucose (6%), physical inactivity (6%), and overweight and obesity (5%). These risks are responsible for raising the risk of chronic diseases such as heart disease, diabetes and cancers. They affect countries across all income groups: high, middle and low.

The leading global risks for burden of disease as measured in disability-adjusted life years (DALYs) are underweight (6% of global DALYs) and unsafe sex (5%), followed by alcohol use (5%) and unsafe water, sanitation and hygiene (4%). Three of these risks particularly affect populations in low-income countries, especially in the regions of South-East Asia and sub-Saharan Africa. The fourth risk – alcohol use – shows a unique geographic and sex pattern, with its burden highest for men in Africa, in middle-income countries in the Americas and in some high-income countries.

This report uses a comprehensive framework for studying health risks developed for *The world health report 2002*, which presented estimates for the year 2000. The report provides an update for the year 2004 for 24 global risk factors. It uses updated information from WHO programmes and scientific studies for both exposure data and the causal associations of risk exposure to disease and injury outcomes. The burden of disease attributable to risk factors is measured in terms of lost years of healthy life using the metric of the disability-adjusted life year. The DALY combines years of life lost due to premature death with years of healthy life lost due to illness and disability.

Although there are many possible definitions of "health risk", it is defined in this report as "a factor that raises the probability of adverse health outcomes". The number of such factors is countless and the report does not attempt to be comprehensive. For example, some important risks associated with exposure to infectious disease agents or with antimicrobial resistance are not included. The report focuses on selected risk factors which have global spread, for which data are available to estimate population exposures or distributions, and for which the means to reduce them are known.

Five leading risk factors identified in this report (childhood underweight, unsafe sex, alcohol use, unsafe water and sanitation, and high blood pressure) are responsible for one quarter of all deaths in the world, and one fifth of all DALYs. Reducing exposure to these risk factors would increase global life expectancy by nearly 5 years.

Eight risk factors (alcohol use, tobacco use, high blood pressure, high body mass index, high cholesterol, high blood glucose, low fruit and vegetable intake, and physical inactivity) account for 61% of cardiovascular deaths. Combined, these same risk factors account for over three quarters of ischaemic heart disease: the leading cause of death worldwide. Although these major risk factors are usually associated with high-income countries, over 84% of the total global burden of disease they cause occurs in low- and middle-income countries. Reducing exposure to these eight risk factors would increase global life expectancy by almost 5 years.

A total of 10.4 million children died in 2004, mostly in low- and middle-income countries. An estimated 39% of these deaths (4.1 million) were caused by micronutrient deficiencies, underweight, suboptimal breastfeeding and preventable environmental risks. Most of these preventable deaths occurred in the WHO African Region (39%) and the South-East Asia Region (43%).

Nine environmental and behavioural risks, together with seven infectious causes, are responsible for 45% of cancer deaths worldwide. For specific cancers, the proportion is higher: for example, tobacco smoking alone causes 71% of lung cancer deaths worldwide. Tobacco accounted for 18% of deaths in high-income countries.

Health risks are in transition: populations are ageing owing to successes against infectious diseases; at the same time, patterns of physical activity and food, alcohol and tobacco consumption are changing. Low- and middle-income countries now face a double burden of increasing chronic, noncommunicable conditions, as well as the communicable diseases that traditionally affect the poor. Understanding the role of these risk factors is important for developing clear and effective strategies for improving global health.

Abbreviations

AIDS .... acquired immunodeficiency syndrome
BMI............. body mass index
CRA............. comparative risk assessment
DALY .... disability-adjusted life year
GBD .... global burden of disease
HIV .... human immunodeficiency virus
IUGR .... intrauterine growth restriction
MET .... metabolic equivalent (energy expenditure measured in units of resting energy expenditure)
PAF .... population attributable fraction
UNAIDS .... Joint United Nations Programme on HIV/AIDS
UNICEF .... United Nations Children's Fund
WHO .... World Health Organization
YLD............. years lost due to disability
YLL .... years of life lost (due to premature mortality)

1 Introduction

1.1 Purpose of this report

A description of diseases and injuries and the risk factors that cause them is vital for health decision-making and planning. Data on the health of populations and the risks they face are often fragmentary and sometimes inconsistent. A comprehensive framework is needed to pull together information and facilitate comparisons of the relative importance of health risks across different populations globally.

Most scientific and health resources go towards treatment. However, understanding the risks to health is key to preventing disease and injuries. A particular disease or injury is often caused by more than one risk factor, which means that multiple interventions are available to target each of these risks. For example, the infectious agent *Mycobacterium tuberculosis* is the direct cause of tuberculosis; however, crowded housing and poor nutrition also increase the risk, which presents multiple paths for preventing the disease. In turn, most risk factors are associated with more than one disease, and targeting those factors can reduce multiple causes of disease. For example, reducing smoking will result in fewer deaths and less disease from lung cancer, heart disease, stroke, chronic respiratory disease and other conditions. By quantifying the impact of risk factors on diseases, evidence-based choices can be made about the most effective interventions to improve global health.

This document – the *Global health risks* report – provides an update for the year 2004 of the comparative risk assessment (CRA) for 24 global risk factors. A comprehensive framework for studying health risks was previously published in the original CRA – referred to here as "CRA 2000" – which presented estimates for 22 global risk factors and their attributable estimates of deaths and burden of disease for the year 2000 *(1)*. This report uses updated information from WHO programmes and scientific studies for both exposure data and the causal associations of risk exposure to disease and injury outcomes. It applies these updated risk analyses to the latest regional estimates of mortality and disease burden for a comprehensive set of diseases and injuries for the year 2004 *(2)*.

1.2 Understanding the nature of health risks

To prevent disease and injury, it is necessary to identify and deal with their causes – the health risks that underlie them. Each risk has its own causes too, and many have their roots in a complex chain of events over time, consisting of socioeconomic factors, environmental and community conditions, and individual behaviour. The causal chain offers many entry points for intervention.

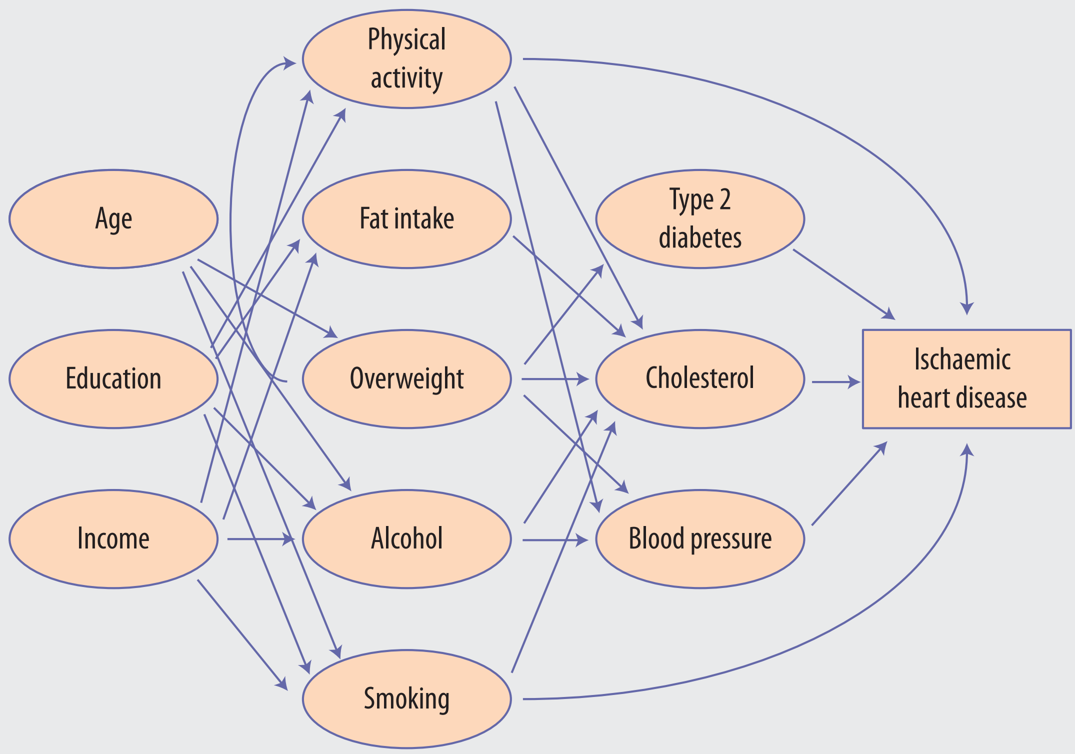
As can be seen from the example of ischaemic heart disease (Figure 1), some elements in the chain, such as high blood pressure or cholesterol, act as a relatively direct cause of the disease. Some risks located further back in the causal chain act indirectly through intermediary factors. These risks include physical inactivity, alcohol, smoking or fat intake. For the most distal risk factors, such as education and income, less causal certainty can be attributed to each risk. However, modifying these background causes is more likely to have amplifying effects, by influencing multiple proximal causes; such modifications therefore have the potential to yield fundamental and sustained improvements to health *(3)*.

In addition to multiple points of intervention along the causal chain, there are many ways that populations can be targeted. The two major approaches to reducing risk are:

- targeting high-risk people, who are most likely to benefit from the intervention
- targeting risk in the entire population, regardless of each individual's risk and potential benefit.

For example, a high-risk intervention for reducing high blood pressure would target the members of the population whose systolic blood pressure lies above 140 mmHg, which is considered hypertensive. However, a large proportion of the population are not considered to be hypertensive, but still have higher than ideal blood pressure levels and thus also face a raised health risk *(4)*. Although the risks for this group are lower than for those classified as hypertensive, there may be more deaths due to high blood pressure in this group because of the larger numbers of people it contains. Considering only the effect of hypertension on population health, as is often done, gives decision-makers an incomplete picture of the

Figure 1: The causal chain. Major causes of ischaemic heart disease are shown. Arrows indicate some (but not all) of the pathways by which these causes interact.



importance of the risk factor for the population because it underestimates the full effect of raised blood pressure on population health. In this report, therefore, exposures are estimated across the entire population and are compared with an ideal scenario, rather than simply focusing on the group that is clinically at high risk.

Population-based strategies seek to change the social norm by encouraging an increase in healthy behaviour and a reduction in health risk. They target risks via legislation, tax, financial incentives, health-promotion campaigns or engineering solutions. However, although the potential gains are substantial, the challenges in changing these risks are great. Population-wide strategies involve shifting the responsibility of tackling big risks from individuals to governments and health ministries, thereby acknowledging that social and economic factors strongly contribute to disease.

1.3 The risk transition

As a country develops, the types of diseases that affect a population shift from primarily infectious, such as diarrhoea and pneumonia, to primarily noncommunicable, such as cardiovascular disease and cancers *(5)*. This shift is caused by:

- improvements in medical care, which mean that children no longer die from easily curable conditions such as diarrhoea
- the ageing of the population, because noncommunicable diseases affect older adults at the highest rates
- public health interventions such as vaccinations and the provision of clean water and sanitation, which reduce the incidence of infectious diseases.

This pattern can be observed across many countries, with wealthy countries further advanced along this transition.

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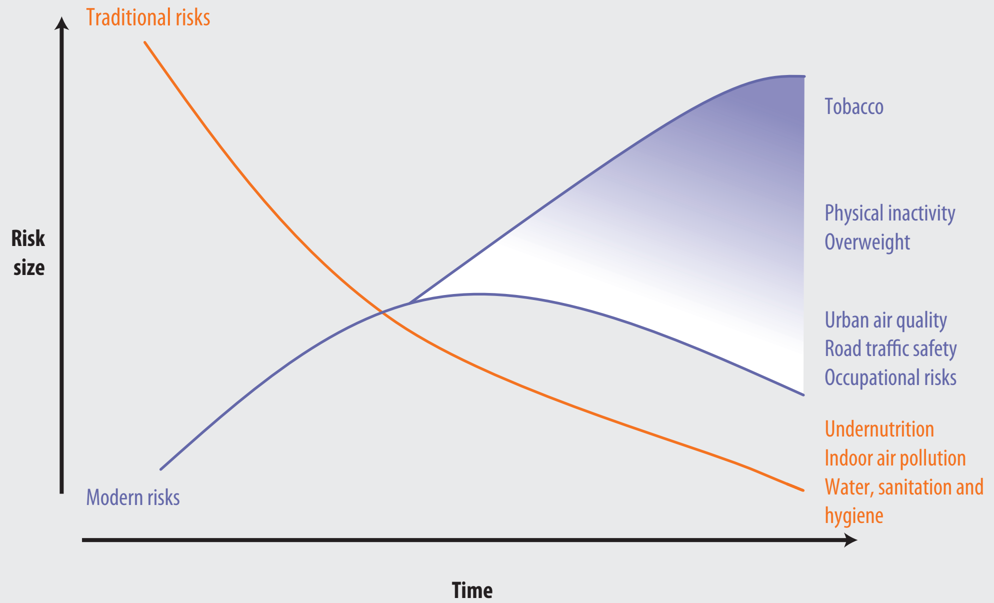
Similarly, the risks that affect a population also shift over time, from those for infectious disease to those that increase noncommunicable disease (Figure 2). Low-income populations are most affected by risks associated with poverty, such as undernutrition, unsafe sex, unsafe water, poor sanitation and hygiene, and indoor smoke from solid fuels; these are the so-called "traditional risks". As life expectancies increase and the major causes of death and disability shift to the chronic and noncommunicable, populations are increasingly facing modern risks due to physical inactivity; overweight and obesity, and other diet-related factors; and tobacco and alcohol-related risks. As a result, many low- and middle-income countries now face a growing burden from the modern risks to health, while still fighting an unfinished battle with the traditional risks to health.

The impact of these modern risks varies at different levels of socioeconomic development. For example, urban air pollution is a greater risk factor in middle-income countries than in high-income countries because of substantial progress by the latter in controlling this risk through public-health policies (Figure 2). Increasing exposure to these emerging risks is not inevitable: it is amenable to public health intervention. For example, by enacting strong tobacco-control policies, low- and middle-income countries can learn from the tobacco-control successes in high-income countries. By enacting such policies early on, they can avoid the high levels of disease caused by tobacco currently found in high-income countries.

Figure 2: The risk transition. Over time, major risks to health shift from traditional risks (e.g. inadequate nutrition or unsafe water and sanitation) to modern risks (e.g. overweight and obesity). Modern risks may take different trajectories in different countries, depending on the risk and the context.

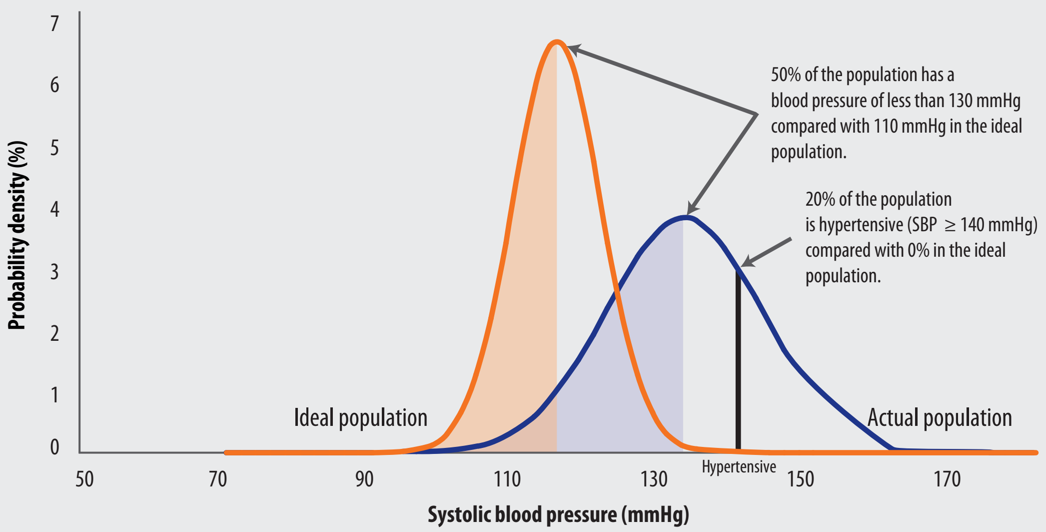


1.4 Measuring impact of risk

This report aims to systematically estimate the current burden of disease and injury in the world's population resulting from exposure to risks – known as the "attributable" burden of disease and injury. We calculate the attributable burden by estimating the population attributable fraction; that is, the proportional reduction in population disease or mortality that would occur if exposure to a risk factor were reduced to an alternative ideal exposure scenario (Figure 3). The number of deaths and DALYs (see Box 1) attributed to a risk factor is quantified by applying the population attributable fraction to the total number of deaths or the total burden of disease (see Annex A for calculation details). The burden of disease – measured in DALYs – quantifies the gap between a population's current health and an ideal situation where everyone lives to old age in full health.

For some risk factors, the ideal exposure level is clear; for example, zero tobacco use is the ideal. In other cases, the ideal level of exposure is less clear. As noted above, a large group of people fall within the clinically "normal" range for blood pressure (i.e. below 140 mmHg) but have blood pressure levels above ideal levels. We select ideal exposures that minimize risk to health. For blood pressure, this means selecting a blood pressure that is not only within the range considered normal, but is also at the low end of that range.

Figure 3: An observed population distribution of average systolic blood pressure (SBP, right-hand distribution) and the ideal population distribution of average systolic blood pressure (left-hand distribution).



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Box 1: Disability-adjusted life years (DALYs)

DALYs are a common currency by which deaths at different ages and disability may be measured. One DALY can be thought of as one lost year of "healthy" life, and the burden of disease can be thought of as a measurement of the gap between current health status and an ideal situation where everyone lives into old age, free of disease and disability.

DALYs for a disease or injury are calculated as the sum of the years of life lost due to premature mortality (YLL) in the population and the years lost due to disability (YLD) for incident cases of the disease or injury. YLL are calculated from the number of deaths at each age multiplied by a global standard life expectancy of the age at which death occurs. YLD for a particular cause in a particular time period are estimated as follows:

YLD = number of incident cases in that period × average duration of the disease × disability weight

The disability weight reflects the severity of the disease on a scale from 0 (perfect health) to 1 (death). The disability weights used for global burden of disease DALY estimates are listed elsewhere *(6)*.

In the standard DALYs in recent WHO reports, calculations of YLD used an additional 3% time discounting and non-uniform age weights that give less weight to years lived at young and older ages *(7)*. Using discounting and age weights, a death in infancy corresponds to 33 DALYs, and deaths at ages 5–20 years to around 36 DALYs.

This report estimates how much burden of disease and injury for 2004 is attributable to 24 selected risk factors (counting the selected occupational risks as one risk factor). These environmental, behavioural and physiological risk factors were selected as having global spread, data available to estimate population exposures and outcomes, and potential for intervention. There are many other risks for health which are not included in the report. In particular, some important risk factors associated with infectious disease agents or with antimicrobial resistance are not included.

Many diseases are caused by multiple risk factors, and individual risk factors may interact in their impact on the overall risk of disease. As a result, attributable fractions of deaths and burden for individual risk factors usually overlap and often add up to more than 100%. For example, two risk factors – smoking and urban air pollution –cause lung cancer. As Figure 4 below illustrates, some lung cancer deaths are attributed to more than one exposure – represented by the area where the circles overlap. This overlapping area represents the percentage of lung cancer deaths in 2004 that could have been averted if either tobacco exposure or urban air pollution had been lower.

The disease and injury outcomes caused by risk exposures are quantified in terms of deaths and DALYs for 2004, as described in a recently released WHO report *(2)*. More-detailed tables of deaths and DALYs for disease and injury causes are available for a number of regional groupings of countries on the WHO web site.[1] Box 2 provides an overview of the global burden of diseases and injuries.

1.5 Risk factors in the update for 2004

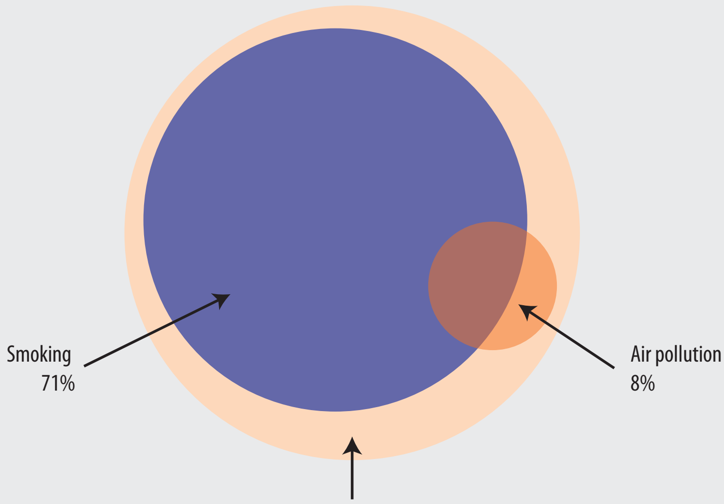
The risk factors chosen for this report all fulfil a number of criteria:

- a potential for a global impact
- a high likelihood that the risk causes each associated disease
- a potential for modification
- being neither too broad (e.g. diet) nor too specific (e.g. lack of broccoli)
- reasonably complete data were available for that risk.

This update for 2004 builds on the previous WHO CRA for the year 2000 *(1)*. It does not include a complete review and revision of data inputs and

[1] http://www.who.int/evidence/bod

Figure 4: Counterfactual attribution. Lung cancer deaths in 2004 (outer circle) showing the proportion attributed to smoking and urban air pollution. Deaths that would have been prevented by removing either exposure are represented by the area where the inner circles overlap.



estimates for every risk factor. The methods and data sources are described in detail in Annex A. The main changes in the 2004 estimates are as follows:

- Risk factor exposure estimates were revised if new estimates were available. For some risk factors (listed in Annex A), previously estimated population exposures were used.
- Where a recent peer-reviewed meta-analysis was available, relative risks from the 2000 CRA analysis were updated. Likewise, some minor revisions to methods based on peer-reviewed publications from WHO programmes or collaborating academic groups were incorporated and are explained in Annex A.
- Two additional risk factors have been included: suboptimal breastfeeding and high blood glucose, based on published peer-reviewed work *(8, 9)*.

For all risk factors, some data were extrapolated when direct information was unavailable; direct information is often absent or scanty in developing countries, where the effects of many risks are highest. Perfect data on a health hazard's potential impact will never exist, so using such projections is justified. Nevertheless, it is important to treat estimates of numerical risk and its consequences with care.

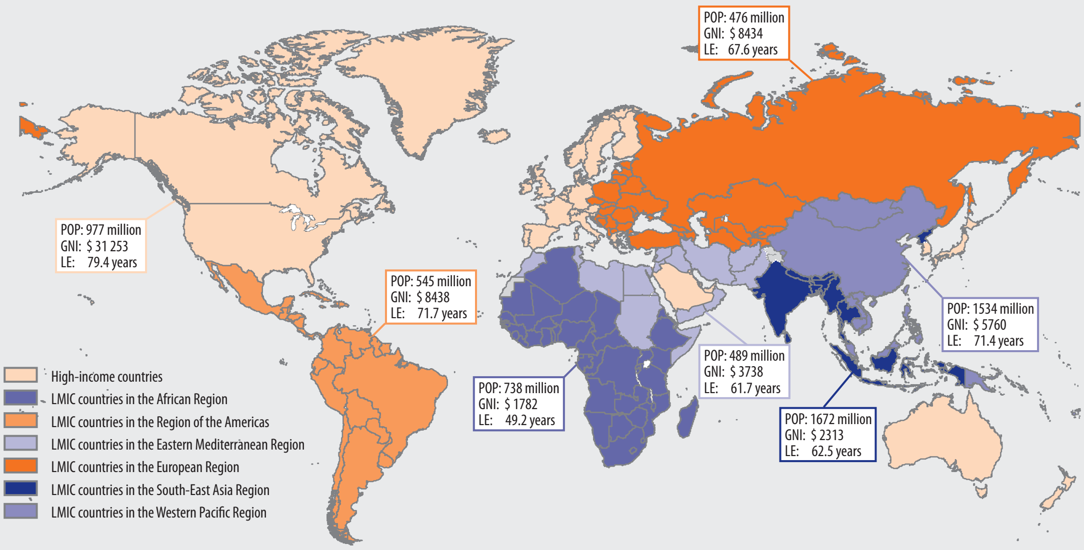
The Bill & Melinda Gates Foundation is funding a study of the global burden of disease in 2005, which is due to be published in late 2010. The study is led by the Institute for Health Metrics and Evaluation at the University of Washington, with key collaborating institutions including WHO, Harvard University, Johns Hopkins University and the University of Queensland *(10)*. The 2005 global burden of disease study will include a comprehensive revision and update of mortality and burden of disease attributable to an extended set of global risks. Where needed, major revisions of methods based on new evidence will be undertaken as part of this study.

1.6 Regional estimates for 2004

This report presents estimates for regional groupings of countries (including the six WHO regions) and income groupings, with the countries grouped as high, medium or low income, depending on their gross national income per capita in 2004. The classification of countries most commonly used here is seven groups, comprising the six WHO regions plus the high-income countries in all regions forming a seventh group (Figure 5). Lists of countries in each regional and income group are available in Table A5 (Annex A). Detailed tables of results by cause, age, sex and region are available on the WHO web site[1] for a range of different regional groupings.

High-income countries represent 15% of the world population, middle-income countries about 47% and low-income countries about 37%. The distribution of deaths is similar to that of population across the country income groups, despite the comparatively young populations in the middle-income countries, and the even younger populations in the low-income countries. In contrast, more than half of DALYs occur in low-income countries. A further 38% occur in middle-income countries, while only 8% occur in high-income countries.

Figure 5: Low- and middle-income countries grouped by WHO region, 2004. Refer to Table A5 (Annex A) for a list of countries and definitions of categories.



POP, population; **GNI,** gross national income per capita (international dollars); **LE,** life expectancy at birth; **LMIC,** low- and middle-income countries.

[1] http://www.who.int/evidence/bod

Box 2: The global burden of diseases and injuries

The global burden of disease 2004 update provides a comprehensive assessment of the causes of loss of health in the different regions of the world, drawing on extensive WHO databases and on information provided by Member States *(2)*. This consolidated study assesses the comparative importance of diseases and injuries in causing premature death, loss of health and disability in different populations: by age, sex and for a range of country groupings by geographic region or country income, or both. Results at country and regional level are also available on the WHO web site (http://www.who.int/evidence/bod).

The study contains details of the leading causes of death, disability and burden of disease in various regions, and detailed estimates for 135 disease and injury cause categories. Findings include the following:

- Worldwide, Africa accounts for 9 out of every 10 child deaths due to malaria, for 9 out of every 10 child deaths due to AIDS, and for half of the world's child deaths due to diarrhoeal disease and pneumonia.
- In low-income countries, the leading cause of death is pneumonia, followed by heart disease, diarrhoea, HIV/AIDS and stroke. In developed or high-income countries, the list is topped by heart disease, followed by stroke, lung cancer, pneumonia and asthma or bronchitis.
- Men between the ages of 15 and 60 years have much higher risks of dying than women in the same age category in every region of the world. This is mainly because of injuries, including violence and conflict, and higher levels of heart disease. The difference is most pronounced in Latin America, the Caribbean, the Middle East and Eastern Europe.
- Depression is the leading cause of years lost due to disability, the burden being 50% higher for females than males. In all income strata, alcohol dependence and problem use is among the 10 leading causes of disability.

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2 Results

2.1 Global patterns of health risk

More than one third of the world's deaths can be attributed to a small number of risk factors. The 24 risk factors described in this report are responsible for 44% of global deaths and 34% of DALYs; the 10 leading risk factors account for 33% of deaths (see Section 3.2). Understanding the role of these risk factors is key to developing a clear and effective strategy for improving global health.

The five leading global risks for mortality in the world are high blood pressure, tobacco use, high blood glucose, physical inactivity, and overweight and obesity. They are responsible for raising the risk of chronic diseases, such as heart disease and cancers. They affect countries across all income groups: high, middle and low (Table 1 and Figure 6).

This report measures the burden of disease, or lost years of healthy life, using the DALY: a measure that gives more weight to non-fatal loss of health and deaths at younger ages (Box 1). The leading global risks for burden of disease in the world are underweight and unsafe sex, followed by alcohol use and unsafe water, sanitation and hygiene (Figure 7). Three of the four leading risks for DALYs – underweight, unsafe sex, and unsafe water, sanitation and hygiene – increase the number and severity of new cases of infectious diseases, and particularly affect populations in low-income countries, especially in the regions of South-East Asia and sub-Saharan Africa (Table 2). Alcohol use has a unique geographic and sex pattern: it exacts the largest toll on men in Africa, in middle-income countries in the Americas, and in some high-income countries.

Geographical patterns

Substantially different disease patterns exist between high-, middle- and low-income countries. For high- and middle-income countries, the most important risk factors are those associated with chronic diseases such as heart diseases and cancer. Tobacco is one of the leading risks for both: accounting for 11% of the disease burden and 18% of deaths in high-income countries. For high-income countries, alcohol, overweight and blood pressure are also leading causes of healthy life years lost: each being responsible for 6–7% of the total. In middle-income countries, risks for chronic diseases also cause the largest share of deaths and DALYs, although risks such as unsafe sex and unsafe water and sanitation also cause a larger share of burden of disease than in high-income countries (Tables 1 and 2).

In low-income countries, relatively few risks are responsible for a large percentage of the high number of deaths and loss of healthy years. These risks generally act by increasing the incidence or severity of infectious diseases. The leading risk factor for low-income countries is underweight, which represents about 10% of the total disease burden. In combination, childhood underweight, micronutrient deficiencies (iron, vitamin A and zinc) and suboptimal breastfeeding cause 7% of deaths and 10% of total disease burden. The combined burden from these nutritional risks is almost equivalent to the entire disease and injury burden of high-income countries.

Demographic patterns

The profile of risk changes considerably by age. Some risks affect children almost exclusively: underweight, undernutrition (apart from iron deficiency), unsafe water, smoke from household use of solid fuels and climate change. Few of the risk factors examined in this report affect adolescent health per se, although risk behaviours starting in adolescence do have a considerable effect on health at later ages. For adults, there are considerable differences depending on age. Most of the health burden from addictive substances, unsafe sex, lack of contraception, iron deficiency and child sex abuse occurs in younger adults. Most of the health burden from risk factors for chronic diseases such as cardiovascular disease and cancers occurs at older adult ages.

Men and women are affected about equally from risks associated with diet, the environment and unsafe sex. Men suffer more than 75% of the burden from addictive substances and most of the burden from occupational risks. Women suffer all of the burden from lack of contraception, 80% of the deaths caused by iron deficiency, and about two thirds of the burden caused by child sexual abuse.

Figure 6: Deaths attributed to 19 leading risk factors, by country income level, 2004.

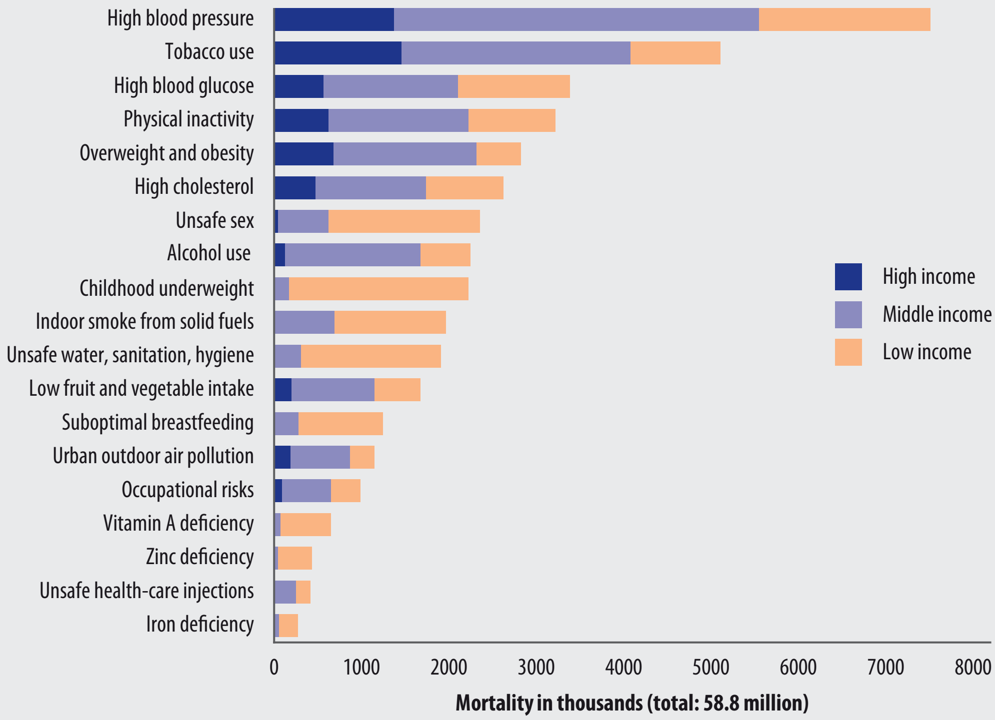

Figure 7: Percentage of disability-adjusted life years (DALYs) attributed to 19 leading risk factors, by country income level, 2004.

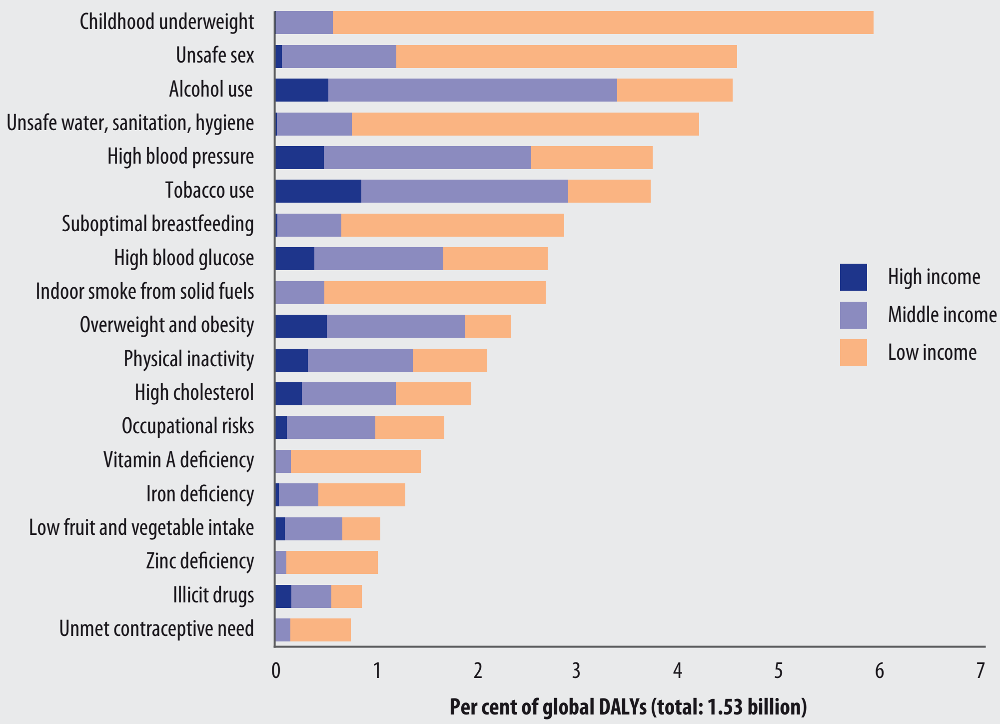

Table 1: Ranking of selected risk factors: 10 leading risk factor causes of death by income group, 2004

	Risk factor	Deaths (millions)	Percentage of total		Risk factor	Deaths (millions)	Percentage of total
	World				***Low-income countries[a]***		
1	High blood pressure	7.5	12.8	1	Childhood underweight	2.0	7.8
2	Tobacco use	5.1	8.7	2	High blood pressure	2.0	7.5
3	High blood glucose	3.4	5.8	3	Unsafe sex	1.7	6.6
4	Physical inactivity	3.2	5.5	4	Unsafe water, sanitation, hygiene	1.6	6.1
5	Overweight and obesity	2.8	4.8	5	High blood glucose	1.3	4.9
6	High cholesterol	2.6	4.5	6	Indoor smoke from solid fuels	1.3	4.8
7	Unsafe sex	2.4	4.0	7	Tobacco use	1.0	3.9
8	Alcohol use	2.3	3.8	8	Physical inactivity	1.0	3.8
9	Childhood underweight	2.2	3.8	9	Suboptimal breastfeeding	1.0	3.7
10	Indoor smoke from solid fuels	2.0	3.3	10	High cholesterol	0.9	3.4
	Middle-income countries[a]				***High-income countries[a]***		
1	High blood pressure	4.2	17.2	1	Tobacco use	1.5	17.9
2	Tobacco use	2.6	10.8	2	High blood pressure	1.4	16.8
3	Overweight and obesity	1.6	6.7	3	Overweight and obesity	0.7	8.4
4	Physical inactivity	1.6	6.6	4	Physical inactivity	0.6	7.7
5	Alcohol use	1.6	6.4	5	High blood glucose	0.6	7.0
6	High blood glucose	1.5	6.3	6	High cholesterol	0.5	5.8
7	High cholesterol	1.3	5.2	7	Low fruit and vegetable intake	0.2	2.5
8	Low fruit and vegetable intake	0.9	3.9	8	Urban outdoor air pollution	0.2	2.5
9	Indoor smoke from solid fuels	0.7	2.8	9	Alcohol use	0.1	1.6
10	Urban outdoor air pollution	0.7	2.8	10	Occupational risks	0.1	1.1

[a] Countries grouped by gross national income per capita – low income (US$ 825 or less), high income (US$ 10 066 or more).

Table 2: Ranking of selected risk factors: 10 leading risk factor causes of DALYs by income group, 2004

	Risk factor	DALYs (millions)	Percentage of total		Risk factor	DALYs (millions)	Percentage of total
	World				***Low-income countries[a]***		
1	Childhood underweight	91	5.9	1	Childhood underweight	82	9.9
2	Unsafe sex	70	4.6	2	Unsafe water, sanitation, hygiene	53	6.3
3	Alcohol use	69	4.5	3	Unsafe sex	52	6.2
4	Unsafe water, sanitation, hygiene	64	4.2	4	Suboptimal breastfeeding	34	4.1
5	High blood pressure	57	3.7	5	Indoor smoke from solid fuels	33	4.0
6	Tobacco use	57	3.7	6	Vitamin A deficiency	20	2.4
7	Suboptimal breastfeeding	44	2.9	7	High blood pressure	18	2.2
8	High blood glucose	41	2.7	8	Alcohol use	18	2.1
9	Indoor smoke from solid fuels	41	2.7	9	High blood glucose	16	1.9
10	Overweight and obesity	36	2.3	10	Zinc deficiency	14	1.7
	Middle-income countries[a]				***High-income countries[a]***		
1	Alcohol use	44	7.6	1	Tobacco use	13	10.7
2	High blood pressure	31	5.4	2	Alcohol use	8	6.7
3	Tobacco use	31	5.4	3	Overweight and obesity	8	6.5
4	Overweight and obesity	21	3.6	4	High blood pressure	7	6.1
5	High blood glucose	20	3.4	5	High blood glucose	6	4.9
6	Unsafe sex	17	3.0	6	Physical inactivity	5	4.1
7	Physical inactivity	16	2.7	7	High cholesterol	4	3.4
8	High cholesterol	14	2.5	8	Illicit drugs	3	2.1
9	Occupational risks	14	2.3	9	Occupational risks	2	1.5
10	Unsafe water, sanitation, hygiene	11	2.0	10	Low fruit and vegetable intake	2	1.3

[a] Countries grouped by 2004 gross national income per capita – low income (US$ 825 or less), high income (US$ 10 066 or more).

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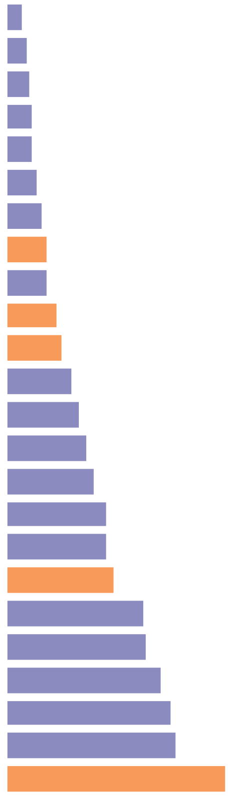
2.2 Childhood and maternal undernutrition

In low-income countries, easy-to-remedy nutritional deficiencies prevent 1 in 38 newborns from reaching age 5.



See footnote 1

Many people in low- and middle-income countries, particularly children, continue to suffer from undernutrition[1]. They consume insufficient protein and energy, and the adverse health effects of this are often compounded by deficiencies of vitamins and minerals, particularly iodine, iron, vitamin A and zinc. Insufficient breast milk also puts infants at an increased risk of disease and death.

Of the risk factors quantified in this report, underweight is the largest cause of deaths and DALYs in children under 5 years, followed by suboptimal breastfeeding (Table 3). These and the other nutrition risks often coexist and contribute to the same disease outcomes. Because of overlapping effects, these risk factors were together responsible for an estimated 3.9 million deaths (35% of total deaths) and 144 million DALYs (33% of total DALYs) in children less than 5 years old. The combined contribution of these risk factors to specific causes of death is highest for diarrhoeal diseases (73%), and close to 50% for pneumonia, measles and severe neonatal infections (Figure 8).

Other important vitamin and mineral deficiencies not quantified in this report include those for calcium, folate, vitamin B_{12} and vitamin D. Calcium and vitamin D deficiency are important causes of rickets and poor bone mineralization in children. Maternal folate insufficiency increases the risk of some birth defects and other adverse pregnancy outcomes. Maternal B vitamin deficiencies may also be associated with adverse pregnancy outcomes and development disabilities in infants.

Underweight

Underweight mainly arises from inadequate diet and frequent infection, leading to insufficient intake of calories, protein, vitamins and minerals. Children under 5 years, and especially those aged 6 months to 2 years, are at particular risk. In 2004, about 20% (112 million) of children under 5 years were underweight (more than two standard deviations below the WHO Child Growth Standards median weight-for-age) in developing countries (see Annex A for details).

Underweight children suffer more frequent and severe infectious illnesses; furthermore, even mild undernutrition increases a child's risk of dying. Chronic undernutrition in children aged 24–36 months can also lead to long-term developmental problems; in adolescents and adults it is associated with adverse pregnancy outcomes and reduced ability to work. Around one third of diarrhoea, measles, malaria and lower respiratory infections in childhood are attributable to underweight. Of the 2.2 million child deaths attributable to underweight globally in 2004, almost half, or 1.0 million, occurred in the WHO African Region, and more than 800 000 in the South-East Asia Region.

Iron deficiency

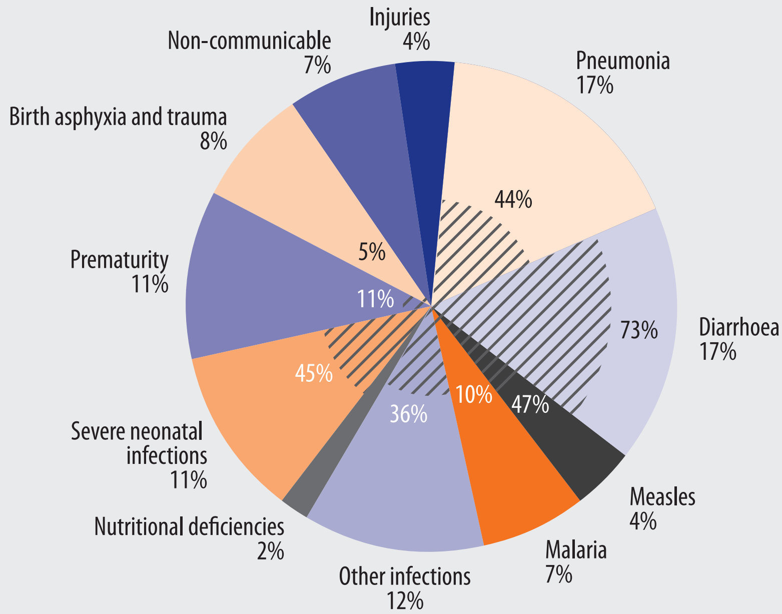
Iron is critically important in muscle, brain and red blood cells. Iron deficiency may occur at any age if diets are based on staple foods with little meat, or people are exposed to infections that cause blood

[1] The schematic shows where the health burden of risk factors in this section fall in comparison to other risks in this report. It is repeated in each section; the full values can be found in Table A4.

Table 3: Deaths and DALYs attributable to six risk factors for child and maternal undernutrition, and to six risks combined; countries grouped by income, 2004

Risk	World	Low income	Middle income
Percentage of deaths			
Childhood underweight	3.8	7.8	0.7
Suboptimal breastfeeding	2.1	3.7	1.1
Vitamin A deficiency	1.1	2.2	0.3
Zinc deficiency	0.7	1.5	0.2
Iron deficiency	0.5	0.8	0.2
Iodine deficiency	0.0	0.0	0.0
All six risks	**6.6**	**12.7**	**2.1**
Percentage of DALYs			
Childhood underweight	6.0	9.9	1.5
Suboptimal breastfeeding	2.9	4.1	1.7
Vitamin A deficiency	1.5	2.4	0.4
Zinc deficiency	1.0	1.7	0.3
Iron deficiency	1.3	1.6	1.0
Iodine deficiency	0.2	0.2	0.3
All six risks	**10.4**	**15.9**	**4.4**

Figure 8: Major causes of death in children under 5 years old with disease-specific contribution of undernutrition, 2004.



Shaded area indicates contribution of undernutrition to each cause of death

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loss; young children and women of childbearing age are most commonly and severely affected. An estimated 41% of pregnant women and 27% of preschool children worldwide have anaemia caused by iron deficiency *(11)*.

Iron deficiency anaemia in early childhood reduces intelligence in mid-childhood; it can also lead to developmental delays and disability. About 18% of maternal mortality in low- and middle-income countries – almost 120 000 deaths – is attributable to iron deficiency. Adding this disease burden to that for iron deficiency anaemia in children and adults results in 19.7 million DALYs, or 1.3% of global total DALYs. Forty per cent of the total attributable global burden of iron deficiency occurs in the South-East Asia Region and almost another quarter in the African Region.

Vitamin A deficiency

Vitamin A is essential for healthy eyes, growth, immune function and survival. Deficiency is caused by low dietary intake, malabsorption and increased excretion due to common illnesses. It is the leading cause of acquired blindness in children. Those under 5 years and women of childbearing age are at most risk. About 33% of children suffer vitamin A deficiency (serum retinol <0.70 μmol/l), mostly in South-East Asia and Africa. The prevalence of low serum retinol is about 44% in African children and reaches almost 50% in children in South-East Asia *(12)*. The prevalence of night blindness caused by vitamin A deficiency is around 2% in African children, and about 0.5% in children in parts of South-East Asia. About 10% of women in Africa and South-East Asia experience night blindness during pregnancy.

Vitamin A deficiency raises the risk of mortality in children suffering from diarrhoeal diseases: 19% of global diarrhoea mortality can be attributed to this deficiency. It also increases the risk of mortality due to measles, prematurity and neonatal infections. Vitamin A deficiency is responsible for close to 6% of child deaths under age 5 years in Africa and 8% in South-East Asia.

Iodine deficiency

Iodine is essential for thyroid function. Iodine deficiency is one of the most easily preventable causes of mental retardation and developmental disability. Maternal iodine deficiency has also been associated with lower mean birth weight, increased infant mortality, impaired hearing and motor skills.

Although salt iodization and iodine supplementation programmes have reduced the number of countries where iodine deficiency remains a problem, about 1.9 billion people – 31% of the world population – do not consume enough iodine. The most affected WHO regions are South-East Asia and Europe *(13)*. The direct sequelae of iodine deficiency, such as goitre, cretinism and developmental disability, resulted in 3.5 million DALYs (0.2% of the total) in 2004.

Zinc deficiency

Zinc deficiency largely arises from inadequate intake or absorption from the diet, although diarrhoea may contribute. It increases the risk of diarrhoea, malaria and pneumonia, and is highest in South-East Asia and Africa *(9)*. For children under 5 years, zinc deficiency is estimated to be responsible for 13% of lower respiratory tract infections (mainly pneumonia and influenza), 10% of malaria episodes and 8% of diarrhoea episodes worldwide.

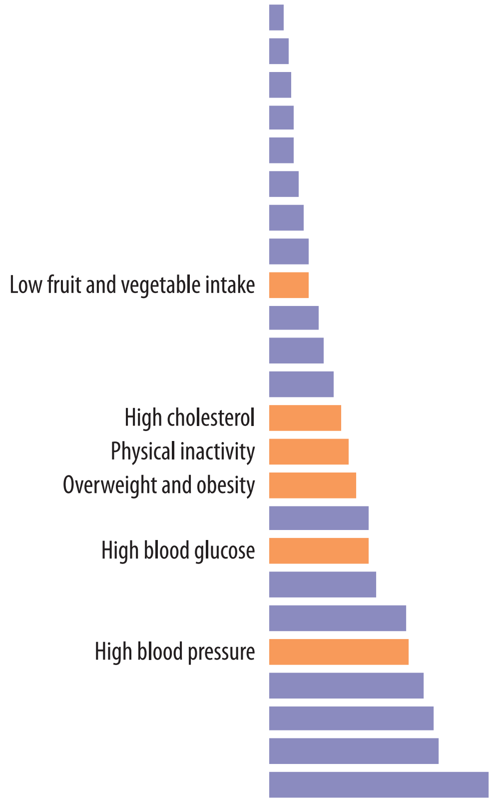
Suboptimal breastfeeding

Breast milk is the healthiest source of nutrition for infants. WHO recommends that infants should be exclusively breastfed during their first 6 months, and continue to receive breast milk through their first 2 years. In developing countries, only 24–32% of infants are exclusively breastfed at 6 months on average, and these percentages are much lower in developed countries. Rates of any breastfeeding are much higher, particularly in Africa and South-East Asia, with over 90% of infants aged 6–11 months breastfed.

Breastfeeding reduces the risk of many perinatal infections, acute lower respiratory infections and diarrhoea in infants below 23 months. Despite the higher prevalence of breastfeeding found in the developing world, developing countries bear more than 99% of the burden of suboptimal breastfeeding. Suboptimal breastfeeding is responsible for 45% of neonatal infectious deaths, 30% of diarrhoeal deaths and 18% of acute respiratory deaths in children under 5 years.

2.3 Other diet-related risk factors and physical inactivity

Worldwide, overweight and obesity cause more deaths than underweight.
The combined burden of these diet-related risks and physical inactivity in low- and middle-income countries is similar to that caused by HIV/AIDS and tuberculosis.



Over time, the risks that populations face tend to shift from risks (such as undernutrition) for infectious disease to risks for chronic disease, many of which are discussed in this section. This is because of past successes combating infectious diseases and their risks, and because populations worldwide are ageing, and these risk factors are more important for adults. Today, 65% of the world's population live in a country where overweight and obesity kills more people than underweight (this includes all high-income and most middle-income countries). The six risk factors discussed in this section account for 19% of global deaths and 7% of global DALYs. These risk factors have the greatest effect on cardiovascular diseases – 57% of cardiovascular deaths can be traced back to one of these risk factors. High blood pressure, which itself is caused by high body mass index (BMI) and physical inactivity, is the leading risk factor in this group (Table 4).

The DALYs lost per 10 000 population due to high cholesterol, high body mass index, high blood pressure, and all six risk factors combined are shown in Figure 9 for high-income countries and for low- and middle-income countries grouped by WHO region. In all regions other than the Western Pacific, the low- and middle-income populations lose more DALYs because of these risks than populations in high-income countries. The attributable burden of disease per capita is greatest in the low- and middle-income countries of Europe.

High blood pressure

Raised blood pressure changes the structure of the arteries. As a result, risks of stroke, heart disease, kidney failure and other diseases increase, not only in people with hypertension but also in those with average, or even below-average, blood pressure. Diet – especially too much salt – alcohol, lack of exercise and obesity all raise blood pressure, and these effects accumulate with age. In developing and developed countries, most adults' blood pressure is higher than the ideal level. Average blood pressure levels are particularly high in middle-income European countries and African countries.

Globally, 51% of stroke (cerebrovascular disease) and 45% of ischaemic heart disease deaths are attributable to high systolic blood pressure. At any given age, the risk of dying from high blood pressure in low- and middle-income countries is more than double that in high-income countries. In the high-income countries, only 7% of deaths caused by high blood pressure occur under age 60; in the African Region, this increases to 25%.

High cholesterol

Diets high in saturated fat, physical inactivity and genetics can increase cholesterol levels. Recent research shows that levels of low-density lipoproteins and high-density lipoproteins are more important for health than total cholesterol. Nevertheless, we calculated the risk of elevated total blood cholesterol because there is more information available

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Table 4: Deaths and DALYs attributable to six diet-related risks and physical inactivity, and to all six risks combined, by region, 2004

Risk	World	Low and middle income	High income
Percentage of deaths			
High blood pressure	12.8	12.1	16.8
High blood glucose	5.8	5.6	7.0
Physical inactivity	5.5	5.1	7.7
Overweight and obesity	4.8	4.2	8.4
High cholesterol	4.5	4.3	5.8
Low fruit and vegetable intake	2.9	2.9	2.5
All six risks	**19.1**	**18.1**	**25.2**
Percentage of DALYs			
High blood pressure	3.8	3.5	6.1
High blood glucose	2.7	2.5	4.9
Physical inactivity	2.1	1.9	4.1
Overweight and obesity	2.4	2.0	6.5
High cholesterol	2.0	1.8	3.4
Low fruit and vegetable intake	1.1	1.0	1.3
All six risks	**7.0**	**6.5**	**12.6**

about average total cholesterol levels in populations worldwide than about average low-density lipoproteins and high-density lipoprotein levels.

Cholesterol increases the risks of heart disease, stroke and other vascular diseases. Globally, one third of ischaemic heart disease is attributable to high blood cholesterol. High blood cholesterol increases the risk of heart disease, most in the middle-income European countries, and least in the low- and middle-income countries in Asia.

High blood glucose

Changes in diet and reductions in physical inactivity levels increase resistance to insulin, which, in turn, raises blood glucose. Genetics play an important role in whether individuals with similar diets and physical activity levels become resistant to insulin. Individuals with high levels of insulin resistance are classified as having diabetes, but individuals with raised blood glucose who do not have diabetes also face higher risks of cardiovascular diseases.

Globally, 6% of deaths are caused by high blood glucose, with 83% of those deaths occurring in low- and middle-income countries. The age-specific risk of dying from high blood glucose is lowest in high-income countries and the WHO Western Pacific Region. Raised blood glucose causes all diabetes deaths, 22% of ischaemic heart disease and 16% of stroke deaths.

Overweight and obesity (high body mass index)

WHO estimates that, in 2005, more than 1 billion people worldwide were overweight (BMI ≥ 25) and more than 300 million were obese (BMI ≥ 30). Mean BMI, overweight and obesity are increasing worldwide due to changes in diet and increasing physical inactivity. Rates of overweight and obesity are projected to increase in almost all countries, with 1.5 billion people overweight in 2015 *(14)*. Average BMI is highest in the Americas, Europe and the Eastern Mediterranean.

The risk of coronary heart disease, ischaemic stroke and type 2 diabetes grows steadily with increasing body mass, as do the risks of cancers of the breast, colon, prostate and other organs. Chronic overweight contributes to osteoarthritis – a major cause of disability. Globally, 44% of diabetes burden, 23% of ischaemic heart disease burden and 7–41% of certain cancer burdens are attributable to overweight and obesity. In both South-East Asia and Africa, 41% of deaths caused by high body mass index occur under age 60, compared with 18% in high-income countries.

Low fruit and vegetable intake

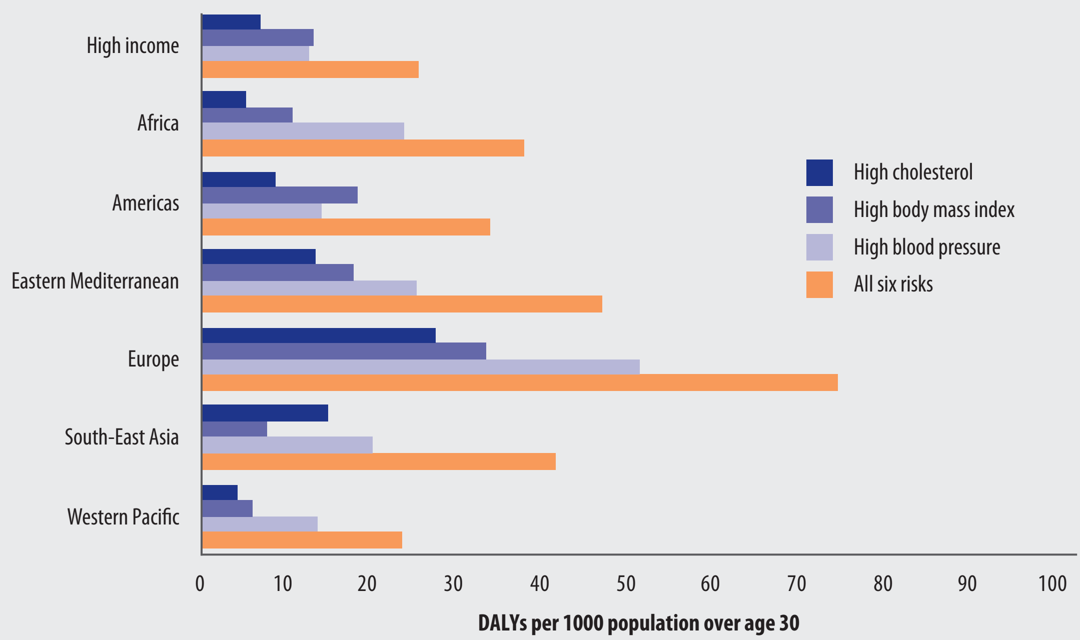
Fruit and vegetable consumption is one element of a healthy diet *(15, 16)*. Fruit and vegetable intake varies considerably among countries: reflecting economic, cultural and agricultural environments.

Insufficient intake of fruit and vegetables is estimated to cause around 14% of gastrointestinal cancer deaths, about 11% of ischaemic heart disease deaths and about 9% of stroke deaths worldwide. Most of the benefit of consuming fruits and vegetables comes from reduction in cardiovascular disease, but fruits and vegetables also prevent cancer. Rates of deaths and DALYs attributed to low fruit and vegetable intake are highest in middle-income European countries and in South-East Asia.

Physical inactivity

Physical activity reduces the risk of cardiovascular disease, some cancers and type 2 diabetes. It can also improve musculoskeletal health, control body weight and reduce symptoms of depression. Physical activity occurs across different domains, including work, transport, domestic duties and during leisure. In high-income countries, most activity occurs during leisure time, while in low-income countries most activity occurs during work, chores or transport. Physical inactivity is estimated to cause around 21–25% of breast and colon cancer burden, 27% of diabetes and about 30% of ischaemic heart disease burden.

Figure 9: Attributable DALY rates for selected diet-related risk factors, and all six risks together, by WHO region and income level, 2004.



2.4 Sexual and reproductive health

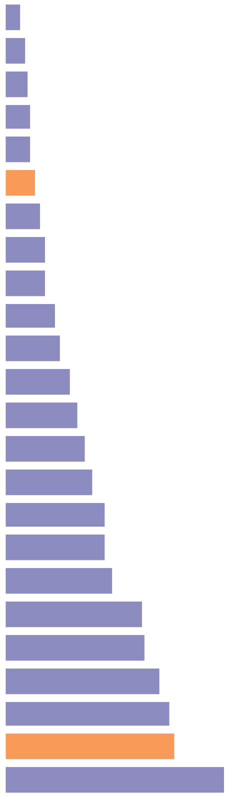
Unsafe sex is the leading risk factor for mortality in African women: 1 million African women are killed annually by HIV, human papillomavirus and other sexually transmitted infections.

We consider sexual behaviours that increase the risk of contracting a sexually transmitted disease as a risk factor – "unsafe sex" – separate from the risk of unintended pregnancy, and its health consequences, associated with non-use and use of ineffective methods of contraception. Using certain forms of contraception, such as condoms, reduces both these risks, but other forms of risk reduction are quite different. Other factors involved in reducing unsafe sex include number of partners, who the partners are, the type of sex involved, knowledge of infection status of partners and use of barrier contraceptives.

Unsafe sex

People's sexual behaviour varies greatly between countries and regions. In 2004, unsafe sex was estimated as being responsible for more than 99% of human immunodeficiency virus (HIV) infection in Africa – the only region where more women than men are infected with HIV or acquired immunodeficiency syndrome (AIDS). Elsewhere, the proportion of HIV/AIDS deaths due to unsafe sex ranges from around 50% in the low- and middle-income countries of the WHO Western Pacific Region to 90% in the low- and middle-income countries of the Americas. In virtually all regions outside Africa, HIV transmission due to unsafe sex occurs predominantly among sex workers and men who have sex with men.

HIV/AIDS is the world's sixth biggest cause of death, and was responsible for 2.0 million deaths in 2004. HIV/AIDS deaths have stabilized and begun to decline in the last few years, partly due to increasing access to HIV treatment and also partly because of changing patterns of sexual behaviour in heavily affected African countries. Currently, 22 million (67%) of the 33 million people with HIV live in Africa, and HIV/AIDS continues to have a heavy impact: life expectancy at birth in the African Region was 49 years in 2004 (without AIDS it would have been 53 years).



All cervical cancer is attributed to sexual transmission of the human papillomavirus. Cervical cancer accounts for 11% of global deaths due to unsafe sex, and is the leading cause of cancer death in the African Region. Almost three quarters of the global burden of unsafe sex occurs in sub-Saharan Africa, and another 15% in India and other countries of the South-East Asia Region. Other sexually transmitted infections such as syphilis, gonorrhoea and chlamydia are entirely attributable to unsafe sex.

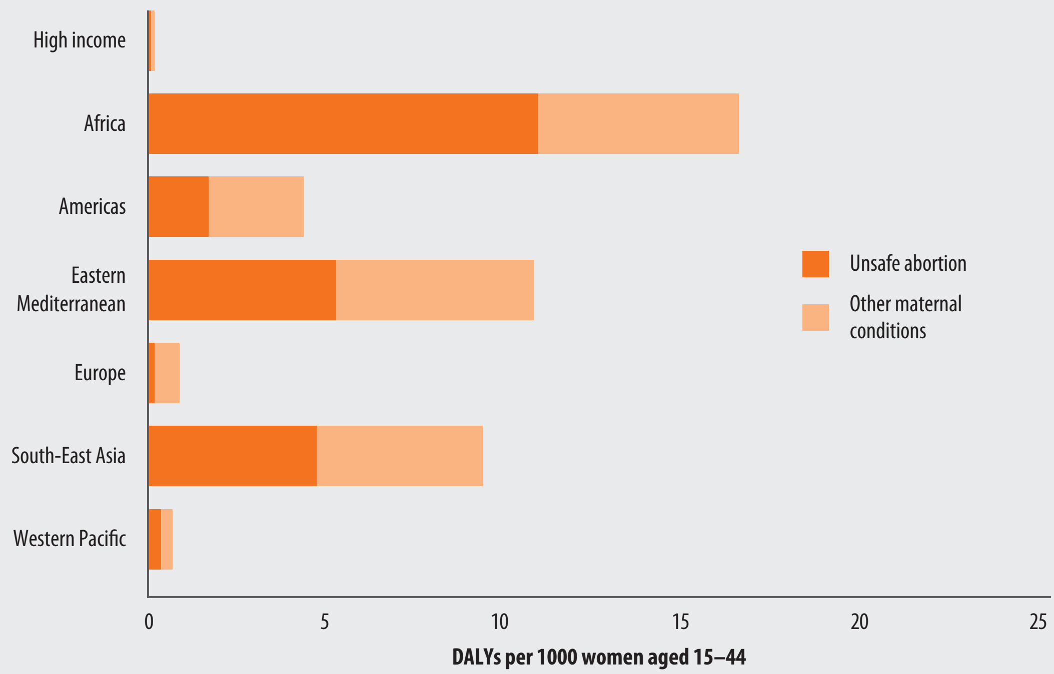
Lack of contraception

Non-use and use of ineffective methods of contraception increase the risk of unintended pregnancy and its consequences, including unsafe abortions. The proportion of women aged 15–44 years who used modern contraception (such as the pill, barrier methods, sterilization or intrauterine device) ranged from 14% in the WHO African Region to 64% in high-income countries. If all women who wanted to space or limit future pregnancies used modern methods, usage would range from 46% in the African Region to 83% in the low- and middle-income countries of the Americas.

Unintended pregnancy leads to unwanted and mistimed births, with the same maternal and perinatal complications as planned births. The risk of abortion-related complications is proportional to the risk of unsafe abortion, which is strongly related to the legality of abortion in the country concerned. Unplanned pregnancies are estimated to be responsible for 30% of the disease burden associated with maternal conditions and around 90% of unsafe abortions globally.

Globally, lack of modern contraception caused around 0.3% of deaths and 0.8% of DALYs. Africa, South-East Asia and low- and middle-income countries in the Eastern Mediterranean Region had the highest disease burden due to lack of contraception – accounting for around 0.5% of deaths and 1.0–1.2% of DALYs in those regions (Figure 10).

Figure 10: Burden of disease attributable to lack of contraception, by WHO region, 2004.



2.5 Addictive substances

In 2004, 70% of deaths caused by tobacco use occurred in low- and middle-income countries.

Smoking and oral tobacco use

Smoking substantially increases the risk of death from lung and other cancers, heart disease, stroke, chronic respiratory disease and other conditions. Environmental tobacco smoke and smoking during pregnancy also harm others. Smoking is increasing in many low- and middle-income countries, while steadily, but slowly, decreasing in many high-income countries *(17)*.

Globally, smoking causes about 71% of lung cancer, 42% of chronic respiratory disease and nearly 10% of cardiovascular disease. It is responsible for 12% of male deaths and 6% of female deaths in the world. Tobacco caused an estimated 5.1 million deaths globally in 2004, or almost one in every eight deaths among adults aged 30 years and over (Table 5). In India, 11% of deaths in men aged 30–59 years were caused by tobacco smoking.

Death rates for smoking-caused diseases are lower in low-income countries than in middle- and high-income countries (Figure 11), reflecting the lower past smoking rates in low-income countries and the higher past smoking rates in high-income countries. Because of the long time lags for development of cancers and chronic respiratory diseases associated with smoking, the impact of smoking-caused diseases on mortality in low- and middle-income countries – and for women in many regions – will continue to rise for at least two decades, even if efforts to reduce smoking are relatively successful.

Alcohol

Alcohol contributes to more than 60 types of disease and injury, although it can also decrease the risk of coronary heart disease, stroke and diabetes. There is wide variation in alcohol consumption across regions. Consumption levels in some Eastern European countries are around 2.5 times higher than the global average of 6.2 litres of pure alcohol per year. With the exception of a few countries, the lowest consumption levels are in Africa and the Eastern Mediterranean.

The net effect of alcohol on cardiovascular disease in older people may be protective in regions where alcohol is consumed lightly to moderately in a regular fashion without binge drinking. Ischaemic stroke deaths, for example, would be 11% higher in high-income countries if no one drank alcohol. However, even in high-income countries, although the net impact on cardiovascular disease is beneficial, the overall impact of alcohol on the burden of disease is harmful (Table 5).

The regions with the highest proportions of deaths attributed to alcohol were Eastern Europe (more than 1 in every 10 deaths), and Latin America (1 in every 12 deaths). Worldwide, alcohol causes more harm to males (6.0% of deaths, 7.4% of DALYs) than females (1.1% of deaths, 1.4% of DALYs) reflecting differences in drinking habits, both in quantity and pattern of drinking. Besides the direct loss of health due to alcohol addiction, alcohol is responsible for approximately 20% of deaths due to motor vehicle accidents, 30% of deaths due to oesophageal cancer, liver cancer, epilepsy and homicide, and 50% of deaths due to liver cirrhosis.

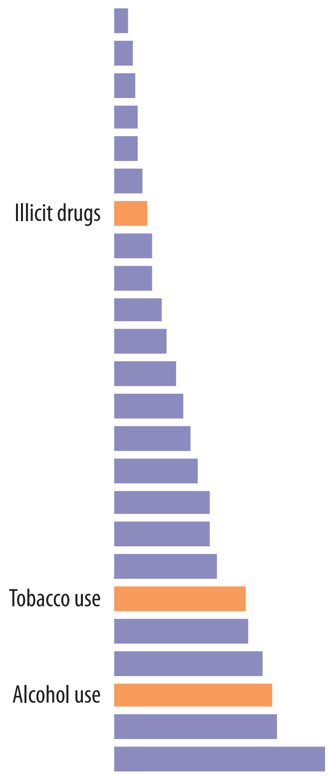
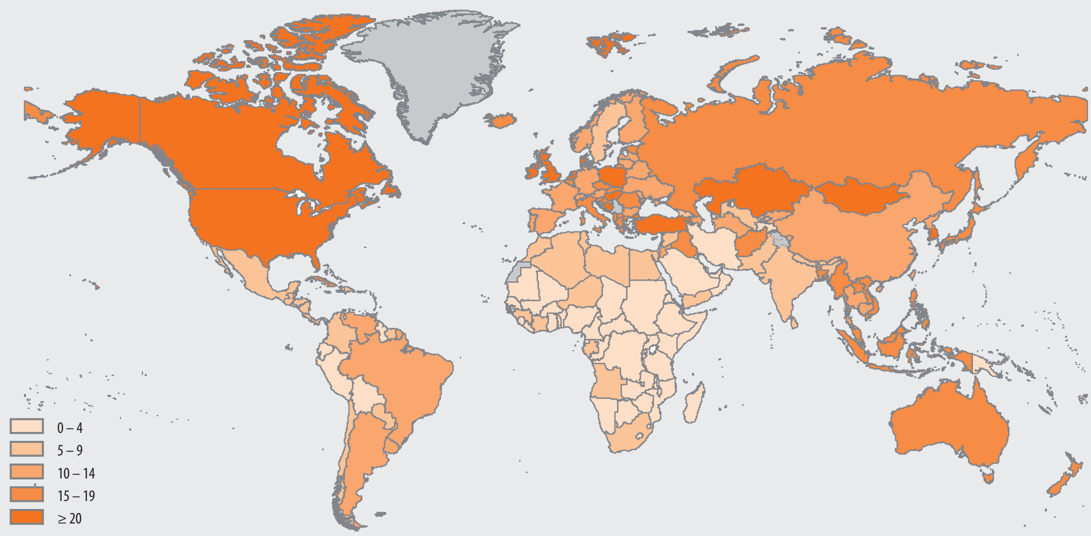


Table 5: Deaths and DALYs attributable to alcohol, tobacco and illicit drug use, and to all three risks together, by region, 2004

Risk	World	Low and middle income	High income
Percentage of deaths			
Alcohol use	3.6	4.0	1.6
Illicit drugs	0.4	0.4	0.4
Tobacco use	8.7	7.2	17.9
All three risks	**12.6**	**11.5**	**19.6**
Percentage of DALYs			
Alcohol use	4.4	4.2	6.7
Illicit drugs	0.9	0.8	2.1
Tobacco use	3.7	3.1	10.7
All three risks	**9.0**	**8.1**	**19.2**

Figure 11: Percentage of deaths over age 30 years caused by tobacco, 2004.



Illicit drug use

Illicit opiate use rose slightly over the period 2000 to 2004, partly due to increased production in Afghanistan, which accounts for 87% of the world's illicit heroin *(18)*. Opiate users are estimated to have risen slightly to around 16 million (11 million using heroin), mostly due to increases in Asia, which contains half of the world's opiate users.

It is difficult to estimate the extent of illegal drug use, and there is considerable uncertainty in the estimated 245 000 deaths attributable to illicit drug use. Dependent users injecting daily for years run the greatest hazard, particularly of HIV/AIDS, overdose, suicide and trauma. Globally, 0.4% of deaths and 0.9% of DALYs were attributed to illicit drug use in 2004. The highest per capita burdens of illicit drug use were in the low- and middle-income countries of the Americas and the Eastern Mediterranean.

2.6 Environmental risks

Unhealthy and unsafe environments cause 1 in 4 child deaths worldwide.

The environment influences the health of people in many ways – through exposures to various physical, chemical and biological risk factors. The five environmental exposures quantified in this report together account for nearly 10% of deaths and disease burden globally (Table 6), and around one quarter of deaths and disease burden in children under 5 years of age.

Unsafe water, sanitation and hygiene

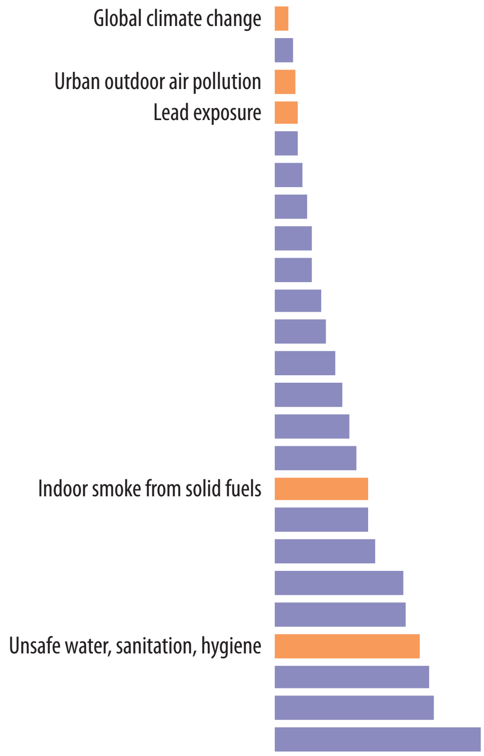
In 2004, 83% of the world's population had some form of improved water supply, while 59% (3.8 billion) had access to basic sanitation facilities *(19)*. Improved drinking-water sources include piped water to the house or yard, public taps or standpipes, boreholes, protected dug wells, protected springs and rainwater collection. Improved sanitation facilities include flush or pour-flush toilets connected to a piped sewer system, septic tanks or pit latrines, and composting toilets.

Inadequate sanitation, hygiene or access to water increase the incidence of diarrhoeal diseases. The highest proportion of deaths and DALYs, as well as the highest absolute numbers, occur in countries with high mortality patterns, such as in Africa and parts of South-East Asia. Most diarrhoeal deaths in the world (88%) is caused by unsafe water, sanitation or hygiene. Overall, more than 99% of these deaths are in developing countries, and around 84% of them occur in children.

Urban outdoor air pollution

Industries, cars and trucks emit complex mixtures of air pollutants, many of which are harmful to health. Of all of these pollutants, fine particulate matter has the greatest effect on human health. Most fine particulate matter comes from fuel combustion, both from mobile sources such as vehicles and from stationary sources such as power plants *(20)*.

Fine particulate matter is associated with a broad spectrum of acute and chronic illness, such as lung cancer and cardiopulmonary disease. Worldwide, it is estimated to cause about 8% of lung cancer deaths,



5% of cardiopulmonary deaths and about 3% of respiratory infection deaths. Particulate matter pollution is an environmental health problem that affects people worldwide, but middle-income countries disproportionately experience this burden.

Indoor smoke from solid fuels

More than half the world's population still cooks with wood, dung, coal or agricultural residues on simple stoves or open fires. Especially under conditions of limited ventilation, solid-fuel use leads to high exposures to indoor smoke and large associated health risks, particularly for women and children.

Indoor smoke from solid-fuel use contains a range of potentially harmful substances, from carcinogens to small particulate matter, all of which cause damage to the lungs. Indoor smoke from solid fuel causes about 21% of lower respiratory infection deaths worldwide, 35% of chronic obstructive pulmonary deaths and about 3% of lung cancer deaths. Of these deaths, about 64% occur in low-income countries, especially in South-East Asia and Africa.

Table 6: Deaths and DALYs attributable to five environmental risks, and to all five risks combined by region, 2004.

Risk	World	Low and middle income	High income
Percentage of deaths			
Indoor smoke from solid fuels	3.3	3.9	0.0
Unsafe water, sanitation, hygiene	3.2	3.8	0.1
Urban outdoor air pollution	2.0	1.9	2.5
Global climate change	0.2	0.3	0.0
Lead exposure	0.2	0.3	0.0
All five risks	**8.7**	**9.6**	**2.6**
Percentage of DALYs			
Indoor smoke from solid fuels	2.7	2.9	0.0
Unsafe water, sanitation, hygiene	4.2	4.6	0.3
Urban outdoor air pollution	0.6	0.6	0.8
Global climate change	0.4	0.4	0.0
Lead exposure	0.6	0.6	0.1
All five risks	**8.0**	**8.6**	**1.2**

A further 28% of global deaths caused by indoor smoke from solid fuels occur in China.

Lead exposure

Because of its many uses, lead is present in air, dust, soil and water. Exposure to lead in the womb and during childhood reduces intelligence quotient (IQ), among other behavioural and developmental effects; for adults, it increases blood pressure. Blood lead levels have been steadily declining in industrialized countries following the phasing-out of leaded fuels. However, where leaded petrol is still used, lead can pose a threat, primarily to children in developing countries. Certain populations in industrialized countries are still exposed to high lead levels: mainly from degraded housing. Overall, 98% of adults and 99% of children affected by exposure to lead live in low- and middle-income countries.

Climate change

Average global temperatures are likely to rise by 1.1–6.4 °C between 1990 and 2100 *(21)*. Physical, ecological and social factors will have a complex effect on climate change. Because of this complexity, current estimates of the attributable and avoidable impacts of climate change are based on models with considerable uncertainty.

Potential risks to health include deaths from thermal extremes and weather disasters, vector-borne diseases, a higher incidence of food-related and waterborne infections, photochemical air pollutants and conflict over depleted natural resources. Climate change will have the greatest effect on health in societies with scarce resources, little technology and frail infrastructure. Only some of the many potential effects were fully quantifiable; for example, the effects of more frequent and extreme storms were excluded. Climate change was estimated to be already responsible for 3% of diarrhoea, 3% of malaria and 3.8% of dengue fever deaths worldwide in 2004. Total attributable mortality was about 0.2% of deaths in 2004; of these, 85% were child deaths. In addition, increased temperatures hastened as many as 12 000 additional deaths; however these deaths were not included in the totals because the years of life lost by these individuals were uncertain, and possibly brief.

2.7 Occupational and other risks

Occupational noise exposure causes about 16% of adult-onset hearing loss.
Unsafe health-care injections cause more deaths in low- and middle-income countries than colon and rectum cancer.

People face numerous hazards at work, which may result in injuries, cancer, hearing loss, and respiratory, musculoskeletal, cardiovascular, reproductive, neurological, skin and mental disorders. This report evaluates only selected risk factors because of the lack of global data, but these occupational risks alone account for 1.7% of DALYs lost worldwide. In addition, there is increasing evidence from industrialized countries to link coronary heart disease and depression with work-related stress *(3, 22)*.

Occupational injuries

Overall, more than 350 000 workers lose their lives each year due to unintentional occupational injuries. More than 90% of this injury burden is borne by men and more than half of the global burden occurs among men working in the WHO South-East Asia and Western Pacific regions. In men aged 15–59 years, 8% of the total burden of unintentional injury is attributable to work-related injuries in high-income countries, and 18% in low- and middle-income countries.

Occupational carcinogens

At least 150 chemical and biological agents are known or probable causes of cancer. Many of these are found in the workplace, even though occupational cancers are almost entirely preventable through eliminating exposure, substituting safer materials, enclosing processes and ventilation. Worldwide, these occupational exposures account for an estimated 8% of lung cancer, which is the most frequent form of occupational cancer.

Occupational airborne particulates

Workplace exposure to microscopic airborne particles can cause lung cancer, chronic obstructive pulmonary disease, silicosis, asbestosis and pneumoconiosis. These diseases take a long time to develop, so, even in countries where the risk has been recognized and controlled, the rate of decline in disease burden has been slow. In developing countries, trends are mostly unknown, but the problem is substantial. Occupational exposure to airborne particulates is estimated to cause 12% of deaths due to chronic obstructive pulmonary disease. Additionally, an estimated 29 000 deaths are due to silicosis, asbestosis and pneumoconiosis caused by silica, asbestos and coal dust exposure.

Ergonomic stressors

Low back pain can be caused by lifting and carrying heavy loads, demanding physical work, frequent bending, twisting and awkward postures. Such pain is rarely life-threatening, but can limit work and social activities. An estimated 37% of back pain is attributable to occupational risk factors. Although not a cause of premature mortality, low back pain causes considerable morbidity and is a major cause of work absences, resulting in economic loss.

Occupational noise

Excess noise is one of the most common occupational hazards, particularly for mining, manufacturing and construction workers, especially in developing countries. Its most serious effect is irreversible hearing impairment, which is completely preventable. Most exposure can be minimized by engineering controls to reduce noise at its source. About 16% of adult-onset hearing loss worldwide is attributable to occupational noise exposure. According to the WHO definition of hearing loss *(23)*, this corresponds to 4.5 million DALYs for moderate or greater levels of hearing loss. Mild hearing loss was not included in this estimate.

Unsafe health-care injections

The complexity of modern health care inevitably brings risks as well as benefits. Patient safety is a serious global public health issue. Estimates show that, in developed countries, as many as 1 patient in 10 is harmed while receiving hospital care.

The probability of patients being harmed in hospitals is higher in developing countries than in industrialized nations. The risk of health-care associated infection in some developing countries is up to 20 times higher than in developed countries. Mortality rates associated with major surgery are also unacceptably high in many developing countries *(24)*. The situation in developing countries may also be made worse because of the use of counterfeit and substandard drugs, and inappropriate or poor equipment and infrastructure.

Injections are overused in many countries, and unsafe injections cause many infections: in particular hepatitis B and C, and HIV. Unsafe injections result mainly from the reuse of injection equipment without adequately sterilizing it. Unsafe injections account for an estimated 30% of hepatitis B infections, 24% of hepatitis C infections, 27% of liver cancer, 24% of liver cirrhosis deaths and 1.3% of HIV deaths worldwide. An estimated 417 000 people died as a result of disease transmitted by unsafe injections in 2004.

Child sex abuse

Child sex abuse increases the risk of a range of mental disorders in adult life, including depression, anxiety disorders, drug or alcohol abuse, and suicide. The percentage of adults who have been sexually abused during childhood ranged from around 4% of men in high-income countries to more than 40% of women in parts of Africa and Asia. About one third of post-traumatic stress disorder cases in women and one fifth in men are attributable to child sex abuse *(25)*. Between 5 and 8% of alcohol and drug use disorders are attributable to child sex abuse. Much of the burden of child sex abuse is disabling rather than fatal, and occurs in the young. Applying these fractions to DALY estimates for 2004 resulted in 0.6% of the global burden of disease being attributable to child sex abuse.

Other health risks

Many thousands of other threats to health exist within and outside the categories considered in this report. They include risk factors for tuberculosis and malaria (together responsible for 4.5% of the global disease burden), family environment risk factors for mental disorders, risk factors for injuries, and a complex range of dietary risks. Some important risks associated with exposure to infectious disease agents or with antimicrobial resistance are also not included. Genetics play a substantial role, although this report has not attempted to quantify the attributable burden of disease from genetic causes. In general, this report's approach and methodology can be applied more widely; as a result, the potential for prevention of other risks to health can be brought to the attention of health policy-makers.

More than 90% of road deaths occur in low- and middle-income countries, where the death rates (20 and 22 per 100 000 population, respectively) are almost double those for high-income countries. Because many deaths occur in young adults, the loss of potential healthy life is great *(26)*.

Crashes are largely preventable using engineering measures – such as traffic management – vehicle design and equipment such as helmets and seat belts, and road-user measures such as speed limits *(27)*. When used correctly, seat belts reduce the risk of death in a crash by 61%. In Thailand, a motorcycle helmet law cut deaths by 56%, and it has been estimated that lowering average speeds by 5 km per hour would cut deaths by 25% in Western Europe. If countries with high rates of road injury were able to reduce road death rates to the best levels achieved in their regions, global road fatalities would fall by 44%.

Intentional injuries caused 1.6 million deaths in 2004: 51% of these by suicide, 37% by violence between individuals, and 11% in wars and civil conflict. Interpersonal violence was the second leading cause of death in 2004 among men aged 15–44 years, after road traffic accidents. There is a close relationship between violence and poverty; countries with lower per capita income have higher homicide rates, but rates were substantially higher in the low- and middle-income countries of Africa and the Americas than in other regions. Other risk factors for interpersonal violence include alcohol and availability of weapons, particularly firearms.

Collective violence, including war, caused an estimated 184 000 deaths in 2004 – more than half of these in the WHO Eastern Mediterranean Region, and half of the remainder in Africa *(2)*. Risk factors for collective violence include the wide availability of small arms, political and socioeconomic inequalities, and abuse of human rights.

3 Joint effects of risk factors

3.1 Joint contribution of risk factors to specific diseases

Many diseases are caused by more than one risk factor, and thus may be prevented by reducing any of the risk factors responsible for them. As a result, the sum of the mortality or burden of disease attributable to each of the risk factors separately is often more than the combined mortality and burden of disease attributable to the groups of these risk factors.

For example, of all infectious and parasitic child deaths (including those caused by acute lower respiratory infections), 34% can be attributed to underweight; 26% to unsafe water, hygiene and sanitation; and 15% to smoke from indoor use of solid fuels. The joint effect of all three of these risk factors is, however, 46%. Similarly, 45% of cardiovascular deaths among those older than 30 years can be attributed to raised blood pressure, 16% to raised cholesterol and 13% to raised blood glucose, yet the estimated combined effect of these three risks is about 48% of cardiovascular diseases.

Risks for child health

In 2004, 10.4 million children under 5 years of age died: 45% in the WHO African Region and 30% in the South-East Asia Region. The leading causes of death among children under 5 years of age are acute respiratory infections and diarrhoeal diseases, which are also the leading overall causes of loss of healthy life years. Child underweight is the leading individual risk for child deaths and loss of healthy life years, causing 21% of deaths and DALYs. Child underweight, together with micronutrient deficiencies and suboptimal breastfeeding, accounted for 35% of child deaths and 32% of loss of healthy life years worldwide. Unsafe water, sanitation and hygiene, together with indoor smoke from solid fuels, cause 23% of child deaths. These environmental risks, together with the nutritional risks and suboptimal breastfeeding, cause 39% of child deaths worldwide.

Risks for cardiovascular disease

The two leading causes of death are cardiovascular – ischaemic heart disease and cerebrovascular disease; cardiovascular diseases account for nearly 30% of deaths worldwide. Eight risk factors – alcohol use, tobacco use, high blood pressure, high body mass index, high cholesterol, high blood glucose, low fruit and vegetable intake, and physical inactivity – account for 61% of loss of healthy life years from cardiovascular diseases and 61% of cardiovascular deaths. The same risk factors together account for over three quarters of deaths from ischaemic and hypertensive heart disease.

Cardiovascular deaths occur at older ages in high-income countries than in low- and middle-income countries. DALYs account for this difference by giving a higher weight to deaths at younger ages. Among adults over 30 years of age, the rate of DALYs attributed to the eight cardiovascular risk factors is more than twice as high in middle-income European countries than in high-income countries or in the Western Pacific Region, where rates are lowest. In all regions, the leading cause of cardiovascular death is high blood pressure, which causes between 37% of cardiovascular deaths in the South-East Asia Region to 54% of cardiovascular deaths in middle-income European countries. The eight cardiovascular risk factors cause the largest proportion of cardiovascular deaths in middle-income European countries (72%) and the smallest proportion in African countries (51%).

Risks for cancer

Cancer rates are increased by many of the risks considered in this report, and some leading cancers could be substantially reduced by lowering exposure to these risks. Worldwide, 71% of lung cancer deaths are caused by tobacco use (lung cancer is the leading cause of cancer death globally). The combined effects of tobacco use, low fruit and vegetable intake, urban air pollution, and indoor smoke from household use of solid fuels cause 76% of lung cancer deaths. All deaths and unhealthy life years from cervical cancer are caused by human papillomavirus infection from unsafe sex. Nine leading environmental and behavioural risks – high body mass index, low fruit and vegetable intake, physical inactivity, tobacco use, alcohol use, unsafe sex, urban and indoor air pollution, and unsafe health-care injections – are responsible for 35% of cancer deaths.

Cancers are also caused by infections. Worldwide,

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2
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63% of stomach cancer deaths are caused by infection with *Helicobacter pylori*, 73% of liver cancer deaths are caused by infection with viral hepatitis or liver flukes, and 100% of cervical cancer deaths are caused by infection with human papillomavirus. The combined effects of seven infectious agents – blood and liver flukes, human papillomavirus, hepatitis B and C, herpesvirus and *H. pylori* – cause 18% of cancer deaths. Together with the nine environmental and behavioural causes of cancer, these infections explain 45% of cancer deaths worldwide. For specific cancer sites, the proportion is higher: more than three quarters of deaths from mouth and oropharynx cancer, liver cancer, lung cancer and cervical cancer can be explained by infections, and environmental and behavioural exposures.

3.2 Potential health gains from reducing multiple risk factors

Reducing or eliminating the risks described in this report could reduce by three quarters or more the deaths and DALYs caused by leading diseases such as ischaemic heart disease, diabetes, diarrhoea and HIV/AIDS (Figure 12). Nearly one half (44%) of deaths in the world in the year 2004 could be attributed to the 24 risk factors analysed in this report, when joint effects were taken into account (Table 7). One third (33%) of global deaths could be attributed to the leading 10 risk factors (defined by total attributable burden), and more than one quarter to the leading five risk factors (25%). The leading 10 risk factors were responsible for one quarter of the total loss of healthy years of life globally.

The risks considered in this report explain a larger proportion of loss of healthy years of life in Africa and low- and middle-income European countries (40% and 45%) than in other regions, where these risk factors cause about one third of the loss of healthy years of life. This is because of the importance of cardiovascular risk factors, including alcohol, in Europe, and child risks, as well as risks for HIV/AIDS, in Africa.

Had these 24 risks not existed, life expectancy would have been on average almost a decade longer in 2004 for the entire global population (Figure 13). Low and middle income countries have much more to gain than the richest countries: for example, life

Figure 12: Disease burden attributable to 24 global risk factors, by income and WHO region, 2004.

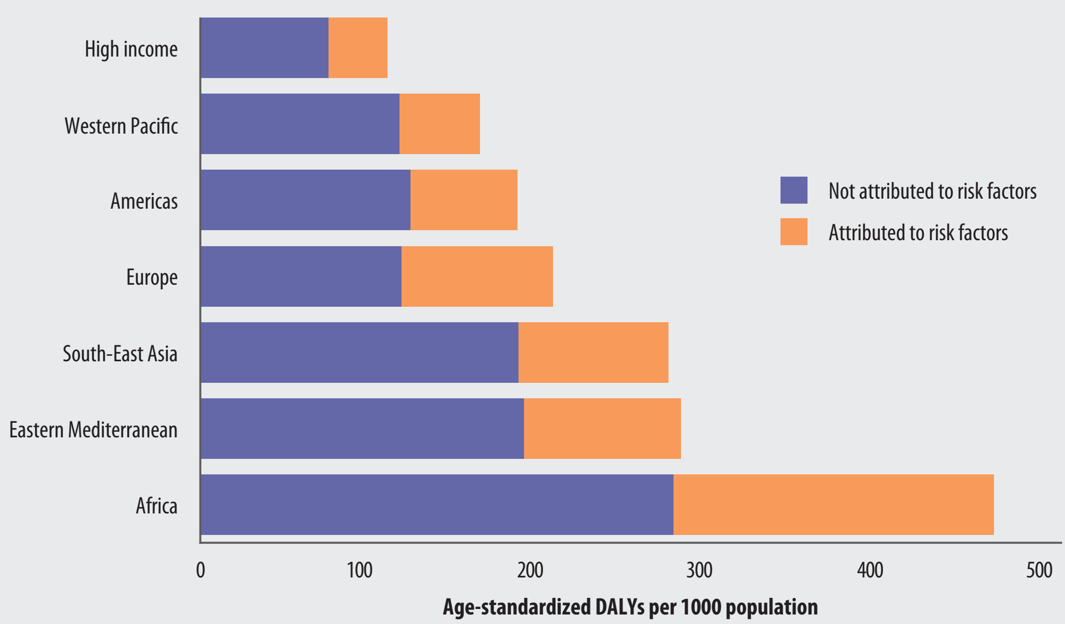


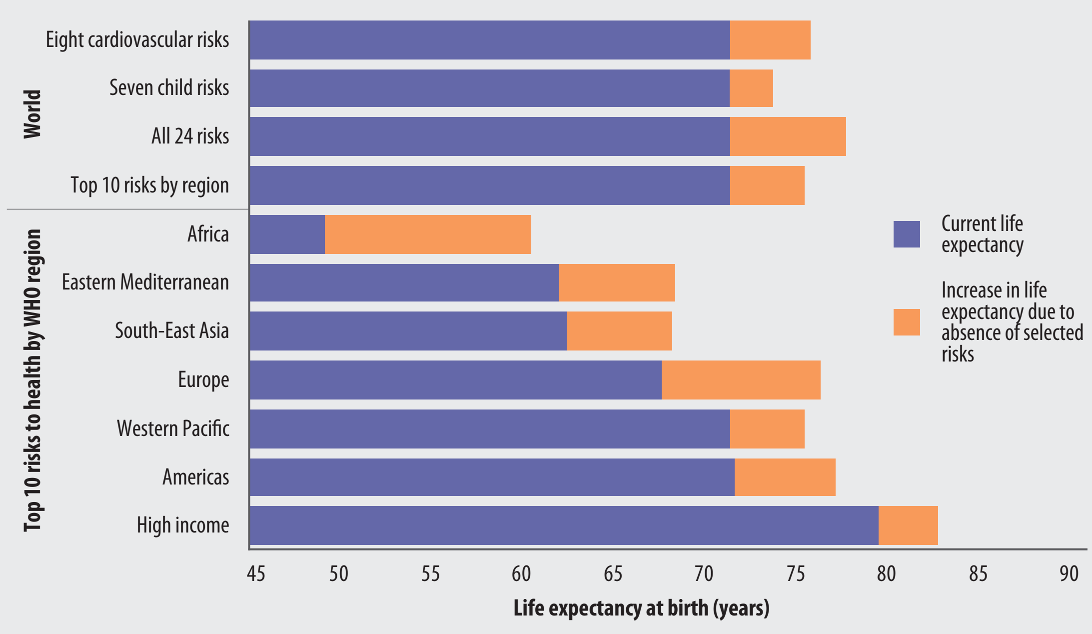
Table 7: Percentage of total disease burden due to 5 and 10 leading risks and all 24 risks in this report, world, 2004

	5 leading risks	10 leading risks	24 risks
Attributable deaths (%)	25	33	44
Attributable DALYs (%)	20	25	35
Attributable life expectancy loss (years)	4.9	6.8	9.3

Table 8: Percentage of total disease burden due to 10 leading risks, by region and income group, 2004

		Region					
	High income	Africa	Americas	Eastern Mediter-ranean	Europe	South-East Asia	Western Pacific
Attributable deaths (%)	28	40	34	31	49	29	29
Attributable DALYs (%)	21	34	24	21	34	22	19
Attributable life expectancy loss (years)	3.3	11.3	5.6	6.4	8.8	5.8	4.0

Figure 13: Potential gain in life expectancy in the absence of selected risks to health, world, 2004.



expectancy would have grown by nearly 13 years in the African Region, but by less than 6 years in the high-income countries. The five leading risks alone shortened life expectancy by about 9 years in Africa in 2004.

3.3 Conclusions

It is clear that the world faces some large, widespread and certain risks to health. The five leading risk factors identified in this report are responsible for one quarter of all deaths in the world; all 24 risk factors are responsible for almost one half of all deaths. Although some of these major risk factors (e.g. tobacco use or overweight and obesity) are usually associated with high-income countries, in fact, more than three quarters of the total global burden of diseases they cause already occurs in low- and middle-income countries. Health risks are in transition – and health has become globalized – as patterns of consumption change markedly around the world and populations contain higher proportions of older people, as a result of successes against infectious diseases and decreasing fertility levels.

Developing countries increasingly face a double burden from the risks for communicable diseases and maternal and child outcomes that traditionally affect the poor combined with the risks for noncommunicable conditions. The poorest countries still face a high and concentrated burden from poverty, undernutrition, unsafe sex, unsafe water and sanitation, iron deficiency and indoor smoke from solid fuels. At the same time, dietary risk factors for high blood pressure, cholesterol and obesity, coupled with insufficient physical activity, are responsible for an increasing proportion of the total disease burden. Had the risks considered in this report not existed, life expectancy would have been on average almost a decade longer in 2004 for the entire global population, with greater increases in the low-income countries than in the high-income countries.

The results from the report provide powerful input for policy actions when combined with information about interventions, their costs and their efficacy. Although risk exposure estimates are based on less-than-perfect data, they are often conservative because, as health improves, gains can multiply. For example, reducing the burden of disease in the poor may raise income levels, which, in turn, will further help to reduce health inequalities. Many cost-effective interventions are also known, and prevention strategies can be transferred between similar countries. Much of the necessary scientific and economic information, evidence and research is already available for guiding policy decisions that could significantly improve global health.

Annex A: Data and methods

For *The world health report 2002*, WHO developed a new framework for quantifying deaths and burden of disease caused by risk factors, with an emphasis on improving the comparability of the estimates *(1)*. Different risk factors have very different epidemiological traditions, particularly with regard to defining "hazardous" exposure, the strength of evidence on causality, and the availability of epidemiological research on exposure and outcomes. Moreover, classical risk factor research has treated exposures as dichotomous, with individuals either exposed or not exposed, and with exposure defined according to a threshold value that is often arbitrary. Recent evidence for such continuous exposures as cholesterol, blood pressure and body mass index suggests that such arbitrarily defined thresholds are inappropriate because hazard functions for these risks change continuously across the entire range of measured exposure levels, with no obvious threshold *(e.g., 28)*.

The risk factor burden was calculated for *The world health report 2002* as the reduction in disease burden that would be expected under the risk factor exposure scenario that minimizes risk *(29, 30)*. Fractions of disease burden attributable to a risk factor were calculated based on a comparison of disease burden observed under the current distribution of exposure by age, sex and region, with that expected if a counterfactual distribution of exposure had applied. To improve comparability across risk factors, a counterfactual distribution was defined for each risk factor as the population distribution of exposure that would lead to the lowest levels of disease burden. This counterfactual exposure is assumed to have applied in the reference year and in all previous years.

For this update of global estimates of mortality and burden of disease attributable to 24 global risk factors, the methods developed for *The world health report 2002* were applied, with updated inputs on exposure distributions for 2004 and, in some cases, updated estimates of the magnitude of the hazards associated with specific risk exposures. These revisions are documented below. Two new risk factors were included for the first time in this update: suboptimal breastfeeding and higher-than-optimal blood glucose. Regional-level estimates of mortality and DALYs for specific diseases and injuries for 2004 were from a recent WHO update of global burden of disease estimates *(2)*. For some risk factors – including fruit and vegetable intake, occupation risk factors, child sexual abuse and unsafe health-care injections – revised estimates of exposure distributions were not available, and disease- and injury-specific population attributable fractions (PAFs) calculated for the year 2000 were assumed also to apply in 2004.

A1.1 Estimating population attributable fractions

To calculate the difference in population health under the counterfactual scenario, the PAF is first calculated. PAF is defined as:

$$PAF = \frac{\int_{x=0}^{m} RR(x)P(x)dx - \int_{x=0}^{m} RR(x)P'(x)dx}{\int_{x=0}^{m} RR(x)P(x)dx} \qquad (1)$$

where *RR(x)* = relative risk at each exposure level, *P(x)* = proportion of population at each exposure level, *P′(x)* = counterfactual proportion of population at each exposure level, and *m* = maximum exposure level *(31)*.

For risk factors where the exposure is dichotomous (exposed, not exposed), and the counterfactual scenario is no exposure, equation 1 reduces to equation 2:

$$PAF = P \cdot (RR-1)/[P \cdot (RR-1)+1] \qquad (2)$$

where *P* = prevalence of exposure, and *RR* = relative risk for exposed versus non-exposed.

Once the fraction of a disease (or injury) that is attributed to a risk factor has been established, the attributable mortality or burden is simply the product of the total death or DALY estimates for the disease and the attributable fraction. For most diseases, the same attributable fraction is applied to fatal (YLL) and non-fatal (YLD) burden estimates.

Choice of counterfactual

Analysis using counterfactual exposure distributions requires comparing the current distributions of exposure to risk factors with some alternative distribution. We used the theoretical minimum risk distribution – that is, the distribution of exposure that would yield the lowest population risk – in analyses for this report *(29)*. The theoretical minimum exposure distribution may be zero in some cases because zero exposure reflects minimum risk (e.g. no smoking). For some risk factors, zero exposure is an inappropriate choice because these are physiologically impossible (e.g. body mass index and cholesterol). For these risk factors, the lowest levels observed in specific populations and epidemiological studies were used in choosing the theoretical minimum.

In the case of tobacco, for example, the counterfactual exposure distribution that gives minimum-risk would be that 100% of the population were life-long non-smokers; whereas, for overweight and obesity, it would be a narrow distribution of body mass index centred around an optimal level (e.g. mean 21 (standard deviation 1) kg/m^2), and so on. The theoretical minimum risk exposure distributions for the risk factors quantified here are listed in Table A1.

Joint effects of risk factors

We also calculated the fraction of mortality attributed to the combined effects of these risk factors. Among those people exposed to multiple risk factors, disease-specific deaths may be caused by the simultaneous effects of multiple exposures, and hence can be prevented by reducing exposure to any of the risks. For example, some deaths from ischaemic heart disease may be prevented by reducing blood pressure or by reducing cholesterol. As a result of multicausality, the PAFs for multiple risk factors cannot be combined by simple addition *(32)*. The combined (joint) PAF that avoids double counting the overlap of multiple risk factors is given by equation 3 *(33)*:

$$PAF = 1 - \prod_{i=1}^{n}(1 - PAF_i) \qquad (3)$$

where PAF_i = PAF for individual risk factor i, and n = total number of risk factors that affect the same disease outcome.

Equation 3 is based on three specific assumptions about the correlation of the exposures to the multiple risks and the interactions of their causal effects *(33)*. Firstly, it assumes that the exposure to the risk factors is uncorrelated within a given country. Secondly, it assumes that the level of exposure to one risk factor does not affect the proportional increase in risk caused by another (i.e. no effect modification). Thirdly, it assumes that the effect of one risk factor does not act through another (i.e. no mediated effects). We accounted for instances where these assumptions are violated based on methods published elsewhere *(9, 33)*. For example, we accounted for the increased risk of ischaemic heart disease caused by physical inactivity that acts through increased blood pressure. In previous analyses, neither high blood glucose nor infectious causes of cancer (see page 40) were considered as independent risk factors. It is likely that some proportion of the burden of high body mass index acts through high blood glucose. In analysis of the Framingham Offspring Study cohort, Wilson et al. found that approximately two thirds of the effect of body mass index is mediated through cholesterol, blood pressure and blood glucose; we therefore reduced the burden of body mass index by two thirds before calculating the joint effect of the risk factors *(34)*. We assumed that infectious causes of cancer act independently of the behavioural and environmental causes of cancer considered in this report, with the exception of the risk factors that increase burden by infection, such as the effect of unsafe injections on liver cancer.

A1.2 Risk factors

This section describes the methods used for each of the 24 risk factors included in this report. A summary of the exposure variable, counterfactual exposure levels, disease outcomes, and sources of exposure and hazard estimates is provided in Table A1, and estimated exposure prevalences in Table A2. Tables A3 and A4 provide a summary of the attributable mortality and DALYs for all 24 risk factors for the world, males, females and populations, grouped by country average income per capita.

Childhood and maternal underweight

The prevalence of child underweight was based on analysis of 388 nationally representative studies for

139 countries from the WHO Global Database on Child Growth and Malnutrition.[1] These were used to estimate prevalence of child underweight (for z-score categories of body mass index <–3, –3 to <–2, –2 to <–1) for each country in the world according to the new WHO Child Growth Standards *(35-38)*. The prevalences of maternal underweight (body mass index < 20 kg/m^2) were derived from country-level estimates of means and standard deviations for body mass index from the WHO *Surveillance of chronic disease risk factors* report *(SuRF report 2) (39)*.

Disease-specific relative risks for mortality associated with childhood underweight were estimated by Black et al. *(9)* using eight data sets from low-income countries (Bangladesh, Ghana, Guinea-Bissau, India, Nepal, the Philippines, Pakistan and Senegal). The estimated risks were then adjusted for confounding due to socioeconomic factors that affect mortality through other pathways, such as non-nutritional determinants of infection or access to better clinical care. The same relative risks as for mortality were used for diarrhoea, pneumonia and malaria morbidity.

The CRA 2000 study *(40)* also estimated the proportion of neonatal mortality and morbidity due to low birth weight that was attributable to maternal underweight. Black et al. *(9)* estimated the attributable fractions for birth asphyxia/trauma and neonatal infections attributable to intrauterine growth restriction (IUGR) in babies born at term (i.e. who have completed 37 weeks of gestation). Data from five community-sampled prospective birth cohorts in developing countries were analysed to estimate relative risks of neonatal death due to birth asphyxia and infections (sepsis, pneumonia and diarrhoea). The results presented here include the attributable mortality and burden for neonatal outcomes associated with IUGR due to maternal underweight, and assuming that IUGR deaths were only 0.4% of total neonatal deaths *(2)*.

Iron deficiency

Anaemia prevalence distributions were updated for 2004 using data collected for the Vitamin and Mineral Nutrition Information System[2] by the WHO Department of Nutrition for Health and Development for preschool-aged children, pregnant women and non-pregnant women. These estimates were based on the most recent national and subnational surveys measuring blood haemoglobin concentration carried out in the years 1993–2005 *(11)*. According to these estimates, 42% of pregnant women and 47% of preschool children worldwide have anaemia. Following previous global burden of disease estimates, the 2004 GBD report assumed that 60% of anaemia was due to iron deficiency in non-malaria areas and 50% in malaria areas *(2)*.

Deaths and DALYs estimated for the global burden of disease cause category “iron-deficiency anaemia” were attributed 100% to iron deficiency. These DALYs include the direct impact of anaemia on functioning at all ages in both sexes, and the impact on cognitive functioning in children *(2)*. In addition, anaemia in pregnancy is considered a risk factor for maternal mortality. The attributable mortality and disease burden for maternal causes was estimated using the methods and assumptions of Stoltzfus et al. *(41)*. Following Black et al., we did not consider the effect of iron deficiency on perinatal mortality *(9)*. Country-specific distributions for anaemia in 2004, and for the theoretical minimum counterfactual distributions, were updated using anaemia prevalence estimates for pregnant women for 2004 *(11)*.

Vitamin A deficiency

Exposure data and hazard estimates were updated using recently published updates for country and regional prevalence of vitamin A deficiency in children and new estimates of the relative risks for cause-specific mortality *(9)*. Exposures were estimated based on the percentage of children under 5 years of age living in areas classified as vitamin A deficient, based on population survey data for low plasma or tissue retinol levels and xerophthalmia, together with information on coverage of vitamin A supplementation programmes.

Blindness from corneal scarring directly due to xerophthalmia is 100% attributed to vitamin A deficiency. The relative risks for mortality due to diarrhoea and measles as a result of vitamin A deficiency

[1] http://www.who.int/nutgrowthdb/
[2] http://www.who.int/vmnis

were derived from a meta-analysis of nine randomized placebo-controlled trials in children aged 6–59 months showing risk reduction with supplementation *(42)*. The findings from three trials of vitamin A supplementation of newborns were used to estimate relative risks for mortality from neonatal infections and from prematurity *(9)*. These trials, which were conducted in Bangladesh, India and Indonesia, showed reductions in mortality during infancy ranging from 15% to 64%. However, three other trials conducted in Guinea-Bissau, Nepal and Zimbabwe have shown no effect of this intervention on infant mortality.

Pooled results from trials did not show a consistent association of vitamin A deficiency with malaria mortality or morbidity, or an increased risk of maternal mortality *(9)*. These disease endpoints were therefore not included in the analysis for vitamin A deficiency.

Zinc deficiency

Exposure data and hazard estimates were updated using recently published estimates of country and regional prevalence of zinc deficiency in children under 5 years of age, and new estimates of the relative risks for mortality and morbidity due to diarrhoeal diseases, lower respiratory tract infections and malaria *(9)*. The child population's risk of zinc deficiency was estimated for the 178 countries for which food availability information was available from the Food and Agriculture Organization of the United Nations. The latest prevalence of stunting for 131 countries was obtained from the WHO Global Database on Child Growth and Malnutrition *(35-38)*. Data from other sources were used to classify 35 additional countries by prevalence of stunting. The total child population of each country was classified as zinc deficient or not zinc deficient based on the combination of the prevalence of stunting and adequacy of zinc in the food supply. Relative risks for diarrhoea, pneumonia and malaria incidence in children due to zinc deficiency were estimated from a meta-analysis of placebo-controlled trials *(9)*.

Suboptimal breastfeeding

We based our analysis on the methods of Black et al., who recently published an analysis of the global burden of suboptimal breastfeeding *(9)*. Black et al. provide data for breastfeeding levels for 30 developing countries and 12 regions, mainly covering the developing world. Data were limited for developed countries; therefore, prevalence estimates from the United States of America (USA) and Australia were used *(43, 44)*. The breastfeeding prevalence for the USA was applied to all high-income countries that were not covered by Black et al. and were not located in the WHO Western Pacific Region. Breastfeeding prevalence from Australia was applied to all Western Pacific countries not covered by Black et al. In this analysis, relative risks for diarrhoeal diseases, lower respiratory tract infections and infectious perinatal conditions were calculated for children aged under 24 months. Relative risks were calculated for these conditions across four exposure categories (exclusive, predominant, partial and non-breastfeeding) in the 0–5 months age group and two (any and non-breastfeeding) in the 6–23 month age group. Relative risks and prevalence data for perinatal infections were estimated only for the 0–1 month age group for all countries. Optimal breastfeeding is defined as exclusive breastfeeding for the first 6 months of life and continued breastfeeding through the second year of life *(9)*.

High blood pressure

WHO's *SuRF report 2* presents estimates of mean population blood pressure for 192 Member States, as well as standard deviations *(39)*. Estimates were made using available survey data standardized for age groups and reporting year with regression analysis. Estimates for 2004 were used in this analysis. Relative risks were from the Prospective Studies Collaboration: a meta-analysis of 61 studies *(45)*. Following the CRA 2000 study, we used a counterfactual population systolic blood pressure distribution with a mean of 115 mmHg and a standard deviation of 6 mmHg.

High cholesterol

Mean total serum cholesterol and standard deviation for 2004 were from WHO's *SuRF report 2 (39)*. Relative risks were from the prospective studies collaboration: a meta-analysis of 61 studies *(28)*. We used a counterfactual population serum cholesterol distribution with a mean of 3.8 mmol/l and a standard deviation of 0.5 mmol/l.

High body mass index

Mean body mass index and standard deviation for 2004 were from WHO's *SuRF report 2 (39)*. Relative risks for colon, uterine and post-menopausal breast cancer were from a recent meta-analysis of 221 data sets *(46)*. All other relative risks were from the Asia Pacific Cohort Studies collaboration: a meta-analysis of 33 cohorts *(47, 48)*. We used a counterfactual population body mass index distribution with a mean of 21 kg/m^2 and a standard deviation of 1 kg/m^2.

Low fruit and vegetable intake

We used the estimated regional mean and standard deviation of fruit and vegetable consumption for 2000 from Lock et al. *(49)*. Following Danaei et al. *(50)*, we used relative risks from several recent meta-analyses. Relative risks for ischaemic heart disease were from Dauchet et al. *(51)*, for ischaemic stroke from Dauchet et al. *(52)*, for oesophageal cancer from Boeing et al. *(53)*, and for lung, stomach, colon and rectum cancers from Lock et al. *(49)*. We also used the theoretical minimum risk distribution of fruit and vegetable consumption hypothesized by Lock et al. (fruit and vegetable consumption: mean 600 g/day, standard deviation 50 g/day) as the counterfactual.

Physical inactivity

The CRA 2000 study categorized physical activity into three levels – inactive, insufficiently active and sufficiently active – with the counterfactual exposure distribution being 100% sufficiently active *(54)*. Recent CRA studies have treated physical inactivity as a four-level categorical variable by subdividing the "sufficiently active" exposure group into those "meeting current recommendations" and "highly active" *(50, 55)*. Although physical activity levels equivalent to 2.5 hours per week of moderate-intensity activity or 1 hour per week of vigorous activity – approximately equivalent to 600 MET (metabolic equivalent; that is, energy expenditure measured in units of resting energy expenditure) minutes per week – are considered an important target for population health benefits, the protective effects are expected to continue at higher levels. For this update, four exposure categories were used: dividing the "sufficiently active" exposure group into "moderately active" and "highly active". The threshold for "highly active" was physical activity levels equivalent to at least 1 hour per week of vigorous activity and a total energy expenditure of 1600 MET minutes per week. The theoretical minimum risk exposure distribution was chosen as the whole population being in the "highly active" category to increase consistency of the counterfactual exposure distribution with those for other risk factors and with the definition of theoretical minimum risk *(50, 55)*.

For this update, we used regional prevalence distributions estimated for the CRA 2000 study, with the "sufficiently active" prevalence split into "moderately" and "highly" active using data from the Global Physical Activity Questionnaire (GPAQ), implemented in 28 countries using the WHO Stepwise approach to chronic disease risk factor surveillance (STEPS) approach *(56)*. Age-specific and sex-specific fractions for the "highly active" as a proportion of the "sufficiently active" were estimated for the CRA 2000 subregions based on the subregional average income per capita in 2004, using the GPAQ data for 28 mainly low- and middle-income countries, together with recent data for the USA *(50)* to fit age-specific and sex-specific linear regressions on the log of gross national income per capita. The regression slopes were quite consistent across age and sex groups. The resulting prevalence distributions are summarized in Table A.2.

Relative risks consistent with the four-category exposure have been developed by Begg et al. *(55)* and Danaei et al. *(50)*; we used the latter estimates because they were based on the 2000 CRA analysis *(54)*, modified to correspond to the new referent category of "highly active". The revised estimates for mortality and DALYs attributable to physical inactivity for 2004 are higher than the 2000 estimates, with most of the increase being due to mortality among the "inactive" and "insufficiently active" groups assessed against the new referent category. Improved estimates of population distributions of physical activity from the GPAQ and other new survey data sources may result in future revisions to these estimates.

High blood glucose

In addition to deaths and burden of disease directly assigned to diabetes under the rules of the

International Classification of Diseases, mortality from cardiovascular diseases is also higher in people with diabetes, and cardiovascular mortality risk increases continuously with blood glucose concentration, from levels well below the threshold levels used in the definition of diabetes *(8)*. Mortality and disease burden attributable to higher-than-optimal blood glucose are included in this report, using the methods and regional blood glucose concentration estimates developed by Danaei et al. *(8)*. Regional exposure distributions were estimated using measurements of fasting plasma glucose (FPG) concentration from 65 population studies in 52 countries. The theoretical minimum (counterfactual) distribution for FPG was based on the lowest observed distribution in younger adults with mean of 4.9 mmol/l and standard deviation of 0.3 mmol/l. In addition to diabetes mellitus with PAF of 100%, PAFs were estimated for ischaemic heart disease and cerebrovascular disease using relative risks derived from the Asia Pacific Cohort Study meta-analysis of 13 cohorts with 200 000 participants from the WHO regions of South-East Asia and the Western Pacific *(57)*.

Unsafe sex

All sexually transmitted diseases are attributed to unsafe sex. The PAFs for HIV/AIDS and hepatitis B and C due to unsafe sex were derived as described by Slaymaker et al. *(58)*. PAFs were updated for 2004 using country and regional estimates of transmission mode proportions for unsafe sex from UNAIDS monitoring reports and other publications *(59-64)*. All cervical cancer is attributed to sexual transmission of human papillomavirus *(65)*.

Lack of contraception

Non-use and use of ineffective methods of contraception increases the risk of maternal morbidity and mortality associated with unwanted and mistimed births and with unsafe abortion. We used the methods developed by Collumbien et al. for the CRA 2000 study *(66)*. Regional exposure data were updated using most recent country-level data on annual average time trends in the prevalence of use of modern and traditional contraceptive methods, and prevalence of non-use of contraception for the period 1997–2007 *(67)*. Relative risks for unsafe abortion and for maternal conditions – such as maternal haemorrhage, maternal sepsis, hypertensive disorders of pregnancy, obstructed labour and other maternal conditions – were from the CRA 2000 study *(66)*.

Smoking and oral tobacco use

Smoking intensity, average age at initiation and average duration vary considerably from setting to setting and by sex. Using the reported prevalence of smoking in a population would thus bias the calculation of the attributable burden. Therefore, following previous CRA analyses, we used the method of Peto et al., who proposed that current incidence of lung cancer can be used as an indicator of past exposure to tobacco smoke *(68)*. We calculated a "smoking impact ratio" by comparing lung cancer mortality rates in each population with lung cancer mortality rates among non-smokers and smokers observed in the American Cancer Society study: a large long-term follow-up study in the United States *(69)*. Chewing tobacco is an important cause of oral and oesophageal cancers in South Asia. For Bangladesh, India and Pakistan, we estimated oral tobacco use using reported tobacco use in the India World Health Survey *(70)*. Because chewing tobacco is rare in other parts of the world, we did not consider its effects beyond South Asia.

Relative risks of smoking from the American Cancer Society study have recently been updated, and age-specific relative risks were modelled by Danaei et al. *(50)*. We used the relative risks for cancers (lung, upper aerodigestive tract, stomach, cancer, pancreas, cervix uteri, bladder, leukaemia, colon and rectum), selected cardiovascular causes of death, chronic obstructive pulmonary disease and other respiratory causes used by Danaei et al., but originally reported elsewhere *(69, 71, 72)*. Danaie et al. only considered the effect of smoking on hypertensive heart disease in their sensitivity analysis, although the effect is consistently observed *(72)*; because of the importance of hypertensive heart disease worldwide, we included this effect in our primary analysis. Relative risks for tuberculosis and for the effect of chewing tobacco were not available from the American Cancer Society cohort; instead, we used relative risks for tuberculosis from Lin et al. *(73)*, and from Rao et al. for the effect of chewing tobacco on upper aerodigestive tract cancers *(74)*.

We compared current tobacco use with an ideal scenario of no tobacco use.

Alcohol

Estimates for direct deaths and DALYs due to alcohol dependence and harmful use (alcohol use disorders) in 2004 were revised based on a new review of population studies, published data on alcohol production, trade and sales, and health state valuations collected in the WHO Multi-Country Survey Study *(75)*.

For other health effects, two different dimensions of alcohol consumption have been shown to affect health: average volume of alcohol consumption and patterns of drinking, especially heavy drinking occasions (binge drinking). As in the previous CRA 2000 study *(76)*, patterns of drinking were used in addition to average volume in the modelling of impact on injury and ischaemic heart disease. Exposure distributions for alcohol consumption categories and drinking patterns were estimated for 2004 using large representative surveys in the 2000s and national estimates of average recorded and unrecorded adult per capita alcohol consumption for 2003, using methods described by Rehm et al. *(77)*.

The identified alcohol-attributable disease and injury conditions and relative risk estimates were the same as in the CRA 2000 *(76)* with one addition: colon and rectum cancer was added, based on the 2007 evaluation of the International Agency for Research on Cancer on the carcinogenicity of alcohol beverages *(77, 78)*.

Illicit drugs

The global burden of disease cause category "drug use disorders" includes heroin and cocaine dependence and problem use, and is therefore 100% attributed to illicit drugs. The PAFs for HIV/AIDS and hepatitis B and C due to illicit drugs were derived as described by Degenhardt et al. *(79)*. For HIV/AIDS, PAFs were updated for 2004 using country and regional estimates of transmission-mode proportions for injecting drug use; these estimates were from UNAIDS monitoring reports and other publications *(59-64)*. For the GBD 2004, estimates of deaths due to drug use disorders for 2002 were updated using regional trends in the use of illicit opiate drugs reported by the United Nations Office on Drugs and Crime *(18)*.

Unsafe water, sanitation and hygiene

Unsafe water, sanitation and hygiene is divided into six exposure categories, ranging from the ideal scenario of improved drinking water and sanitation with high population coverage, to the worst scenario of having neither. "Improved water" refers to the coverage by an improved drinking-water source, and "improved sanitation" refers to coverage by an improved sanitation facility. Improved drinking-water sources include: piped water into dwelling, plot or yard; public tap or standpipe; tubewell or borehole; protected dug well; protected spring; and rainwater collection. Improved sanitation facilities include: flush or pour-flush to piped sewer system, septic tank or pit latrine; ventilated improved pit latrine; pit latrine with slab; and composting toilet. Exposure estimates came from the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation; coverage data were for the year 2004 *(19)*. Relatives risks for diarrhoea were from the CRA 2000 study *(80)*.

Urban outdoor air pollution

Many air pollutants are harmful to human health; following the CRA 2000 study, we only considered the effects of particulate matter on health *(81)*. Exposure to particulate matter increases the risk of cardiopulmonary conditions, respiratory infections and lung cancer. The mean concentration of particulate matter with an aerodynamic diameter of 10 µm or less (PM_{10}) was estimated for all cities with a population over 100 000 using both modelled and measured data for the years 2002–2004, including country data reported to WHO *(81, 82)*. The proportion of PM_{10} that has an aerodynamic diameter of 2.5 µm or fewer ($PM_{2.5}$) was estimated for three regions: low-mortality European countries (0.73), developed countries (0.65) and developing countries (0.5) *(20)*. The relative risks for respiratory infections and lung cancer were from the CRA 2000 study *(81)*. The relative risks for cardiopulmonary mortality from the CRA 2000 study were used, but a revised exposure–response function (as recommended by Ostro et al. *(20)*) was used.

Indoor smoke from solid fuels

Indoor smoke exposure is measured by estimating the proportion of the population using solid fuels or coal. A ventilation factor is also calculated for countries to take into account exposure to smoke. These estimates were updated by WHO in 2007 using data from health surveys, including the World Health Survey *(83)*. The relative risks for lower respiratory infections, chronic obstructive pulmonary disease and lung cancer come from the CRA 2000 study *(84)*.

Lead exposure

New WHO estimates of blood lead levels, based on a systematic review, were used for this analysis. These estimates reflect the decline in mean blood lead levels since 2000, due to the continuing phase-out of leaded fuels. In addition to considering the effect of lead exposure during development on mild mental retardation, we considered the effect of adult exposure to lead on blood pressure, as was done in the CRA 2000 methods *(85)*, updated with the relative risks for increased blood pressure used in this analysis *(45)*. Following the CRA 2000 study, the effect of acute lead poisoning was not considered in this study. The ideal exposure level for lead is less than 1 μg/dl, however, effects are only estimated to 5 μg/dl to be consistent with available epidemiological evidence.

Climate change

The CRA 2000 study compared observed and projected climate conditions (based on several climate change scenarios) with a counterfactual situation, represented by average climate conditions during 1961–1990, when the effect of carbon emissions on climate was thought to be minimal *(86)*. We estimated the climate conditions for 2004 using projections from the original analysis. The projected climate conditions were linked to health outcomes, including malaria incidence, diarrhoea incidence, malnutrition (via the effects on yields of agricultural crops) and flooding, as described in the CRA 2000 study. Although McMichael et al. *(86)* quantified the effect of increased average temperatures on the balance of cardiovascular mortality in cold and hot temperatures, it is not known whether these deaths were brought forward or delayed by years or only a few weeks. To be consistent with analyses for other risk factors, these deaths were not included in the total deaths presented in summary tables and figures.

Occupational exposures and hazards

The CRA 2000 study included estimates of the disease and injury burden produced by selected occupational risk factors: occupational carcinogens, airborne particulates, noise, ergonomic stressors and risk factors for injuries *(87)*. The disease burden for mesothelioma attributable to asbestos exposure, and for asbestosis, silicosis and pneumoconiosis attributable to occupational exposures, were discussed by Concha-Barientos et al. *(87)*, but not included in the overall attributable mortality and disease burden estimates for occupational exposures and hazards.

PAFs from the CRA 2000 study *(87)* were assumed to apply for 2004 for the five selected occupational risks. In addition, asbestos-caused mesothelioma was also included in the 2004 estimates for occupational carcinogens: PAFs were from Driscoll et al. *(88)*. Asbestosis, silicosis and pneumoconiosis due to occupational exposures were included in the 2004 estimates for airborne particulates: PAFs were from Driscoll et al. *(89)*.

Unsafe health-care injections

Hauri et al. *(90, 91)* estimated the burden of contaminated injections in health-care settings for the year 2000. Globally, they estimated that 5% of HIV infections, 32% of hepatitis B infections and 40% of hepatitis C infections were due to inadequately sterilized injection equipment used in health-care settings. Their analysis for HIV transmission assumed an average transmission probability per contaminated injection of 1.2%, and an average of 0.3% for all needlestick injury plus 2.1% for deep needlestick injury. A more recent meta-analysis by Baggaley et al. *(92)* estimated a range of 0.24–0.65% with a point estimate of 0.45%, which we used here. This is consistent with another recent review *(93)* and an analysis of observed HIV transmission in a rural population in Uganda *(94)*.

Attributable fractions for HIV due to unsafe health-care injections were further adjusted to take account of the recent downwards revisions for HIV incidence, prevalence and mortality in many regions *(63)*. Data for India from the National AIDS Control Organisation AIDS case reporting system for 2007 gave a transmission distribution of sexual (87.4%), mother to child (4.7%), unsafe blood products (1.7%), infected needles and syringes (1.8%), and unspecified and other (4.1%) *(95)*. Making a conservative assumption that 25% of the unspecified and other transmission is from unsafe medical injections, we have assumed that the fraction of HIV incidence due to unsafe medical injections in India is 3.0%, with an uncertainty range of 1.8% to 5%.

Hauri et al. applied the same age-specific PAFs for HIV incidence and mortality *(90, 91)*. However, recent evidence suggests that incident HIV cases due to unsafe injections in the age range 0–4 years will survive at least 5 years *(96, 97)*, so PAFs for HIV/AIDS mortality have been set to zero. Mortality PAFs for ages 5–14 years were also recalculated using the incidence PAF for 0–4 years, together with estimates of the proportion of infected people who die before age 15 years.

With these revisions, the global proportion of HIV deaths attributable to unsafe medical injections was reduced to 1.3% in 2004. Use of the upper and lower bounds for the HIV PAF for India give a range of 0.9% to 1.8% for this proportion. The revised PAF for African countries with high HIV prevalence was 1.5%, which is reasonably consistent with recent estimates for Kenya and Uganda *(98, 99)*.

Child sexual abuse

The original WHO CRA study *(25)* produced estimates of the burden of disease attributable to child sexual abuse. We used those estimates for relative risks and the prevalence of child sexual abuse (based on epidemiological studies) and assumed no trend in prevalence of child sexual abuse between 2000 and 2004.

Infections and cancers

In our analysis of the primary risks for cancer, we also calculated the proportion of cancers caused by chronic infections based on prior publications *(100, 101)*. Parkin *(100)* estimated the proportion of bladder cancer caused by blood flukes; cervical cancer caused by human papillomavirus; mouth and oropharynx cancers and lymphoma caused by herpesvirus; and stomach cancer caused by *H. pylori* infection. Perz et al. *(101)* calculated the fraction of liver cancer attributed to hepatitis B and C. We applied the attributable fractions calculated by Parkin and Perz et al. to the GBD 2004 estimates of cancer incidence and mortality to estimate the contribution of infections to the cancer burden worldwide.

Table A1: Definitions, theoretical minima, disease outcomes and data sources for the selected global risk factors

Risk factor	Exposure variable	Theoretical minimum	Outcomes[a]	Exposure estimates	Hazard estimates
Childhood and maternal undernutrition					
Underweight	Children < –1 SD weight-for-age compared with the new WHO standards in 1 SD increments *(37, 38)*; maternal body mass index <20 kg/m^2	Same proportion of children below –1 SD weight-for-age as the international reference group; all women of childbearing age with body mass index ≥20 kg/m^2	Mortality and acute morbidity from diarrhoeal diseases, malaria, measles, pneumonia and selected other infectious diseases and protein-energy malnutrition for children <5; perinatal conditions from maternal underweight	Updated estimates of childhood underweight prevalence in 2005 according to new WHO standards *(35-38)*. Updated estimates of maternal underweight for WHO Member States *(39)*	Revised relative risks for child underweight and IUGR outcomes *(9)*
Iron deficiency	Haemoglobin concentrations estimated from prevalence of anaemia	Haemoglobin distributions that halve anaemia prevalence in malarial regions and reduce it by 60% in non-malarial regions, estimated to occur if all iron deficiency were eliminated[b]	Anaemia and its sequelae (including cognitive impairment), maternal mortality	Updated estimates for WHO Member States *(11)*	Systematic review and meta-analysis of cohort studies *(41)*
Vitamin A deficiency	Prevalence of vitamin A deficiency, estimated as low serum retinol concentrations (<0.70 µmol/l) among children aged 0–4 years	No vitamin A deficiency	Mortality due to diarrhoeal diseases, measles, prematurity and low birth weight, and neonatal infections (children <5), morbidity due to vitamin A deficiency and its sequelae (all age groups)	Updated estimates of the prevalence of vitamin A deficiency in children <5 for 2004 *(9)*	From Rice et al. *(42)* for 6–59 months, new relative risk estimates for 0–5 months *(9)*
Zinc deficiency	Less than the USA recommended dietary allowances for zinc	No zinc deficiency	Diarrhoeal diseases, pneumonia, malaria	Updated estimates of the prevalence of zinc deficiency in children <5 for 2004 *(9)*	New relative risk estimates from intervention trials *(9)*
Suboptimal breastfeeding	Prevalence of suboptimal breast-feeding (exclusive, predominant, partial, non-breastfeeding)	100% exclusive breastfeeding from 0–5 months and any breastfeeding from 6–23 months	Diarrhoeal diseases, lower respiratory infections, other causes arising in perinatal period (infectious disease component only)	New estimates of prevalence of suboptimal breastfeeding from recent national survey data *(9, 43, 44)*	New relative risk estimates from a random effects meta-analysis of 7 studies, including a multicentre study in Ghana, India and Peru *(9)*
Other nutrition-related risk factors and physical activity					
High blood pressure	Usual level of systolic blood pressure	Mean of 115 mmHg and SD of 6 mmHg	IHD, stroke, hypertensive disease and other cardiovascular diseases	Updated WHO estimates for Member States *(39)*	Meta-analysis of 61 cohort studies with 1 million North American and European participants *(45)*

(Table A1 continued)

Risk factor	Exposure variable	Theoretical minimum	Outcomes[a]	Exposure estimates	Hazard estimates
High cholesterol	Usual level of total blood cholesterol	Mean of 3.8 mmol/l and standard deviation of 0.6 mmol/l	IHD, ischaemic stroke	Updated WHO estimates for Member States *(39)*	Meta-analysis of 61 cohorts with 900 000 participants from Europe and North America *(28)*
Overweight and obesity (high BMI)	BMI (height (m) divided by weight (kg) squared)	Mean of 21 kg/m^2 and standard deviation of 1 kg/m^2	IHD, ischaemic stroke, hypertensive disease, diabetes, osteoarthritis, colon and uterine cancers, post-menopausal breast cancer	Updated WHO estimates for Member States *(39)*	APCS meta-analysis for cardiovascular and metabolic outcomes *(47)* and new meta-analysis of 221 data sets for cancers *(46)*
High blood glucose	Fasting plasma glucose (FPG) concentration	Mean of 4.9 mmol/l and standard deviation of 0.3 mmol/l	Diabetes mellitus, IHD, cerebrovascular disease	Regional estimates of FPG distribution for people aged 30 years and over *(8)*	APCS meta-analysis of 13 cohorts with 200 000 participants from the Asia-Pacific region *(57)*
Low fruit and vegetable consumption	Fruit and vegetable intake per day	600g (SD 50 g) intake per day for adults	IHD, stroke, colon and rectum cancers, gastric cancer, lung cancer, oesophageal cancer	Systematic review of food consumption surveys and food availability data *(49)*	Systematic review and meta-analyses of published cohort studies *(49, 51-53)*
Physical inactivity	Four categories of inactive, low, medium, and high activity levels *(50, 55)*. Activity in discretionary-time, work and transport considered	High activity level: minimum 3 days per week of vigorous intensity activity (minimum 1500 MET-minutes/week), or 7 days per week of any intensity activity (minimum 3000 MET-minutes/week)	IHD, breast cancer, colon cancer, diabetes mellitus	Prevalence estimates for three categories of physical inactivity from Bull et al. *(54)*. Sufficiently active category split into moderate and highly active using data for 28 countries *(50, 56)*.	Systematic review of published cohort studies *(50, 54)*
Sexual and reproductive health					
Unsafe sex	Sex with an infected partner without any measures to prevent infection	No unsafe sex	HIV/AIDS, sexually transmitted infections and cervical cancer	PAF = 1 (STDs excluding HIV/AIDS, cervical cancer); HIV/AIDS proportions from UNAIDS Reference Group estimates *(58)*, updated using information from UNAIDS Monitoring Reports and other sources *(59-64)*	
Lack of contraception	Prevalence of traditional methods or non-use of contraception	Use of modern contraceptives for all women who want to space or limit future pregnancies	Maternal mortality and morbidity	Data from *World contraceptive use 2007 (67)*	From CRA 2000 study *(66)*

(Table A1 continued)

Risk factor	Exposure variable	Theoretical minimum	Outcomes[a]	Exposure estimates	Hazard estimates
Addictive substances					
Tobacco	Current levels of smoking impact ratio (indirect indicator of accumulated smoking risk based on excess lung cancer mortality); oral tobacco use prevalence	No tobacco use	Lung, upper aerodigestive, stomach, liver, pancreas, cervix, bladder, colon, rectum and kidney cancers, myeloid leukaemia, COPD, other respiratory diseases, tuberculosis, all vascular diseases, diabetes	Updated smoking impact ratios calculated from GBD 2004 lung cancer mortality estimates *(2)*; oral tobacco prevalence for South Asia from WHS-India *(70)*	Relative risks for most causes from the ACS cohort *(69, 71, 72)*, as used by Danaie et al. *(50)*; from meta-analyses for tuberculosis *(73)* and for mouth and oropharynx cancers from chewing tobacco *(74)*
Alcohol	Current alcohol consumption volumes and patterns	No alcohol use	IHD, stroke, hypertensive disease, diabetes, liver cancer, mouth and oropharynx cancer, breast cancer, oesophagus cancer, colon and rectum cancers, other cancers, liver cirrhosis, epilepsy, alcohol use disorders, depression, intentional and unintentional injuries	Updated estimates of alcohol consumption for WHO Member States *(75, 77)*.	Relative risks for colon and rectum cancer added *(78)*; other relative risks from Rehm et al. *(76)*
Illicit drugs	Use of amphetamine, cocaine, heroin or other opioids and intravenous drug use	No illicit drug use	HIV/AIDS, overdose, drug use disorder, suicide, and trauma	Revised based on trends in illicit drug use reported by UNODC *(18)*	PAFs from Degenhardt et al. *(79)*; HIV/AIDS PAFs updated using information from UNAIDS Monitoring Reports and other sources *(59-64)*
Environmental risks					
Indoor smoke from solid fuels	Use of solid fuel or coal house-hold use taking into account a ventilation factor	No solid fuel or coal use	Lower respiratory infections, lung cancer, COPD	Updated estimates for WHO Member States *(83)*	Relative risks come from the CRA 2000 study *(84)*
Unsafe water, sanitation and hygiene	Six categories of exposure: • Ideal situation, corresponding to the absence of transmission of diarrhoeal disease through water, sanitation and hygiene • Regulated water supply and partial sewage treatment • Improved water and basic sanitation • Basic sanitation only • Improved water only • No improved supply or basic sanitation	Absence of transmission of diarrhoeal disease through water and sanitation	Diarrhoeal diseases	Updated estimates for WHO Member States *(19)*	Relative risks come from the CRA 2000 study *(80)*

(Table A1 continued)

Risk factor	Exposure variable	Theoretical minimum	Outcomes[a]	Exposure estimates	Hazard estimates
Urban outdoor air pollution	Annual mean fine particulate matter with an aerodynamic diameter greater than 2.5 µm ($PM_{2.5}$) and 10 µm (PM_{10})	Mean concentration of 7.5 µg/m^3 for $PM_{2.5}$ and 15 µg/m^3 for PM_{10}	Respiratory infections, lung cancers, selected cardiopulmonary diseases	Updated estimates for WHO Member States *(81, 82)*	Relative risks come from the CRA 2000 study *(81)*
Lead exposure	Mean and standard deviation of blood lead level	Blood lead below 1 µg/dl[c]	Mild mental retardation, raised blood pressure (which increases the risk of IHD), stroke, hypertensive disease and other cardiovascular diseases	Updated WHO estimates for Member States	Relative risks for mild mental retardation and raised blood pressure from the CRA 2000 study *(85)*; relative risks for the effect of blood pressure on cardiovascular outcomes from the prospective cohorts study *(45)*
Global climate change	Climate scenarios based on actual and counterfactual carbon emissions and concentrations	Average of 1961–1990 climate conditions	Diarrhoea, flood injury, malaria, undernutrition and associated disease outcomes	Climate change that resulted from unmitigated carbon emissions, as projected to 2004 in the 2000 CRA study *(86)*	Relative risks derived from observed relationships between climate and health, from CRA 2000 study *(86)*
Occupational risks					
Occupational risk factors for injuries	Current proportions of workers exposed to injury risk factors	Exposure corresponding to lowest rate of work-related fatalities observed: 1 per million per year for 16- to 17-year-olds employed as service workers in the USA	Unintentional injuries	PAFs estimated for CRA 2000 assumed to hold for 2004 *(87)*	
Occupational carcinogens	Proportions of workers exposed to background, low, and high levels of workplace carcinogens	No work-related exposure above background to chemical or physical agents that cause cancer	Leukaemia, lung cancer, mesothelioma	PAFs estimated for CRA 2000 assumed to hold for 2004 *(87)*; PAFs for mesothelioma are from Driscoll et al. *(88)*	
Occupational airborne particulates	Proportions of workers with background, low and high levels of exposure	No work-related exposure above background	COPD and asthma, pneumoconiosis, silicosis and asbestosis	PAFs estimated for CRA 2000 assumed to hold for 2004 *(87)*; PAFs for asbestosis, silicosis and pneumoconioses are from Driscoll et al. *(89)*	
Occupational ergonomic stressors	High, moderate, and low exposure based on occupational categories	Physical workload at the level of managers and professionals (low)	Lower back pain	PAFs estimated for CRA 2000 assumed to hold for 2004 *(87)*	

(Table A1 continued)

Risk factor	Exposure variable	Theoretical minimum	Outcomes[a]	Exposure estimates	Hazard estimates
Occupational noise	High and moderate exposure categories (>90 dBA and 85–90 dBA)	Less than 85 dBA on average over 8 working hours	Hearing loss	PAFs estimated for CRA 2000 assumed to hold for 2004 *(87)*	
Other selected risks					
Unsafe health-care injections	Exposure to at least one contaminated injection	No contaminated injections	Acute infection with HBV, HCV and HIV, cirrhosis and liver cancer	Previous PAFs for HIV *(90)* adjusted to take into account a recent meta-analysis of the transmission probability for HIV through reuse of a contaminated needle *(92)*, revised estimates for HIV incidence and prevalence *(63)* and recent data on transmission modes for HIV infection in India *(95)*. Previous PAFs for hepatitis B and C, cirrhosis and liver cancer assumed to apply for 2004.	
Childhood sexual abuse	Prevalence of non-contact abuse, contact abuse and intercourse	No abuse	Depression, panic disorder, alcohol abuse/ dependence, drug abuse/dependence, post-traumatic stress disorder and suicide in adulthood	Prevalences estimated by Andrews et al. for year 2000 assumed to apply for 2004 *(25)*	Systematic review and meta-analysis of published studies *(25)*

ACS, American Cancer Society; AIDS, acquired immunodeficiency syndrome; BMI, body mass index; COPD, chronic obstructive pulmonary disease; CRA, comparative risk assessment; dBA, A-weighted decibels (the noise power calculated in dB); GBD, global burden of disease; HIV, human immunodeficiency virus; HBV, hepatitis B virus; HCV, hepatitis C virus; IHD, ischaemic heart disease; IUGR, intrauterine growth restriction; MET, metabolic equivalent; PAF, population attributable fraction; PM, particulate matter; SD, standard deviation; STD, sexually transmitted disease; UNAIDS, Joint United Nations Programme on HIV/AIDS; UNODC, United Nations Office on Drugs and Crime; USA, United States of America; WHO, World Health Organization; WHS, World Health Survey.

[a] Outcomes likely to be causal but not quantified due to lack of sufficient evidence on prevalence and/or hazard size are not listed here.
[b] The theoretical minimum haemoglobin levels vary across regions and age-sex groups (from 11.66 g/dl in children under 5 years in South-East Asian Region (SEAR)-D to > 14.5 g/dl in adult males in developed countries) because the other risks for anaemia (e.g. malaria) vary.
[c] Theoretical minimum for lead is the blood lead level expected at background exposure levels. Health effects were quantified for blood lead levels above 5 µg/dl where epidemiological studies have quantified hazards.

Table A2: Summary prevalence of selected risk factors by income group in WHO regions,[a] 2004

Risk factor	Prevalence measure[b]	World			Africa	South-East Asia	The Americas		
		Both sexes	Males	Females	Low and middle income	Low and middle income	Total	High income	Low and middle income
Population (millions)		6 437	3 244	3 193	738	1 672	874	329	545
		(000)	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*
Childhood and maternal undernutrition									
Underweight	Child stunting (%)[c]	29	29	29	43	42	12	2	16
	Child wasting (%)[d]	9	9	9	11	15	2	1	2
Iron deficiency	Prevalence of iron-deficiency anaemia (%)[e]								
	Children aged 0–14 years	26	26	26	34	41	12	2	16
	Adults aged ≥15 years	15	12	18	21	21	6	3	8
	Pregnant women	–	–	41	56	48	24	5	31
Vitamin A deficiency	Children at risk of vitamin A deficiency (%)[f]	64	64	64	93	92	20	0	28
Zinc deficiency	Children living in zinc-deficient areas (%)[g]	89	89	88	100	100	66	1	91
Suboptimal breastfeeding	Not exclusively breastfed to 6 months (%)	69	69	69	78	62	68	61	71
Other nutrition-related risk factors and physical activity									
High blood pressure	Mean systolic pressure (mmHg)[h]	126.5	126.9	126.0	128.2	125.3	125.6	126.3	125.0
	Systolic ≥140 mmHg (%)[h]	23	22	23	27	19	21	21	21
High cholesterol	Mean serum cholesterol (mmol/l)[i]	5.1	5.0	5.1	4.3	5.1	5.3	5.4	5.3
	Cholesterol level ≥6 mmol/l[i]	22	20	23	8	21	28	28	28
High blood glucose	Mean fasting plasma glucose (mmol/l)[j]	5.4	5.4	5.4	5.1	5.6	5.4	5.4	5.3
	Diabetic (fpg >7 mmol/l) (%)[j]	11	11	11	4	17	10	13	9
Overweight and obesity	Mean BMI (kg/m^2)[k]	24.5	24.3	24.6	23.0	22.1	27.9	29.0	27.0
	Overweight and obese (BMI ≥ 25) (%)	42	40	43	30	22	70	76	65
	Obese (BMI ≥ 30) (%)	12	9	15	6	2	33	43	26
Low fruit and vegetable intake	Mean fruit and vegetable intake (g/day)[l]	303	314	293	279	239	244	297	207
	Less than five servings per day[m]	67	64	71	71	80	69	65	71
Physical inactivity	Inactive (%)	17	16	19	11	16	22	21	22
	Insufficiently active (%)	41	42	39	49	38	38	41	36
	Moderately active (%)	17	15	20	14	17	19	20	18
	Highly active (%)	25	28	22	25	28	21	18	24
Addictive substances									
Tobacco use	Current smokers (%)[l]	26	43	10	9	21	24	23	26
	Smoking impact ratio (%)[l]	18	25	10	5	12	25	40	13
Alcohol use	Proportion consuming alcohol (%)[l]	44	55	34	36	12	65	58	69
	≥40 grams alcohol/day (%)[l]	13	22	3	18	5	16	19	14
	Average per capita consumption (grams alcohol per day)[l]	14	21	6	16	4	19	21	18
Sexual and reproductive health									
Unmet contraceptive need	Unmet need (%)[n]	43	0	43	70	39	23	2	34
Environmental risks									
Unsafe water, sanitation, hygiene	Improved water supply (%)[o]	83	83	83	57	84	94	100	91
	Improved sanitation (%)[p]	59	59	60	40	41	86	100	77
Urban outdoor air pollution	Concentration of particles less 10 µm (µg/m^3)	62	62	61	65	92	36	24	47
Indoor smoke from solid fuels	Proportion using biofuel (%)	46	46	45	77	81	11	0	18

Risk factor	Prevalence measure[b]	Eastern Mediterranean			Europe			Western Pacific		
		Total	High income	Low and middle income	Total	High income	Low and middle income	Total	High income	Low and middle income
Population (millions)		520	31	489	883	407	476	1 738	204	1 534
		(000)	(000)	(000)	(000)	(000)	(000)	(000)	(000)	(000)
Childhood and maternal undernutrition										
Underweight	Child stunting (%) [c]	29	16	30	8	2	13	18	4	19
	Child wasting (%) [d]	10	3	11	2	1	3	5	1	6
Iron deficiency	Prevalence of iron-deficiency anaemia (%) [e]									
	Children aged 0–14 years	24	15	24	12	5	17	16	7	17
	Adults aged ≥15 years	13	10	13	8	6	10	15	9	16
	Pregnant women	44	31	44	25	14	32	30	17	32
Vitamin A deficiency	Children at risk of vitamin A deficiency (%) [f]	78	33	81	16	1	27	33	8	35
Zinc deficiency	Children living in zinc-deficient areas (%) [g]	100	99	100	28	3	46	94	28	100
Suboptimal breastfeeding	Not exclusively breastfed to 6 months (%)	72	87	71	66	62	68	71	68	71
Other nutrition-related risk factors and physical activity										
High blood pressure	Mean systolic pressure (mmHg) [h]	126.8	123.8	127.1	133.7	134.0	133.4	123.1	129.2	122.0
	Systolic ≥140 mmHg (%) [h]	23	17	23	36	36	35	19	28	17
High cholesterol	Mean serum cholesterol (mmol/l) [i]	4.8	4.8	4.8	5.5	5.7	5.4	4.9	5.4	4.9
	Cholesterol level ≥6 mmol/l [i]	15	15	15	34	39	29	17	26	16
High blood glucose	Mean fasting plasma glucose (mmol/l) [j]	5.6	5.5	5.6	5.4	5.5	5.3	5.3	5.5	5.3
	Diabetic (fpg >7 mmol/l) (%) [j]	17	15	17	12	14	9	7	14	6
Overweight and obesity	Mean BMI (kg/m^2) [k]	25.2	28.5	25.0	26.9	26.8	27.0	23.4	24.1	23.3
	Overweight and obese (BMI ≥ 25) (%)	48	74	46	65	65	65	31	39	30
	Obese (BMI ≥ 30) (%)	18	37	16	24	23	25	3	7	2
Low fruit and vegetable intake	Mean fruit and vegetable intake (g/day) [l]	350	343	350	376	462	298	343	399	335
	Less than five servings per day [m]	58	59	57	56	42	69	64	52	66
Physical inactivity	Inactive (%)	17	18	17	20	18	22	16	17	16
	Insufficiently active (%)	37	38	37	43	51	35	41	49	40
	Moderately active (%)	18	18	18	18	17	19	17	17	17
	Highly active (%)	27	26	28	20	15	24	26	17	27
Addictive substances										
Tobacco use	Current smokers (%) [l]	18	18	18	33	29	37	32	29	32
	Smoking impact ratio (%) [l]	12	1	13	36	32	40	12	17	11
Alcohol use	Proportion consuming alcohol (%) [l]	6	10	6	74	83	66	58	73	56
	≥40 grams alcohol/day (%) [l]	1	1	1	27	25	28	11	14	11
	Average per capita consumption (grams alcohol per day)[l]	2	2	1	26	27	25	15	19	15
Sexual and reproductive health										
Unmet contraceptive need	Unmet need (%) [n]	52	50	52	20	0	35	53	7	58
Environmental risks										
Unsafe water, sanitation, hygiene	Improved water supply (%) [o]	85	92	85	96	100	92	80	94	78
	Improved sanitation (%) [p]	67	90	65	92	100	86	52	87	47
Urban outdoor air pollution	Concentration of particles less 10 µm ($µg/m^3$)	116	98	118	35	30	39	67	34	76
Indoor smoke from solid fuels	Proportion using biofuel (%)	41	0	43	6	0	11	37	0	42

(Table A2 continued)

Risk factor	Prevalence measure[b]	World			Africa	South-East Asia	The Americas		
		Both sexes	Males	Females	Low and middle income	Low and middle income	Total	High income	Low and middle income
Population (millions)		6 437	3 244	3 193	738	1 672	874	329	545
		(000)	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*
Other selected risks									
Unsafe health-care injections	Proportion receiving injections contaminated with hepatitis B per year (%)	6	6	6	4	9	0	0	0
Child sexual abuse	Proportion of adults with history of abuse (%) [q]	16	10	22	15	26	8	11	6

[a] See Table A5 for a list of Member States by WHO region and income category.

[b] Estimates are for the population most relevant to the risk factor – alcohol, childhood sexual abuse, physical inactivity are for ages ≥15 years; blood pressure, cholesterol, overweight, and fruit and vegetables are for ages ≥30 years; iron, vitamin A, zinc and underweight are for children under 5 years; and lack of contraception is for females 15–44 years. Many risk factors were characterized at multiple levels for the analyses in this report – this table does not include full details of exposure distributions but rather selected informative indicators (eg. % exposed, % exceeding a commonly used threshold, mean level).

[c] Prevalence of stunting here defined as height-for-age more than 2 standard deviations below the WHO reference standard for children aged 0–4 years. Health outcomes were assessed for levels of stunting more than 1 standard deviation below the WHO reference standard.

[d] Prevalence of wasting here defined as weight-for-age more than 2 standard deviations below the WHO reference standard for children aged 0–4 years.

[e] Prevalence of anaemia attributed to iron-deficiency only. Anaemia is defined as blood haemoglobin level <110 g/l in pregnant women, <120 g/l in children and adult women and <130 g/l in adult men. Attributable deaths and DALYs are calculated using the estimated distribution of blood haemoglobin among those who have anaemia.

[f] Prevalences were estimated based on the per cent of children under five years of age living in areas classified as vitamin A deficient based on population survey data for low plasma or tissue retinol levels and xerophthalmia, together with information on coverage of vitamin A supplementation programs *(9)*.

[g] Child populations of countries were classified as at risk of zinc deficiency based on the prevalence of stunting and the adequacy of absorbable zinc in the food supply at the country level *(9)*.

[h] Persons aged ≥30 years.

[i] For persons aged ≥ 30 years. 1 mmol/l = 38.7 mg/dl; 6 mmol/l = 232 mg/dl.

[j] For persons aged ≥30 years. 5.55 mmol/l = 100 mg/dl; 7 mmol/l = 125 mg/dl.

[k] For persons aged ≥30 years. Body mass index (BMI) is defined as weight (kg) divided by height (m) squared.

[l] Persons aged ≥15 years.

[m] Persons aged ≥15 years. Average serving assumed to correspond to 80 g.

[n] Proportion of women who want to prevent or space conception and are not using modern contraceptive methods.

[o] Proportion of the population with improved or regulated water supply.

[p] Proportion of the population with improved sanitation coverage or full sewage treatment.

[q] Proportion of adults aged ≥ 15 years reporting a history of child sexual abuse by an older person involving contact (genital touching or fondling), intercourse or attempted intercourse.

Risk factor	Prevalence measure[b]	Eastern Mediterranean			Europe			Western Pacific		
		Total	High income	Low and middle income	Total	High income	Low and middle income	Total	High income	Low and middle income
Population (millions)		520	31	489	883	407	476	1 738	204	1 534
		(000)	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*
Other selected risks										
Unsafe health-care injections	Proportion receiving injections contaminated with hepatitis B per year (%)	9	0	9	0	0	1	7	0	8
Child sexual abuse	Proportion of adults with history of abuse (%) [q]	12	11	12	10	8	12	16	13	16

Table A3: Attributable mortality by risk factor and income group in WHO regions,[a] estimates for 2004

Risk factor[b]	Sex						Africa	South-East Asia	The Americas		
	Both sexes		Males		Females		Low and middle income	Low and middle income	Total	High income	Low and middle income
Population (millions)	6 437		3 244		3 193		738	1 672	874	329	545
	(000)	*% total*	*(000)*	*% total*	*(000)*	*% total*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*
Total deaths (all causes)	58 772	100	31 082	100	27 690	100	11 248	15 279	6 158	2 695	3 464
Childhood and maternal undernutrition											
Underweight	2 225	3.8	1 163	3.7	1 062	3.8	982	829	27	0	27
Iron deficiency	273	0.5	55	0.2	217	0.8	87	122	18	3	15
Vitamin A deficiency	651	1.1	339	1.1	312	1.1	273	252	10	0	10
Zinc deficiency	433	0.7	226	0.7	208	0.7	249	111	8	0	8
Suboptimal breastfeeding	1 247	2.1	649	2.1	599	2.2	479	366	67	5	62
Other nutrition-related risk factors and physical activity											
High blood pressure	7 512	12.8	3 544	11.4	3 968	14.3	515	1 438	828	412	416
High cholesterol	2 625	4.5	1 371	4.4	1 255	4.5	83	756	338	174	164
High blood glucose	3 387	5.8	1 675	5.4	1 712	6.2	241	1 044	501	212	289
Overweight and obesity	2 825	4.8	1 319	4.2	1 506	5.4	166	343	587	288	299
Low fruit and vegetable intake	1 674	2.8	898	2.9	777	2.8	89	450	183	82	102
Physical inactivity	3 219	5.5	1 567	5.0	1 651	6.0	202	782	451	229	222
Addictive substances											
Tobacco use	5 110	8.7	3 578	11.5	1 532	5.5	145	1 037	863	600	263
Alcohol use	2 252	3.8	1 942	6.2	310	1.1	269	354	347	56	291
Illicit drug use	245	0.4	192	0.6	53	0.2	9	73	31	16	14
Sexual and reproductive health											
Unsafe sex	2 355	4.0	1 033	3.3	1 321	4.8	1 746	332	107	20	87
Unmet contraceptive need[c]	163	0.3	0	0.0	163	0.6	60	73	6	0	6
Environmental risks											
Unsafe water, sanitation, hygiene	1 908	3.2	994	3.2	914	3.3	896	599	59	3	56
Urban outdoor air pollution	1 152	2.0	609	2.0	543	2.0	61	207	143	72	71
Indoor smoke from solid fuels	1 965	3.3	886	2.9	1 079	3.9	551	630	30	0	29
Lead exposure	143	0.2	94	0.3	49	0.2	9	70	7	0	6
Global climate change	141	0.2	73	0.2	68	0.2	57	58	2	0	2
Occupational risks											
Risk factors for injuries	352	0.6	331	1.1	21	0.1	42	121	24	3	20
Carcinogens	177	0.3	137	0.4	41	0.1	6	32	19	10	9
Airborne particulates	457	0.8	352	1.1	105	0.4	29	118	29	15	14
Ergonomic stressors	1	0.0	1	0.0	0	0.0	0	0	0	0	0
Noise	0	0.0	0	0.0	0	0.0	0	0	0	0	0
Other selected risks											
Unsafe health care injections	417	0.7	279	0.9	138	0.5	30	121	2	0	2
Child sexual abuse	82	0.1	41	0.1	41	0.1	4	38	4	2	2

[a] See Table A5 for a list of Member States by WHO region and income category.

[b] The table shows estimated deaths attributable to each risk factor considered individually, relative to its own counterfactual risk exposure distribution. These risks may act in part through, or jointly with, other risks. Total deaths attributable to groups of risk factors will thus usually be less than the sum of the deaths attributable to individual risks.

[c] Unmet contraceptive need refers to "non-use and use of ineffective methods of contraception" among those wanting to control their fertility to avoid conception or space the birth of children.

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References

Risk factor[b]	Eastern Mediterranean			Europe			Western Pacific		
	Total	High income	Low and middle income	Total	High income	Low and middle income	Total	High income	Low and middle income
Population (millions)	520	31	489	883	407	476	1 738	204	1 534
	(000)	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*
Total deaths (all causes)	4 306	113	4 194	9 493	3 809	5 683	12 191	1 478	10 714
Childhood and maternal undernutrition									
Underweight	301	1	300	28	0	27	59	0	58
Iron deficiency	25	0	25	8	4	4	12	1	11
Vitamin A deficiency	86	1	86	10	0	10	20	0	19
Zinc deficiency	46	0	46	5	0	5	15	0	15
Suboptimal breastfeeding	208	2	205	36	2	33	92	1	92
Other nutrition-related risk factors and physical activity									
High blood pressure	475	19	456	2 491	740	1 752	1 764	200	1 564
High cholesterol	178	6	172	926	242	684	345	52	293
High blood glucose	283	13	270	748	258	490	570	86	484
Overweight and obesity	233	18	215	1 081	318	763	414	56	358
Low fruit and vegetable intake	78	3	75	423	77	346	451	40	412
Physical inactivity	219	8	211	992	301	691	573	87	486
Addictive substances									
Tobacco use	187	3	184	1 472	595	877	1 405	261	1 144
Alcohol use	22	1	21	618	25	593	641	52	590
Illicit drug use	47	1	46	45	11	33	41	3	38
Sexual and reproductive health									
Unsafe sex	52	0	52	54	16	38	65	6	58
Unmet contraceptive need[c]	21	0	21	1	0	1	3	0	3
Environmental risks									
Unsafe water, sanitation, hygiene	226	2	224	33	3	30	95	1	94
Urban outdoor air pollution	95	4	91	225	76	149	421	47	373
Indoor smoke from solid fuels	142	0	142	20	0	19	591	0	591
Lead exposure	26	1	25	8	0	8	23	0	22
Global climate change	20	0	20	1	0	1	4	0	4
Occupational risks									
Risk factors for injuries	43	2	42	27	4	24	95	4	91
Carcinogens	6	0	6	42	14	27	72	9	62
Airborne particulates	15	0	15	46	19	27	220	9	211
Ergonomic stressors	0	0	0	0	0	0	0	0	0
Noise	0	0	0	0	0	0	0	0	0
Other selected risks									
Unsafe health-care injections	55	0	55	14	0	14	195	9	185
Child sexual abuse	4	0	4	7	2	6	24	3	21

Table A4: Attributable DALYs by risk factor and income group in WHO regions,[a] estimates for 2004

Risk factor[b]	Sex						Africa	South-East Asia	The Americas		
	Both sexes		Males		Females		Low and middle income	Low and middle income	Total	High income	Low and middle income
Population (millions)	6 437		3 244		3 193		738	1 672	874	329	545
	(000)	*% total*	*(000)*	*% total*	*(000)*	*% total*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*
Total DALYs (all causes)	**1 523 259**	**100**	**796 133**	**100**	**727 126**	**100**	**376 525**	**442 979**	**143 233**	**45 116**	**98 116**
Childhood and maternal undernutrition											
Underweight	90 683	6.0	47 171	5.9	43 511	6.0	38 575	34 342	1 378	25	1 352
Iron deficiency	19 734	1.3	6 918	0.9	12 815	1.8	4 710	7 946	1 069	123	946
Vitamin A deficiency	22 099	1.5	11 499	1.4	10 600	1.5	9 323	8 548	343	0	343
Zinc deficiency	15 580	1.0	8 120	1.0	7 460	1.0	8 964	3 928	319	1	317
Suboptimal breastfeeding	43 842	2.9	22 721	2.9	21 121	2.9	16 692	12 809	2 472	187	2 285
Other nutrition-related risk factors and physical activity											
High blood pressure	57 227	3.8	30 823	3.9	26 404	3.6	5 010	13 447	5 476	2 229	3 247
High cholesterol	29 723	2.0	17 576	2.2	12 147	1.7	1 071	9 856	3 595	1 593	2 002
High blood glucose	41 305	2.7	21 468	2.7	19 837	2.7	2 906	13 326	6 166	2 374	3 792
Overweight and obesity	35 796	2.3	17 747	2.2	18 049	2.5	2 259	5 133	7 880	3 631	4 249
Low fruit and vegetable intake	15 974	1.0	9 171	1.2	6 803	0.9	1 031	4 865	1 705	674	1 031
Physical inactivity	32 099	2.1	16 795	2.1	15 304	2.1	2 289	9 010	4 349	1 913	2 435
Addictive substances											
Tobacco use	56 897	3.7	43 291	5.4	13 606	1.9	1 930	12 764	8 837	5 681	3 157
Alcohol use	69 424	4.6	59 283	7.4	10 141	1.4	7 759	12 066	13 102	3 402	9 700
Illicit drug use	13 223	0.9	10 178	1.3	3 045	0.4	1 131	2 585	3 110	1 433	1 677
Sexual and reproductive health											
Unsafe sex	70 017	4.6	30 064	3.8	39 954	5.5	50 771	10 559	3 146	536	2 610
Unmet contraceptive need[c]	11 501	0.8	0	0.0	11 501	1.6	3 645	4 934	773	6	766
Environmental risks											
Unsafe water, sanitation, hygiene	64 240	4.2	33 459	4.2	30 781	4.2	28 700	20 176	2 219	69	2 150
Urban outdoor air pollution	8 747	0.6	4 981	0.6	3 766	0.5	881	1 911	884	393	492
Indoor smoke from solid fuels	41 009	2.7	20 614	2.6	20 395	2.8	18 057	12 492	735	5	730
Lead exposure	8 977	0.6	4 891	0.6	4 087	0.6	1 050	4 044	580	20	560
Global climate change	5 404	0.4	2 800	0.4	2 604	0.4	2 029	2 320	81	2	80
Occupational risks											
Risk factors for injuries	11 612	0.8	10 810	1.4	802	0.1	1 385	4 029	772	95	677
Carcinogens	1 897	0.1	1 419	0.2	479	0.1	87	391	181	81	100
Airborne particulates	6 751	0.4	5 272	0.7	1 479	0.2	553	1 820	590	251	339
Ergonomic stressors	898	0.1	530	0.1	368	0.1	102	261	87	28	59
Noise	4 509	0.3	3 069	0.4	1 441	0.2	381	1 574	314	123	191
Other selected risks											
Unsafe health-care injections	6 960	0.5	4 506	0.6	2 453	0.3	827	2 308	40	0	39
Child sexual abuse	9 018	0.6	3 433	0.4	5 585	0.8	603	4 048	753	401	352

DALY, disability-adjusted life year.

[a] See Table A5 for a list of Member States by WHO region and income category.

[b] The table shows estimated DALYs attributable to each risk factor considered individually, relative to its own counterfactual risk exposure distribution. These risks may act in part through, or jointly, with other risks. Total DALYs attributable to groups of risk factors will thus usually be less than the sum of the DALYs attributable to individual risks.

[c] Unmet contraceptive need refers to "non-use and use of ineffective methods of contraception" among those wanting to control their fertility to avoid conception or space the birth of children.

Risk factor[b]	Eastern Mediterranean			Europe			Western Pacific		
	Total	High income	Low and middle income	Total	High income	Low and middle income	Total	High income	Low and middle income
Population (millions)	520	31	489	883	407	476	1 738	204	1 534
	(000)	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*	*(000)*
Total DALYs (all causes)	141 993	4 379	137 614	151 461	49 331	102 130	264 772	22 305	242 466
Childhood and maternal undernutrition									
Underweight	11 882	65	11 816	1 148	19	1 129	3 358	32	3 326
Iron deficiency	1 689	49	1 640	948	251	696	3 373	210	3 162
Vitamin A deficiency	2 915	17	2 898	318	1	317	653	4	649
Zinc deficiency	1 638	12	1 626	174	1	174	557	2	555
Suboptimal breastfeeding	7 299	89	7 210	1 263	98	1 164	3 307	36	3 270
Other nutrition-related risk factors and physical activity									
High blood pressure	4 317	188	4 129	17 121	3 807	13 314	11 856	1 273	10 583
High cholesterol	2 297	105	2 192	8 975	1 859	7 116	3 930	570	3 360
High blood glucose	3 880	258	3 623	7 304	2 308	4 996	7 722	1 077	6 645
Overweight and obesity	3 231	321	2 910	11 758	3 132	8 625	5 536	839	4 698
Low fruit and vegetable intake	908	38	870	3 624	547	3 077	3 841	299	3 542
Physical inactivity	2 612	144	2 468	8 264	2 189	6 075	5 575	806	4 768
Addictive substances									
Tobacco use	2 793	31	2 762	17 725	5 526	12 199	12 848	1 871	10 976
Alcohol use	763	53	710	17 342	3 165	14 177	18 393	1 541	16 851
Illicit drug use	2 117	22	2 095	2 395	937	1 458	1 886	155	1 731
Sexual and reproductive health									
Unsafe sex	2 166	36	2 131	1 543	384	1 159	1 832	125	1 707
Unmet contraceptive need[c]	1 671	33	1 638	131	4	127	348	4	344
Environmental risks									
Unsafe water, sanitation, hygiene	7 364	85	7 280	1 182	69	1 113	4 599	86	4 513
Urban outdoor air pollution	971	37	933	1 456	369	1 087	2 644	231	2 414
Indoor smoke from solid fuels	4 239	0	4 239	485	4	482	5 001	2	4 999
Lead exposure	1 638	91	1 547	134	7	126	1 531	11	1 521
Global climate change	756	11	745	26	1	25	192	3	190
Occupational risks									
Risk factors for injuries	1 686	63	1 623	823	114	709	2 918	115	2 803
Carcinogens	84	4	80	408	116	291	747	75	671
Airborne particulates	357	12	345	676	284	392	2 755	163	2 592
Ergonomic stressors	61	3	58	99	32	67	289	23	266
Noise	346	22	324	538	161	376	1 356	86	1 270
Other selected risks									
Unsafe health-care injections	938	0	938	261	0	261	2 586	126	2 460
Child sexual abuse	512	22	490	798	213	585	2 303	197	2 106

Table A5: Countries grouped by WHO region and income per capita[a] in 2004

WHO region	Income category	WHO Member States
African Region	Low and middle	Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, Swaziland, Togo, Uganda, United Republic of Tanzania, Zambia, Zimbabwe
Region of the Americas	High	Bahamas, Canada, United States of America
	Low and middle	Antigua and Barbuda, Argentina, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela (Bolivarian Republic of)
Eastern Mediterranean Region	High	Bahrain, Kuwait, Qatar, Saudi Arabia, United Arab Emirates
	Low and middle	Afghanistan, Djibouti, Egypt, Iran (Islamic Republic of), Iraq, Jordan, Lebanon, Libyan Arab Jamahiriya, Morocco, Oman, Pakistan, Somalia, Sudan, Syrian Arab Republic, Tunisia, Yemen
European Region	High	Andorra, Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland, United Kingdom
	Low and middle	Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Poland, Moldova, Romania, Russian Federation, Serbia and Montenegro, Slovakia, Tajikistan, The former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Uzbekistan, Ukraine
South-East Asia Region	Low and middle	Bangladesh, Bhutan, Democratic People's Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, Timor-Leste
Western Pacific Region	High	Australia, Brunei Darussalam, Japan, New Zealand, Republic of Korea, Singapore
	Low and middle	Cambodia, China, Cook Islands, Fiji, Kiribati, Lao People's Democratic Republic, Malaysia, Marshall Islands, Micronesia (Federated States of), Mongolia, Nauru, Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu, Viet Nam
Non-Member States or territories		American Samoa, Anguilla, Aruba, Bermuda, British Virgin Islands, Cayman Islands, Channel Islands, Faeroe Islands, Falkland Islands (Malvinas), French Guiana, French Polynesia, Gibraltar, Greenland, Guadeloupe, Guam, Holy See, Isle of Man, Liechtenstein, Martinique, Montserrat, Netherlands Antilles, New Caledonia, Northern Mariana Islands, West Bank and Gaza Strip, Pitcairn, Puerto Rico, Réunion, Saint Helena, Saint Pierre et Miquelon, Tokelau, Turks and Caicos Islands, United States Virgin Islands, Wallis and Futuna Islands, Western Sahara

[a] WHO Member States are classified as low and middle income if their 2004 gross national income per capita is less than US$ 10 066, and as high income if their 2004 gross national income per capita is US$ 10 066 or more, as estimated by the World Bank *(102)*.

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Global health risks: mortality and burden of disease attributable to selected major risks provides a comprehensive assessment of the mortality and burden of disease attributable to 24 global risk factors. This second volume complements *The global burden of disease: 2004 update* which summarized the mortality and burden of disease attributable to 135 disease and injury causes. Understanding the risks to health in different parts of the world is key to preventing disease and injuries. Consistent and comparative analysis of the available information on risks to health facilitates comparisons of the relative importance of health risks across different populations globally and assessment of the potential gains from public health interventions to reduce health risks.

This publication draws on the extensive databases of the World Health Organization, scientific studies, and information provided by Member States for both exposure data and the causal associations of risk exposure to disease and injury outcomes. It applies these updated risk analyses to the latest regional estimates of mortality and disease burden for a comprehensive set of diseases and injuries for the year 2004 by age and sex for the world, for regions of the world, and for countries grouped by average income per capita. This volume updates the previous assessments for the year 2000 published in *The world health report 2002*.

This publication is part of ongoing efforts by WHO to monitor and analyse the global health situation and its trends and to foster increased comparability of data between countries. It builds upon the work of technical programmes within WHO at country, regional and global levels, as well as collaboration with UN agencies, the private sector and academic institutions.

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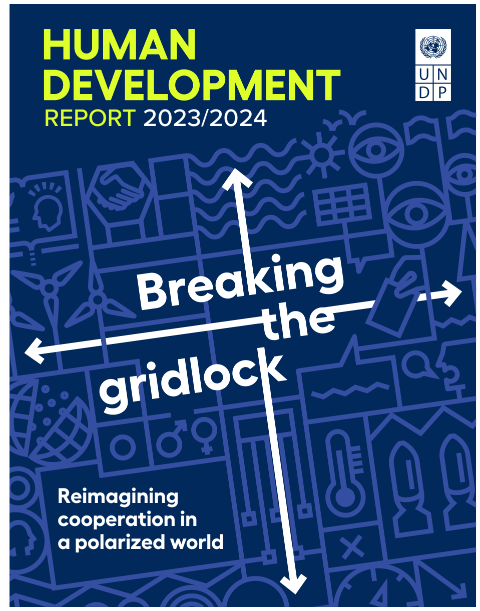

The 2023/2024 Human Development Report

HUMAN DEVELOPMENT REPORT 2023/2024

Breaking the gridlock

Reimagining cooperation in a polarized world

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The 2023/2024 Human Development Report Advisory Board

Foreword

We live in a tightly knit world. Yet shared, interlinked global challenges, such as runaway climate change, are outpacing our institutions' capacities to respond to them. We face "a global gridlock," exacerbated by growing polarization within our countries, which translates into barriers to international cooperation.

Why, despite all our riches and technologies, are we so stuck? Is it possible to mobilize action to address globally shared challenges in a world that is intensively polarized? These questions motivate the 2023/2024 Human Development Report. Firmly grounded in the advancement made in its predecessors, the Report reminds us that our shared aspirations for development need to go beyond wellbeing achievements to also enable people to feel more in control of their lives, less threatened and more empowered to act on shared challenges.

The human toll of this growing gridlock is huge. In lives lost, in opportunities forgone, in feelings of despair. After 20 years of progress, and for the first time on record, inequalities in Human Development Index (HDI) values—which measure a country's health, education and standard of living—are growing between countries at the bottom and countries at the top of the index. Following the 2020 and 2021 declines in the global HDI value, the world had the opportunity to build forward better. Instead, this Human Development Report shows that our global community is falling short. Deaths in battle and displacement from violent conflicts are increasing, reaching the highest levels since World War II. Leading up to a decade of increasingly higher temperatures, 2023 has been the hottest ever recorded. The path of human development progress shifted downwards and is now below the pre-2019 trend, threatening to entrench permanent losses in human development.

Unless we change course.

We can still redress inequalities in human development, but we must rapidly learn some lessons. To start, the Report argues that we need to capitalize on our global connections, choosing cooperation over conflict. The Report shows how the mismanagement of cross-border interdependencies (the response to the Covid-19 pandemic, for example) is at the root of many contemporary challenges, ranging from debt distress in numerous low- and middle-income countries to threats to food security to a pervasive sense of disempowerment around the world. New analysis in the Report using data from the World Values Survey shows that only half the global population feels in control of their lives and that only one-third of people believe that their voice is heard in their political system.

Looking ahead, there will only be more globally shared opportunities and challenges. Besides the high economic interdependence, two main drivers of interdependence are likely to shape our future in the decades to come. First, the dangerous planetary changes of the Anthropocene are deepening the global connections among societies, economies and ecosystems: viruses, microplastics in our oceans and forest fires do not care much for national borders. As the Report argues, we may choose to deglobalize, but we cannot "deplanetize." Second, an unfolding Digital Revolution has led to a dizzying increase in the sharing of data, ideas and culture across societies.

To break the gridlock, the Report is an invitation to reimagine cooperation by pursuing three ideas that it encourages the world to fight for.

First, it is imperative to pursue common ground while accepting that people will have the right to retain their diverse interests and priorities. Piercing a fog of false differences, or misperceptions, is one of the most effective ways of changing behaviour towards cooperation that addresses shared challenges.

Second, we must enable people to pursue their legitimate and natural human security ambitions without protectionism. It has now been 30 years since the 1994 Human Development Report introduced the notion of human security. It focuses on what gives people agency to shape their lives free from fear, want and living without dignity. From the energy transition to artificial intelligence, discussion of risks and challenges needs to be rebalanced with the consistent articulation of the potential to live, for the first time ever, with a surplus of energy and with artificial intelligence that augments what people can do.

Third, we need a 21st century architecture for international cooperation to deliver global public goods. This includes the planetary public goods required to navigate the Anthropocene—from climate change mitigation to pandemic preparedness to biodiversity preservation—as well as the digital public infrastructure and digital public goods that would enable the Digital

Revolution to be harnessed to enable people to flourish in more equitable ways. Global public goods are vital for our interdependent future as global citizens and require rethinking international finance to complement development assistance (supporting poor countries) and humanitarian assistance (saving lives in emergencies).

Indeed, we need to recognize the undeniable fact that we now have access to new financial mechanisms, extraordinary technologies and our greatest asset: human ingenuity and our cooperative capacities. Yet today, psychologists warn that many children report feeling anxious and that they feel they live in a world that does not care about their future. This Report is a rallying cry—we can and must do better than this. It charts ways forward and invites to a conversation on reimagining cooperation.

Achim Steiner
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Acknowledgements

How to make sense of producing a Human Development Report at a time of war? Not only of wars between and within countries but also with our planet, with ourselves and with our future? These questions weighed heavily on our minds. But over time they strengthen the resolve of the team, fuelled by the conviction that the recurring messages of successive Human Development Reports are more relevant than ever. They bear repeating and reaffirming, because even though they may have been said many times before, they seem to be pushed more and more into the background. The primacy of people as the purpose and agents of development. The crucial importance of enabling people to live free from want, fear and indignity, still relevant 30 years after the introduction of the concept of human security in the 1994 Human Development Report.

This, as other Human Development Reports, is an examination of the barriers that enable people to live their lives to their full potential and what to do about them. And here there is much that is new in the world today. Building on the 2021/2022 Human Development Report, which identified polarization as a barrier to addressing shared challenges as one of the novel layers of uncertainty confronting the world, this Report does a deep dive into the reasons why polarization is increasing, how that creates gridlock in collective action and how to reimagine cooperation to break the gridlock. The Report was possible only because of the encouragement, generosity and contributions of so many, recognized only imperfectly and partially in these acknowledgments.

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We would like to warmly invoke the memory of Inge Kaul, an early leader of the Human Development Report Office and a pioneer on global public goods—to which this Report returns—and a fiercely independent thinker and mentor. Inge is very much missed.

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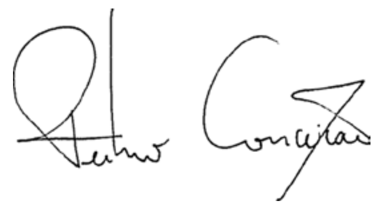

Pedro Conceição
Director
Human Development Report Office

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Breaking the gridlock

A snapshot of the 2023/2024 Human Development Report

We can do better than this. Better than runaway climate change and pandemics. Better than a spate of unconstitutional transfers of power amid a rising, globalizing tide of populism. Better than cascading human rights violations and unconscionable massacres of people in their homes and civic venues, in hospitals, schools and shelters.

We must do better than a world always on the brink, a socioecological house of cards. We owe it to ourselves, to each other, to our children and their children.

We have so much going for us.

We know what the global challenges are and who will be most affected by them. And we know there will surely be more that we cannot anticipate today.

We know which choices offer better opportunities for peace, shared prosperity and sustainability, better ways to navigate interacting layers of uncertainty and interlinked planetary surprises.[1]

We enjoy unprecedented wealth, knowhow and technology—unimaginable to our ancestors—that with more equitable distribution and use could power bold and necessary choices for peace and for sustainable, inclusive human development on which peace depends.

So why does pursuing the ambitions of the 2030 Agenda for Sustainable Development and the Paris Agreement feel like a half-hearted slog through quicksand?

Why in many places does restoring peace, even pauses or ceasefires as hopeful preludes to peace, feel so elusive?

Why are we immobilized on digital governance while artificial intelligence races ahead in a data goldrush?

In short, why are we so stuck? And how do we get unstuck without resorting myopically to violence or isolationism? These questions motivate the 2023/2024 Human Development Report.

Sharp questions belie their complexity; issues with power disparities at their core often defy easy explanation. Magic bullets entice but mislead—siren songs peddled by sloganeering that exploits group-based grievances. Slick solutions and simple recipes poison our willingness to do the hard work of overcoming polarization.

Geopolitical quagmires abound, driven by shifting power dynamics among states and by national gazes yanked inward by inequalities, insecurity and polarization, all recurring themes in this and recent Human Development Reports. Yet we need not sit on our hands simply because great power competition is heating up while countries underrepresented in global governance seek a greater say in matters of global import. Recall that global cooperation on smallpox eradication and protection of the ozone layer, among other important issues such as nuclear nonproliferation, happened over the course of the Cold War.

Slivers of hope have emerged even now. The Ukraine grain deal, before its suspension in 2023, averted widespread food insecurity, which would have hurt poorer countries and poorer people most. The production of Covid-19 vaccines, which saved millions of lives, relies on global supply chains, although, tragically, many more lives could have been saved if vaccine coverage had been more equitable.[2] Countries continue to cooperate on genomic sequencing of variants, even as shameful inequities in vaccine access persist.[3] At the 28th Conference of the Parties to the UN Framework Convention on Climate Change, the world established a new loss and damage fund to benefit more than 3 billion people, with pledges totalling over $600 million.[4] Global clean energy investment, and the jobs and opportunities that come with it, reached an all-time high of $1.8 trillion in 2023 (equivalent to the size of the economy of the Republic of Korea), almost twice the amount in 2020.[5]

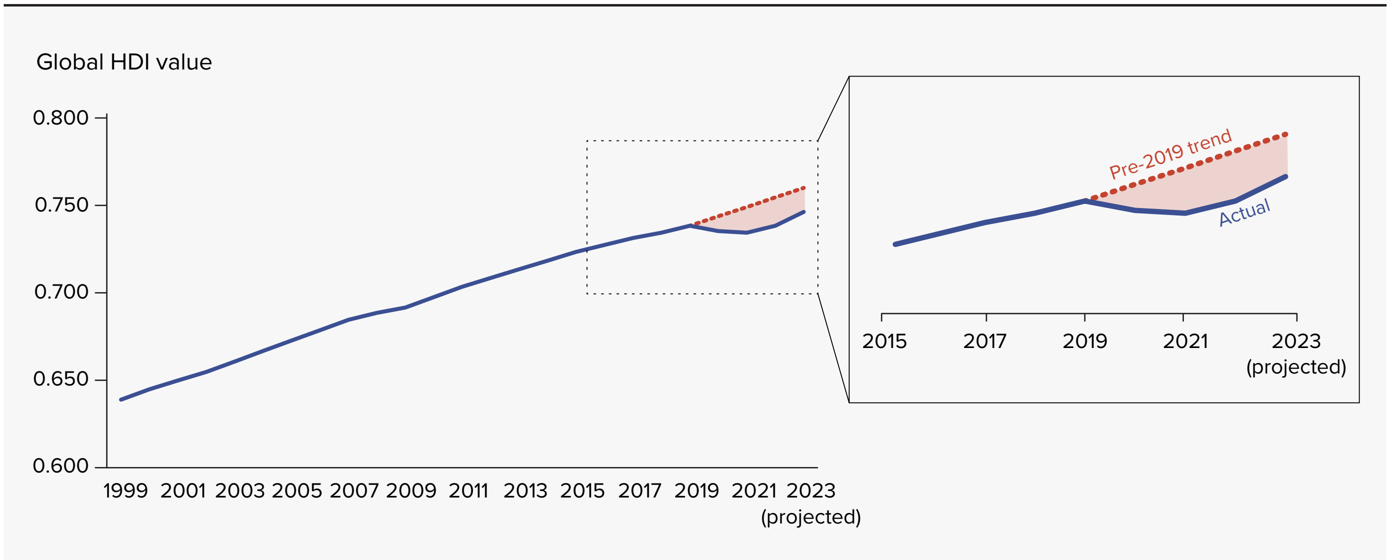
However challenging they are, geopolitics are simply not an excuse to stay stuck in gridlock. There are paths through. Reimagining and fully providing global public goods in ways that meet national development needs at the same time is one of them.

The 2021–2022 Human Development Report argued that a new uncertainty complex is unsettling lives the world over and dragging on human development. The global Human Development Index (HDI) value fell for the first time ever—in both 2020 and 2021.

The global HDI value has since rebounded to a projected record high in 2023 (figure S.1). All components of the global HDI are projected to exceed their pre-2019 values.[6]

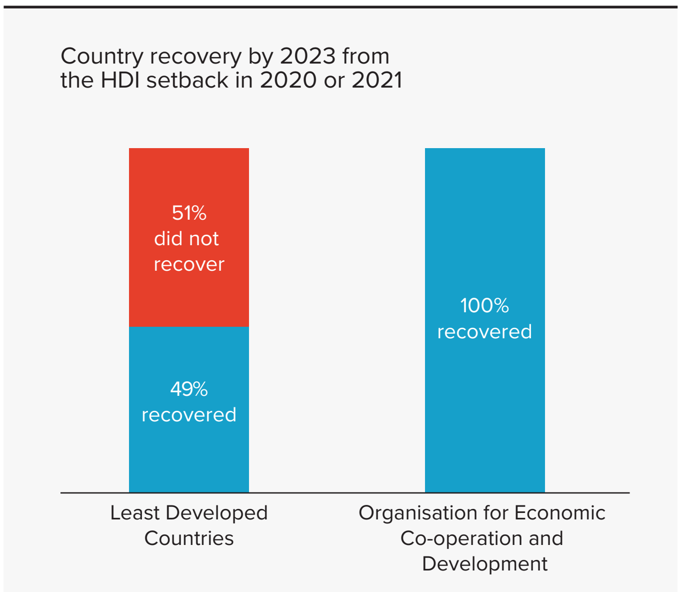
Despite being projected to reach a new high, the global HDI value would still be below trend. And the global figure masks disturbing divergence across countries: every Organisation for Economic Co-operation and Development country is projected to have recovered, but only about half of the Least

Figure S.1 A permanent shift in the Human Development Index (HDI) trajectory?



Note: The global HDI value for 2023 is a projection. The pre-2019 trend is based on the evolution of the global HDI value in the previous 20 years.
Source: Human Development Report Office calculations based on data from Barro and Lee (2018), IMF (2023d), UNDESA (2022, 2023), UNESCO Institute for Statistics (2023), United Nations Statistics Division (2023) and World Bank (2023).

Figure S.2 Recovery of Human Development Index (HDI) values since the 2020–2021 decline is projected to be highly unequal



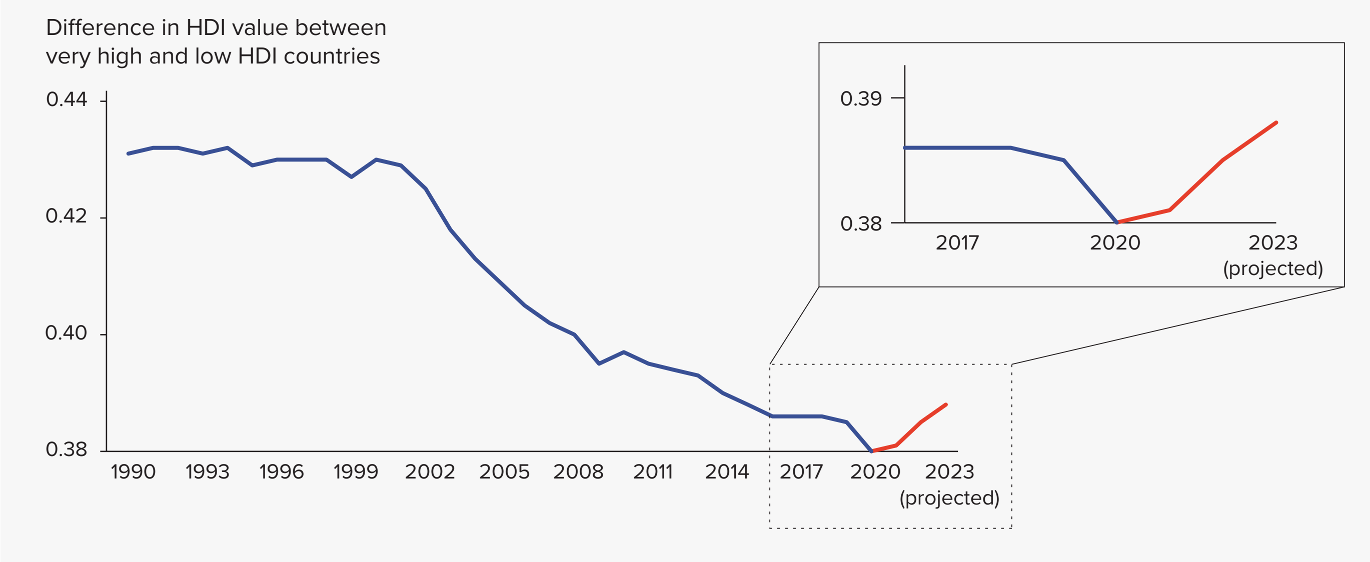
Note: Least Developed Countries have low levels of income and face vulnerabilities that make them "the poorest and weakest segment" of the international community (https://www.un.org/ohrlls/content/about-least-developed-countries). Recovery means that countries that suffered a decline in HDI value in 2020 or 2021 are projected to reach or surpass their pre-decline HDI value by 2023.
Source: Human Development Report Office calculations based on data from Barro and Lee (2018), IMF (2023d), UNDESA (2022, 2023), UNESCO Institute for Statistics (2023), United Nations Statistics Division (2023) and World Bank (2023).

Developed Countries are projected to have done so (figure S.2). After 20 years of steady progress, inequality between countries at the upper and lower ends of the HDI has reversed course, ticking up each year since 2020 (figure S.3).

If the global HDI value continues to evolve below the pre-2019 trend, as it has since 2020, losses will be permanent. Based on the 1999–2019 trend, the global HDI value was on track to cross the threshold defining very high human development (a value of 0.800) by 2030—coinciding with the deadline to meet the Sustainable Development Goals. Now, the world is off track. Indeed, every region's projected 2023 HDI value falls below its pre-2019 trend. Whatever its future trajectory, the global HDI value will capture —incompletely, if at all—many other important elements, such as the debilitating effects of chronic illness or the spikes in mental health disorders or in violence against women, all restricting people's possibilities for their lives. For rich and poor countries alike some losses will never be recovered. Whatever the charts and indicators may say about people today, the Covid-19 pandemic took some 15 million lives.[7] We cannot get them back. Nor the time siphoned off in so many ways —in isolation, in caregiving, in not attending school.

The HDI is an important, if crude, yardstick for human development. Just a few years ago wellbeing had never been higher, poverty never lower. Yet people

Figure S.3 Inequality between very high Human Development Index (HDI) and low HDI countries is increasing, bucking long-run declines



Note: The difference in HDI values for 2023 is based on projections.
Source: Human Development Report Office calculations based on data from Barro and Lee (2018), IMF (2023), UNDESA (2022, 2023), UNESCO Institute for Statistics (2023), United Nations Statistics Division (2023) and World Bank (2023).

around the world were reporting high levels of sadness, stress and worry (figure S.4).[8] Those self-reported measures have since risen for nearly 3 billion people.[9] And while 9 in 10 people show unwavering support for the ideal of democracy, there has been an increase in those supporting leaders who may undermine it: today, for the first time ever, more than half the global population supports such leaders (figure S.5).[10]

The uncertainty complex has cast a very long shadow on human development writ large, with recent years marking perhaps an unfortunate and avoidable fork in its path rather than a short-lived setback.

What gives?

Progress feels harder to grasp, especially when planetary pressures are brought into view; our standard development measures are clearly missing some things. One of those things may be the disempowerment of people—gaps in human agency—which is taking combined hits from new configurations of global complexity and interdependence, uncertainty, insecurity and polarization.

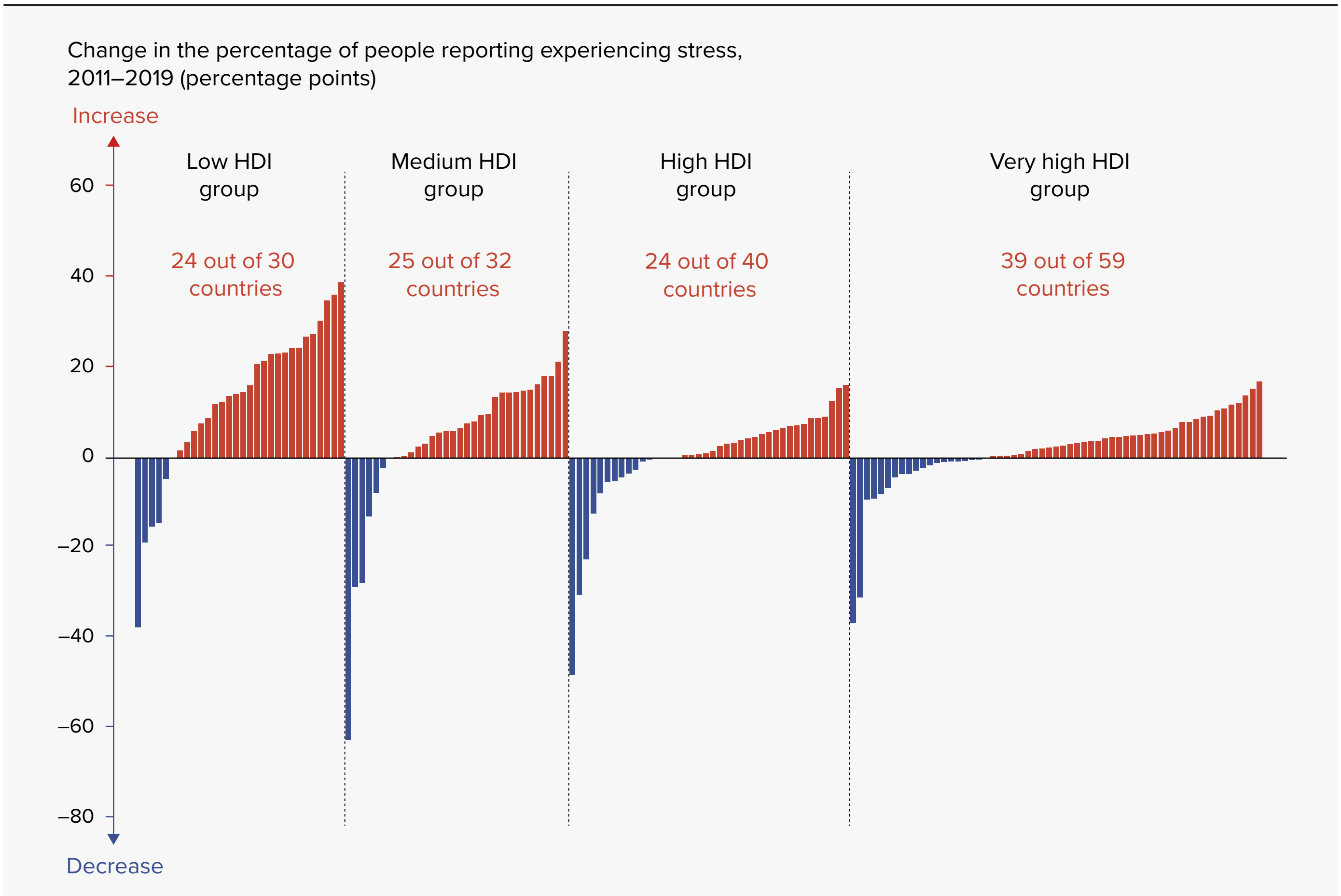
People are looking for answers and a way forward. This can be channelled helpfully via shared ambition that brings everyone along (not necessarily on everything) in areas of cooperation that are not zero-sum, enabled by cooperative narratives and institutions built on a bedrock of generalized trust. Over the past 10 years both very high and high HDI countries have improved their HDI values without increasing planetary pressures, a shift from previous trends of the two increasing together, so there are reasons to hope that this might be possible (figure S.6).

Or it can be channelled, as it seems now, into vicious cycles of demonizing blame games that breed, at best, suspicion and distrust and, at worst, prejudice, discrimination and violence.

Troublingly, populism has exploded, blowing past last century's peaks, which roughly corresponded to periods of mismanaged globalization.[11] That is happening alongside, and in many cases exploiting, wicked forms of polarization, such as the winnowing and hardening of narrow identities, a sort of coercion or unfreedom enabled, if not outright celebrated, by an ongoing fetishization of so-called rational self-interest.

People's ability to determine for themselves what it means to live a good life, including defining and reassessing their responsibilities to other people and to the planet, has been crowded out in many ways. Metastatic hands-off dogma hides the raiding of the economic and ecological cookie jar. Dog-eat-dog and beggar-thy-neighbour mindsets harken back to mercantilist eras. And policies and institutions—including those

Figure S.4 **Self-reported stress rose in most countries, even before the Covid-19 pandemic**



HDI is Human Development Index.
Note: Values refer to the change in the percentage of people who reported experiencing stress "during a lot of the day yesterday."
Source: Human Development Report Office, based on Gallup (2023).

that have mismanaged globalized market dynamics—default to "me" before "we."

We are at an unfortunate crossroad. Polarization and distrust are on a collision course with an ailing planet. Insecurity and inequalities have a lot to do with it. So does a constellation of disempowering narratives that engender defensive fatalism and catastrophic inertia—all circumscribed and, in some sense fuelled by, dizzying political polarization.

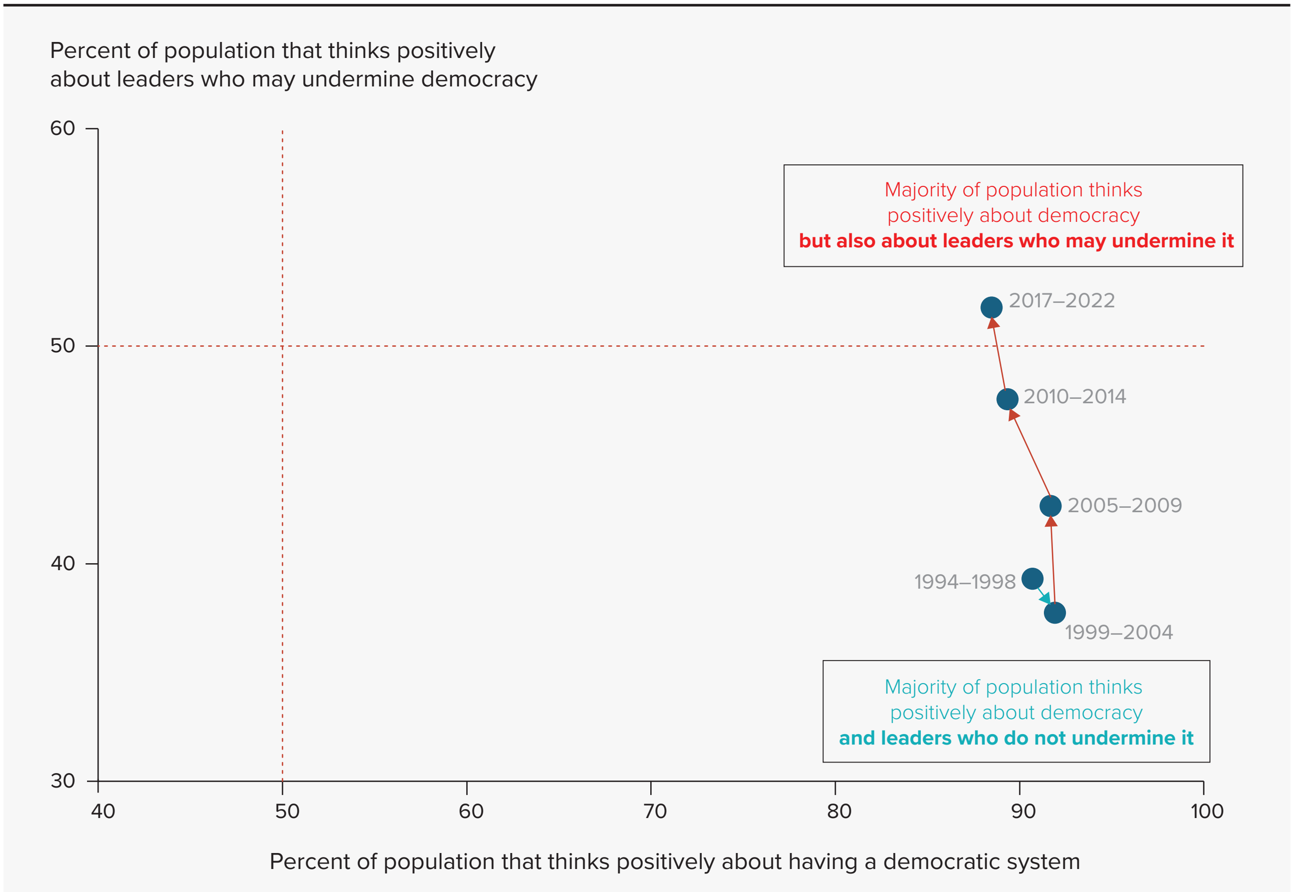
What can we do to help turn things around? Quite a lot.

Build a 21st century architecture for global public goods

First, we should build out a 21st century architecture to deliver the global public goods that we all depend on. It would function as a third track to international cooperation, complementing development assistance focused on poorer countries and humanitarian assistance focused on emergencies. These tracks are not silos. Distinctively, a global public goods architecture would aim for transfers from rich countries to poorer ones that advance goals for every country to benefit. Every country has a chance to have a say, as well as an opportunity to contribute. As such, this third track is intrinsically multilateral.

Global public goods will require additional financing as a complement, rather than substitute for or competitor, to traditional development assistance. The financing can come in many forms. For example, when some portion of an investment in a poorer country generates global benefits, the corresponding financing (or technology transfer) should tend to be concessional, so that alignment is achieved between who benefits (the rest of the world) and who pays (the

Figure S.5 The democracy paradox? Unwavering support for democracy but increasing support for leaders who may undermine it



Note: Data are population-weighted averages for a panel of countries representing 76 percent of the global population. Percent of population on the vertical axis refers to people who responded that having a strong leader who does not have to bother with parliament and elections is "very good" or "fairly good." Percent of population on the horizontal axis refers to people who responded that having a democratic political system is "very good" or "fairly good."
Source: Human Development Report Office based on data from multiple waves of the World Values Survey (Inglehart and others 2022).

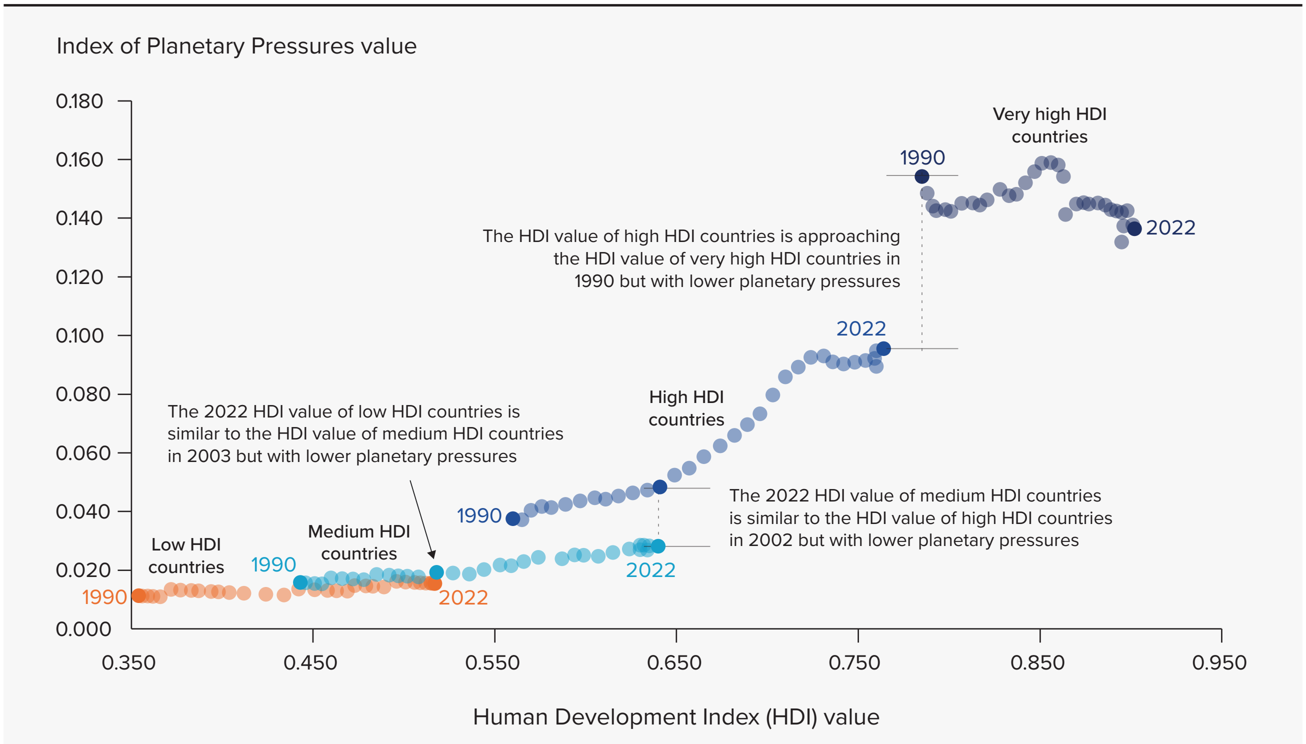
rest of the world). The flipside is the case of hazards or shocks that are not of a single country's making. Automatic triggers can be embedded in bonds or loan agreements, especially state-contingent debt instruments, to help poorer countries cope with crises that they had little part in generating, as with climate change. This would create more predictable conditions in navigating an uncertain world that could mobilize and attract private finance to those countries.

Dial down temperatures and push back polarization

Second, we need to dial down the temperature and push back on polarization, which poisons practically everything it touches and impedes international cooperation. Providing global public goods will help. So will correcting misperceptions about other people's preferences and motivations. All too often people make biased assumptions about other people, including people on the other side of political divides. Often, people agree with one another more than they think. For example, while 69 percent of people around the world report being willing to sacrifice some of their income to contribute to climate change mitigation, only 43 percent perceive others believing the same (a 26 percentage point misperception gap).[12] The result is a false social reality of pluralistic ignorance where incorrect beliefs about others hamstrings cooperation that, if recognized and corrected, could help build collective action on climate.

Not all polarization can be reduced to misperception, however big a role it plays. That makes it important to create spaces of deliberation to bridge divides.

Figure S.6 **Reasons for hope: Improvements on the Human Development Index without increasing planetary pressures**



Note: The Index of Planetary Pressures is constructed using the per capita levels of carbon dioxide emissions (production) and material footprint in each country (it is 1 minus the adjustment factor for planetary pressures presented in table 7 in the *Statistical Annex*).
Source: Human Development Report Office. See specific sources in tables 2 and 7 in the *Statistical Annex*.

Citizen assemblies can function in this way, but they are not the only means. Practical schemes to facilitate more deliberative processing of information can help counter the growing danger of people becoming trapped in beliefs that have no basis in fact.[13] In contexts of intergroup conflict, presenting information in a frame that does not provoke anger can be depolarizing.[14] Interventions that rely on qualitative and narrative-based approaches, such as storytelling and vignettes, are particularly effective.[15]

The key words are deliberate and deliberative. Polarization is more likely to self-destruct badly than to self-correct helpfully. Steady positive pressure that encourages empathy, builds interpersonal trust and emphasizes overlapping, shared identities is the way to go.

Narrow agency gaps

Third, we need to narrow agency gaps—fuelled in part by the divergence between what people believe is possible or probable and what is objectively possible.[16] Agency gaps are also apparent in half of people worldwide reporting that they have no or limited control over their lives and more than two-thirds perceiving that they have little influence in the decisions of their government (figure S.7).

To help narrow agency gaps, institutions need to become more people-centred, co-owned and future-oriented.

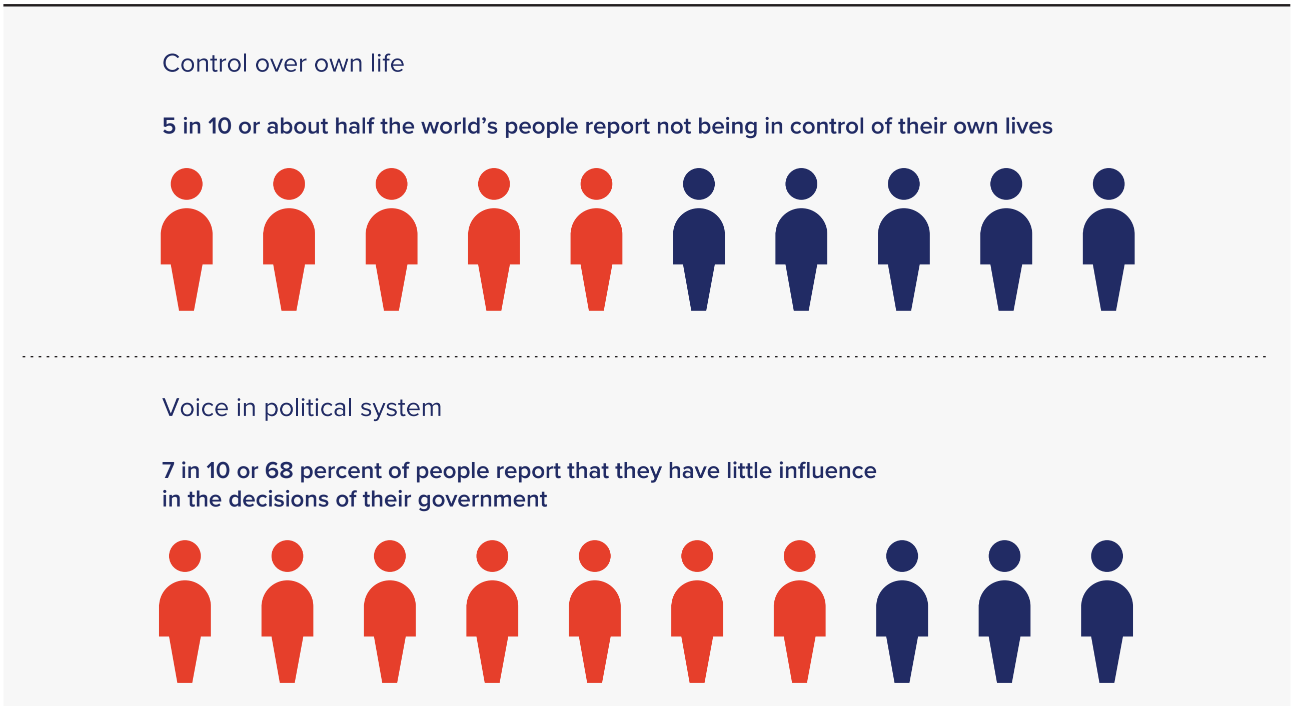
People-centred is about placing ultimate objectives in terms of human development and human security, recognizing the interdependence of people and the planet.

Co-owned is about the fair distribution of the power to set collective goals, the responsibilities to pursue them and the resulting outcomes. It stresses the formation of social norms that cultivate the value of collective achievements and cooperative behaviour.[17]

Future-oriented is about focusing on what we can shape and create if we work together, enriching the space for deliberation and agreement.[18] In the face of challenges, a future-oriented perspective opens possibilities for hope and creative resolve.

Tailoring these principles to different contexts will put us on the road to productive dialogue and action,

Figure S.7 **Agency gaps in collective action are higher than those in control over one's own life**



Note: Agency is the ability of people to act as agents who can do effective things based on their commitments (Sen 2013). It is proxied by two indicators: the share of the population that reported feeling in control over their lives (measured on a scale of 1–10, where 1–3 indicates an acute agency gap, 4–7 indicates a moderate agency gap and 8–10 indicates no agency gap) and the share of the population that reported feeling that their voice is heard in the political system (those who responded "A great deal" or "A lot"). Data are computed using microdata and equal weights across countries.
Source: Human Development Report Office based on data from wave 7 (2017–2022) of the World Values Survey (Inglehart and others 2022).

which must be flexible and iterative amid so much uncertainty, for lessons to inform course corrections.

They will help us break through the tyranny of single adversarial narratives and single exclusive identities.

They will help us better manage evolving global interdependence.

They will help us cooperatively and peacefully break through the global gridlock.

OVERVIEW

Managing interdependence in a polarized world

Managing interdependence in a polarized world

Mismanaged global interdependence hurts people

The human toll of mismanaged interdependence is huge—in lives lost or uprooted, in opportunities forgone, in feelings of despair. Aggression, conflict and violence are extreme realities when complex webs of interdependence fester, especially against backdrops of prolonged power imbalances.

From wars in Gaza and Ukraine to Sudan, Yemen and elsewhere, to gang violence and civil insecurity, peace and stability are under strain or breaking down at alarming rates. Large-scale conflicts involving major powers are escalating. War fatalities have jumped (figure O.1). Sadly, we live in a violent new era characterized by the highest level of state-based armed conflicts since 1945 and a growing share of one-sided conflicts where unarmed civil populations are being attacked.[1]

Violence and peace can both be contagious. Major political events such as coups, revolutions and democratic transitions have a habit of spilling across borders. Conflicts often change the perception of war, making it more acceptable and increasing the likelihood of violent outbreaks elsewhere.

In 2022 the number of forcibly displaced people in the world reached 108 million, the highest level since World War II (figure O.1) and more than two and a half times the level in 2010.[2]

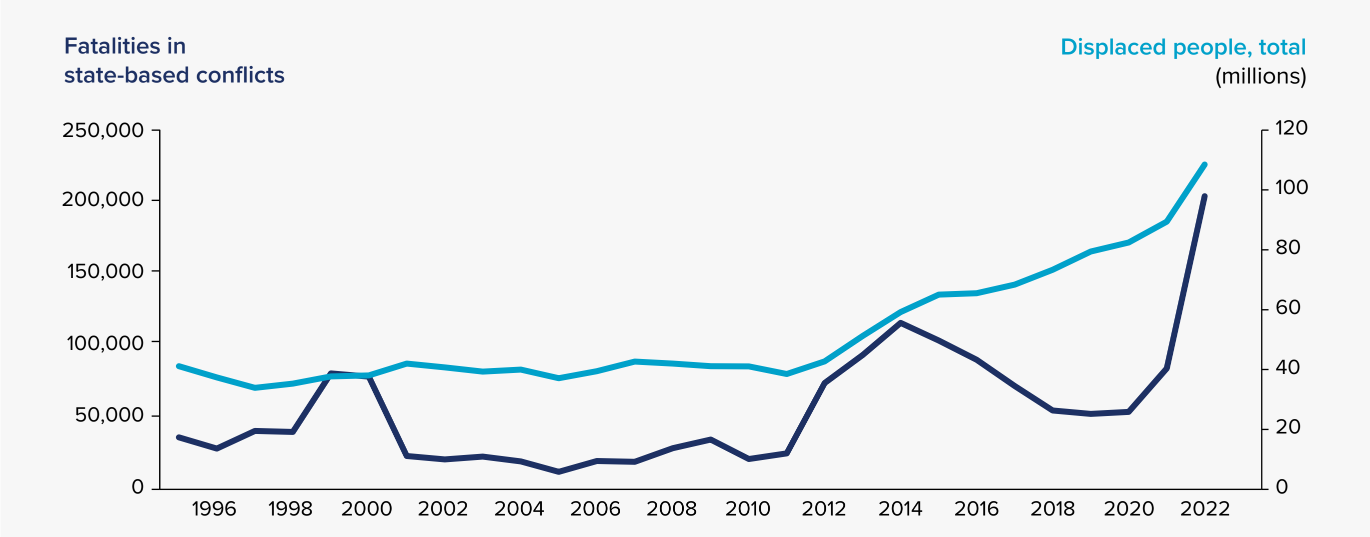
Violent conflicts and their consequences for people are the tip of the iceberg. Gridlock means that systemic risks arising from global interdependence are mismanaged or simply unaddressed, that people are walloped by surprises not capitalizing on them. In extreme cases surprises spiral into full blown crises, ricocheting and amplifying in unexpected ways in an unequal, tightly knit world. The extreme is becoming the norm.

A long series of disease outbreaks preceded the Covid-19 pandemic, which caught the world flatfooted and struggling for a modicum of global coherence over the course of the emergency. Some 15 million people (perhaps more) died worldwide,[3] and the global Human Development Index value tanked.

In addition to huge, unjust divides in access to effective vaccines, a missing ingredient was trust—in our governments and in each other.[4] According to one estimate, if all countries had attained the levels of interpersonal trust seen in the top quarter of countries, global infections might have been reduced by 40 percent, saving millions of lives.[5] In polarizing societies around the world, vaccine status identification became another factional marker separating one camp from the other.[6]

The Covid-19 vaccine story exemplifies the possibilities of global cooperation, as well as the grave injustices that can result when it breaks down. The development of mRNA vaccines relied heavily on cross-border, cross-regional partnerships for sourcing components,[7] for clinical development and trials[8] and

Figure O.1 War deaths and forced displacement are getting much worse



Source: Uppsala Conflict Data Program 2023; UNHCR 2023c.

for manufacturing. But the Covid-19 vaccine story follows pernicious patterns of inequality in access to technologies generally, including lifesaving ones.[9] The pattern is all too familiar—and must be broken for its own sake. And because technological trajectories, from artificial intelligence to synthetic biology, are so steep, so fast and so powerful, the deep cleavages between haves and have-nots could worsen.

Perhaps the greatest casualty of global gridlock, climate change is already exacerbating those cleavages.

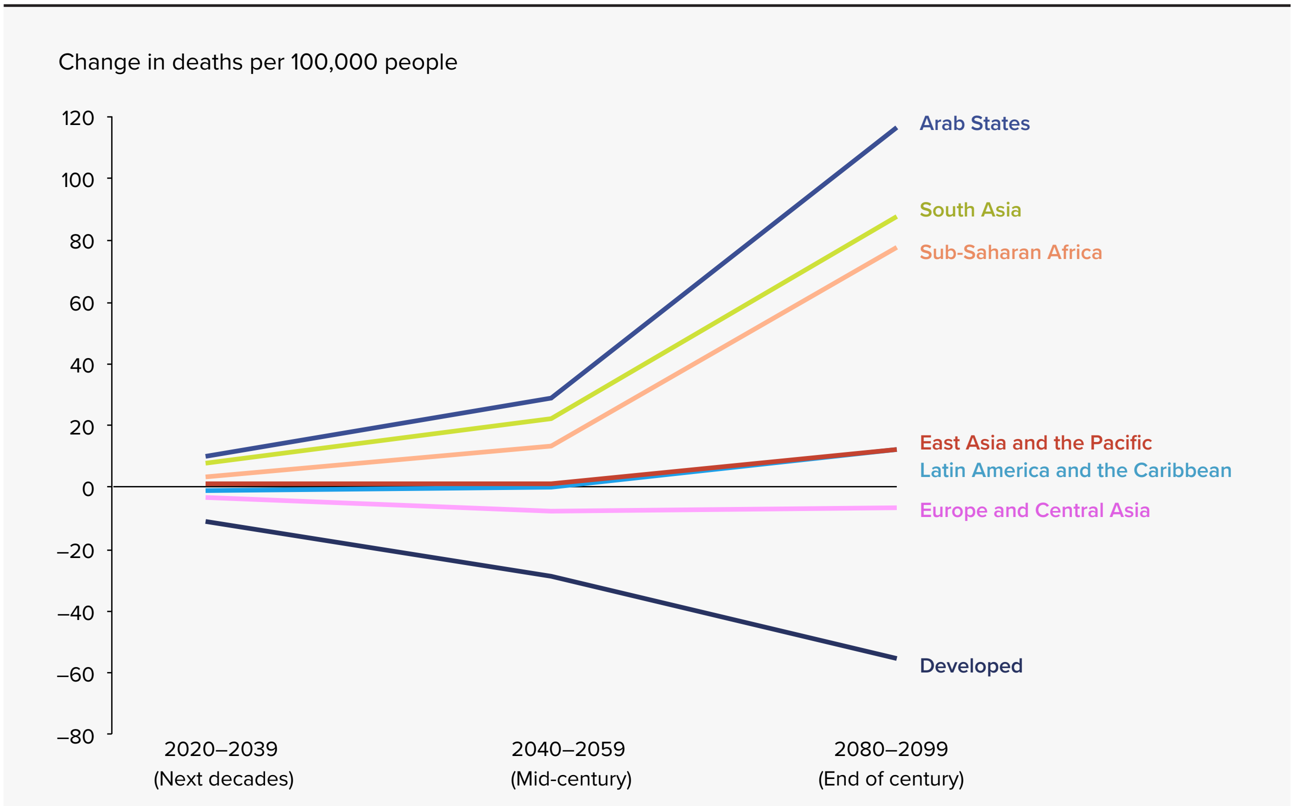
Last year was the hottest in more than 140 years.[10] The average belies considerable regional differences that the United Nations Development Programme's (UNDP) Human Climate Horizons[11] platform projects will worsen under business-as-usual climate scenarios (figure O.2), with climate change resulting in an explosion of inequalities.

The consequences of climate change are already shaking communities and societies, exacting social, emotional and mental tolls. Among the various stressors of climate change is a crippling eco-anxiety, a "generalized sense that the ecological foundations of existence are in the process of collapse."[12] Disappearing biodiversity, landscapes and ways of life can be paralysing, skewing major life decisions such as investing in school or having a child.[13] Effectively, this is a restriction on human development—in freedoms and possibilities in life—owing to both the reality of human-induced planetary pressures and how that reality is mediated by technical reports, the popular press and political leaders. Narratives of shared futures rooted in denialism, fatalism or fearmongering leave little space for agency and imagination.

Political systems mediate, for good or ill (or both), the impacts of crises on people, and the systems themselves are often shaken by crises, including those from mismanaged global interdependence. The destabilizing effects of shocks, alongside the perceived inability of institutions to protect people from them, can stir populism.[14]

Owing to a shock or other cause, populist turns often upset democratic norms and practices and tend to be very costly economically.[15] In parallel, recent literature suggests that the economic losses of certain

Figure O.2 Climate change could result in an explosion of inequalities



Note: Very high emissions scenario.
Source: Human Development Report Office based on Carleton and others (2022) and Human Climate Horizons (https://horizons.hdr.undp.org/).

kinds of shocks are never fully recovered, that trajectories on growth or poverty reduction permanently downshift following crises.[16] When crises and other shocks precede populist turns, and in some cases precipitate them, these populist turns can function as crisis refractors and compounders rather than buffers and mitigators, twisting and propagating shockwaves in an interdependent world.

Global interdependence is evolving

The Covid-19 pandemic, climate change, and the global surge in populism and conflicts all point to a hard truth: ignoring or otherwise mismanaging global interdependence hurts people. Rolling them back in any time frame of relevance, whether for the climate or national security or whatever other reason, is equally foolhardy.

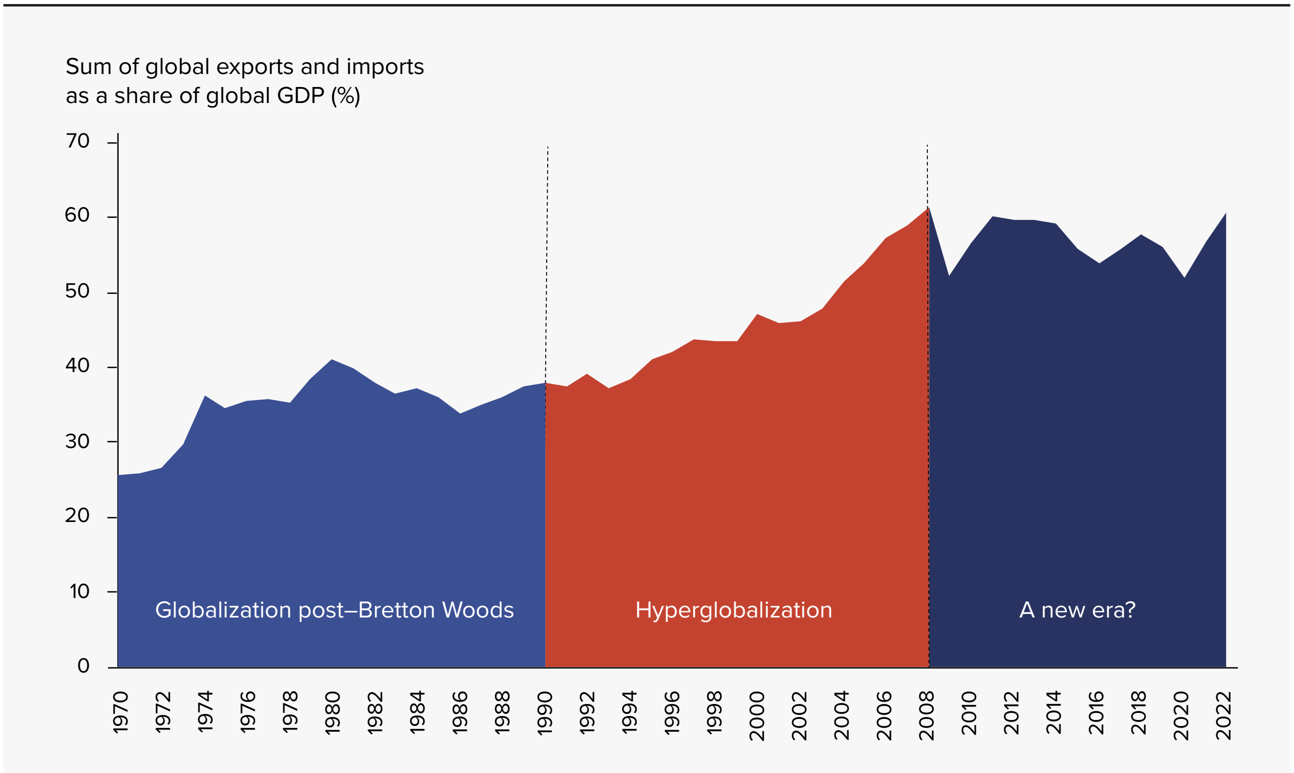
Neither business as usual nor fantasies of deglobalization will do. Instead, we must embrace the complexity of global interdependence and better manage its old and new forms in ways that protect and expand people's possibilities, even as geopolitical fog—alongside uncertainty, insecurity, inequalities and polarization—complicates hopeful paths forward.

By some measures global interconnectivity is at record levels, even as the pace of economic integration stabilizes (figure O.3).[17] Trade in intermediate goods now slightly exceeds trade in final goods.[18] Altogether, goods today travel twice as far as they did 60 years ago, and cross more borders, before final consumption.[19] The production of smartphones, for example, looks nothing like last century's assembly line. Various inputs, from mined cobalt on up to batteries and camera modules, crisscross the globe, sometimes retracing their steps and too often leaving avoidable social and environmental scars along the way.

Global financial interdependence remains high, even if the pace of integration stalled somewhat following the 2007/2008 financial crisis.[20] Low- and middle-income countries' debt servicing costs ballooned over the past two years, following a torrent of interest rate hikes unleashed by central banks to combat inflation.[21]

Cross-border flows of information break records every year. Digital services exports now account for

Figure O.3 Economic interdependence is stabilizing at very high levels



Source: Human Development Report Office based on the World Bank's World Development Indicators database; recreated from Aiyar and others (2023).

more than half of global trade in commercial services.[22] Almost the entire global population is now within the range of a mobile broadband network, and 5.4 billion people were internet users in 2023, though inequities remain stark.[23]

The number of people living outside their country of birth has tripled since 1970, from 84 million to almost 280 million in 2020—or nearly 3.6 percent of the global population.[24] International migration is an exercise of people's agency, expanding their choices and human potential.[25] It creates social, cultural and economic ties between host and sending countries[26] and drives cross-border financial flows.[27]

We should expect familiar forms of interdependence to persist well into the future. Regulation that helps manage them better will be crucial, unless the objective is to privatize rewards and socialize risks.[28] After all, we sometimes build roads with speed bumps. Yet, interdependence in the 21st century is much more than bean counting based largely on 20th century metrics—that is, how many goods or people or bits are moving across borders. The qualities of the interconnections matter, too. Our interdependence is increasingly planetary and instantaneous.

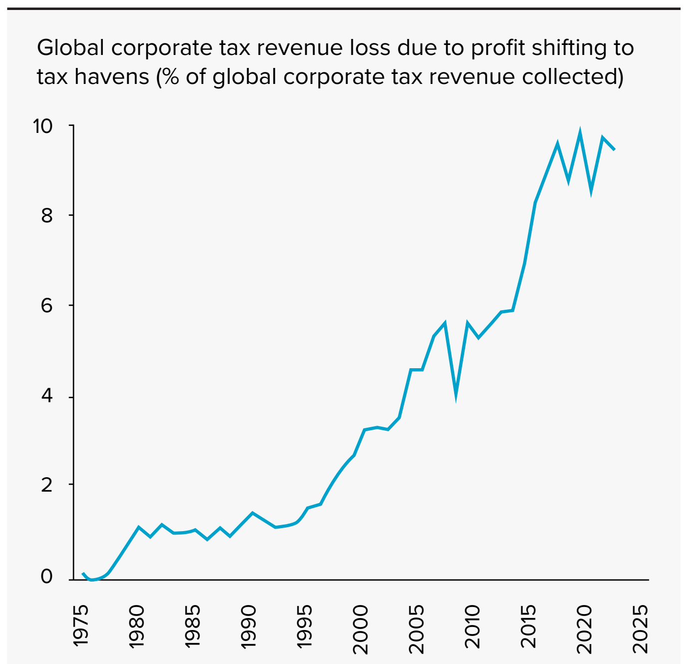
Many interdependences among economies, people and planet are emerging and deepening as the Digital Revolution powers ahead and we go deeper into the Anthropocene—the age of humans. Expanding global trade has helped generate enormous wealth, especially for some, and lift millions out of poverty.[29] Regrettably, it has also paralleled the dismantling of social, economic and ecological guardrails that would otherwise protect and promote human development. Markets have become more concentrated, encouraging rent seeking. Almost 40 percent of global trade in goods is concentrated in three or fewer countries—even for goods where more suppliers exist.[30]

Antiglobalization sentiment has grown louder in overall partisan discourse.[31] Populists' anti-elite ire has global dimensions. Fuelling that frustration is a sense that the forces of globalization have benefited some at the top and left everyone else behind. Multinational companies may have shifted as much as $1 trillion of profits to tax havens in 2022.[32] Global losses in corporate tax revenue have skyrocketed since the mid-1990s as a result of profit shifting (figure O.4). Caught up in the antiglobalization maelstrom, international cooperation is being politicized.

Advocates for deglobalization or any of its lexiconic kin—reshoring, nearshoring and friendshoring—may have their reasons, but those have little to do with practicably addressing new evolving and, in some cases, inescapable forms of global and planetary interdependence. Whatever dent might be made in international trade and capital flows would not come close to offsetting plane tickets, smartphones, carbon dioxide and other means of transboundary hyperconnection. For reasons of water and food security, among others, some countries face major constraints on their ability to restrict trade and would suffer if others chose to do so. No country or region is close to self-sufficient, as all rely on imports from other regions for 25 percent or more of essential goods and services.[33] The climate remains largely indifferent to national borders, and its worsening impacts will continue to also ignore them. The same applies to current and future pandemics.

In other words if we deglobalize—even if partially—we cannot deplanetize, not in the Anthropocene. We must view 21st century global public goods, from pandemic preparedness and peace to climate and digital governance, as opportunities to grasp rather than challenges to avoid. The answer to mismanaged interdependence is not shying away from them

Figure O.4 Profit shifting to tax havens has skyrocketed



Source: Alstadsæter and others 2023.

by retreating within porous borders; it is to embrace and manage them better, learning and improving as we go. Rather than be unwound or reversed, globalization can and should be done differently, in ways that do not destroy the planet, that do not overconcentrate supply chains and that do not generate cost-of-living crises that fuel debt crises in low- and middle-income countries. Global interdependence is tenacious, deepening and evolving. A shift in mindsets, policies and institutions is essential to manage them better and to get unstuck.

Providing global public goods will help

A global public goods lens can add much. When fully provided, global public goods go a long way to better manage deeply rooted and evolving global interdependence, to safeguard and promote human development and to encourage virtuous cycles of cooperation and trust building. They help us work with complexity rather than ignore it. They challenge corrosive zero-sum thinking that pits groups against one another. They spark our imagination to frame and reframe shared problems into win-win opportunities. And they invigorate our sense of duty to one another and to our single, shared planet. All without wishing away divergent interests or even disagreements.

What is a global public good?[34] In a nutshell, a global public good is anything—an object, an action or inaction, an idea–that, when provided, everyone around the world can enjoy. Climate change mitigation is a global public good. So is the work of 13th century poet Rumi. And so is freedom of the seas. A special subcategory of global public goods is planetary public goods, which correspond to planetary interdependence and respond to spillover impacts between countries that cannot be managed or mitigated at their borders. Another may be that of digital public infrastructure and what have been called digital public goods, associated with the Digital Revolution.

While global public goods can serve as a rallying cry for redress against injustices or inefficiencies, they are not merely things that are desirable. In fact, global public goods are less "goods" or concrete things per se and more a choice about how we humans can enjoy them together. They can be seen also as a mindset—an aspiration—and can mobilize cooperation in many forms. As such they are limited from the bottom by our imagination and collective will and from the top by the way power is structured and wielded. They are thus social choices, not just in how we imagine them but whether we decide to imagine them at all.

Understanding that vaccine development and, say, blowing up an asteroid hurtling towards Earth can be framed as global public goods—and, what is more, a specific kind of global public good known as best-shot (box O.1)—means we do not need to start from scratch when we respond. Time means lives. It means we can think across sectors and silos and get better prepared. It means we can draw from our Covid-19 pandemic experience, for example, when an asteroid or a deadly new pathogen or a bout of global financial instability does come. They will come. But we do not have to chase yesterday's crisis.

> "A global public goods lens helps us disentangle complex issues, many of which are complex precisely because their different aspects call for different ways of organizing ourselves

A global public goods lens helps us disentangle complex issues, many of which are complex precisely because their different aspects call for different ways of organizing ourselves. Much of our response, and its shortcomings, to the Covid-19 pandemic can be understood through a global public goods lens, with insights on how to structure incentives to foster cooperation and how to design supportive financing.

Recognizing that global public goods can be enjoyed by everyone is one thing; the distribution of their benefits is another. Because countries have different interests and resources, the value of each global public good to each country will be shaped by those factors. Some of the challenges with providing global public goods are driven by this asymmetry in benefits.

A global public goods lens can also offer insights about reframing challenges. For instance, climate change mitigation (a summation global public good) could be advanced by accelerating the technologies and innovations for renewable and clean energy sources (including moonshots such as nuclear fusion)—which reframes the challenge as providing best-shot global public goods. Imagine massive carbon sequestration plants, powered by nuclear fusion, in the Arctic tundra or across the Sahara. Framing

Box O.1 **Global public goods 101: What are summation, best-shot and weakest-link global public goods?**

Three kinds of global public goods stand out: summation, best-shot, and weakest-link. Climate change mitigation is a typical example of a summation global public good, where the overall level of mitigation depends on the sum of contributions from each individual agent, or country. Institutions must aggregate contributions big and small, work to resolve free riding and navigate game-theoretic problems, such as those posed in the classic prisoner's dilemma (where cooperating producers a better outcome than acting separately in one's self-interest).

Now imagine a cataclysmic, but destructible, asteroid hurtling towards Earth. What would be the best course of action? The probability of destroying the asteroid depends on whichever country or other agent develops the most accurate asteroid-busting technology—in other words, a best-shot global public good. The benefit to everyone on the planet is determined by the agent (in this example, a country or pool of countries) that invests the most resources effectively. Much technology production, such as the race to sequence the human genome, as well as knowledge in the public domain, can generally be considered best-shot global public goods.

Stubborn pockets of endemic polio illustrate the third kind of global public good: weakest-link. While two of the three wild polio viruses have been eradicated (type 2 in 2015 and type 3 in 2019),[1] polio eradication efforts have not succeeded yet—and have missed several target dates—because the third strain of the virus (wild polio type 1) persists in only a few small areas in Afghanistan and Pakistan, and vaccine-derived type 2 also continues to circulate.[2]

Disease eradication, as with smallpox, is a global public good. Yet, as with polio, the entire world remains at risk if the pathogen circulates anywhere. The global benefit is then tied to the circumstances of the weakest agent. The implications for focusing pooled resources are clear. Disease surveillance is also generally considered a weakest-link global public good.[3]

Notes

1. https://www.who.int/news-room/feature-stories/detail/two-out-of-three-wild-poliovirus-strains-eradicated. **2.** Barrett 2011; Cohen 2023. **3.** Post–Covid-19 pandemic assessments established that countries with more generic public health capacities were better able to control the disease, highlighting the importance of not only an emergency response but also the buildup of capacities for surveillance and public health where they are lacking (Neill and others 2023).

climate change as a technological opportunity to be solved could have a crowding-in effect, generating its own positive momentum, instead of the foot dragging of voluntary carbon emissions reductions.

As important as human choice is for establishing, framing and providing global public goods, it is not the whole story. Technology plays an important role, too. The advent of broadcast radio and television opened access to information carried through the airwaves to anyone with a receiving device. Cable television—and later streaming services—created opportunities to fence off programming, excluding nonpayers and leading to the proliferation of subscription services, which could be classified economically and epithetically as excludable. The demise of public telephones after mobile phones burst onto the scene offers a similar story: the technology created opportunities for exclusion that policy choices permitted, if not outright encouraged.

As with technology itself, global public goods often are not given but created. By us! By our imagination and social choices. Therein lies a good measure of their power. They require and therefore activate our imagination for a different world, a different way of doing things, exactly what is needed to navigate in uncertain times. Marrying that creativity with the right incentives and institutional architectures, whose general features we can already anticipate, will go a long way to get things moving and build out a 21st century global architecture to provide global public goods.

Wicked forms of polarization are getting in the way

Easier said than done. What is getting in the way?

For starters, us.

Group-based polarization is widespread and increasing around the world.[35] It is affecting national and international politics that will shape how shared global challenges will be addressed in the decades to come.[36] Because polarization often translates into intolerance and an aversion to compromise and negotiation, it can lead to political gridlock and dysfunction. It does so in part by eroding trust across communities, impeding efforts to address major societal issues, such as health crises, violent conflict and climate change. Since many of these issues engender opposing beliefs and intense political competition, polarization poses a major societal obstacle to addressing shared problems.[37]

Polarization is not the same as difference or disagreement, even vigorous disagreement. Diversity in preferences and perspectives enriches collective decisionmaking and action.[38] Indeed, political institutions have been designed to harness rivalry to serve the public interest. For instance, the arguments invoked by James Madison in designing the US Constitution did not assume away competing interests but rather designed institutions that leveraged those differences to be both adaptable and to serve the public interest.[39]

But polarization presents new challenges that are fraying those institutions.[40] All differences in view are collapsed into questions of a narrow or single identity. The Brexit referendum gave rise to new social identities—Leaver and Remainer—which formed the basis of heightened group-based polarization between those two groups.[41] In the United States and elsewhere, Covid-19 vaccine status identification became a factional marker separating one camp from the other.[42]

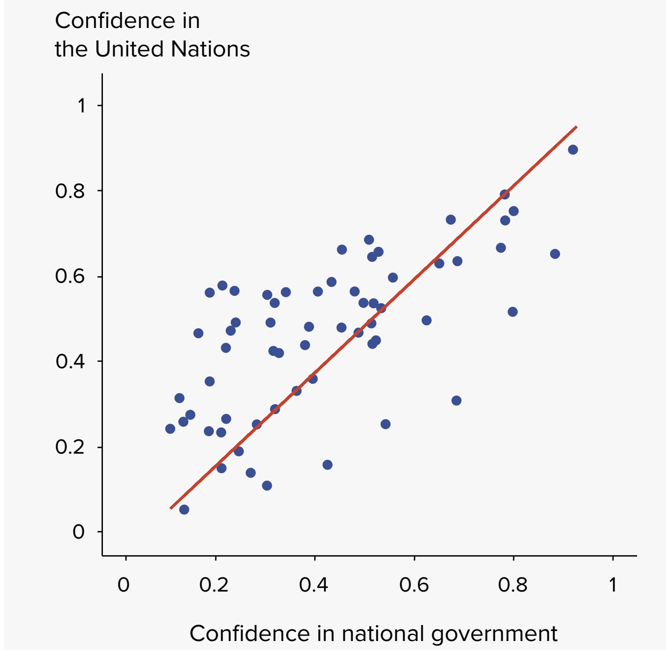
Polarization at the national level has global consequences; it is a drag on international cooperation, including for the provision of global public goods. Between 1970 and 2019 there were 84 referendums concerning international cooperation (such as membership in international organizations), with an increase in more recent decades.[43] There have been campaigns for withdrawing from international institutions.[44] The European Union, the World Trade Organization and international justice institutions have been described as facing legitimacy challenges.[45]

For one, highly polarized societies that seesaw between political extremes make international partners less reliable. There is also a trust problem. Polarization signifies an erosion in trust, and lower trust—or confidence, more broadly—in national institutions tends to correlate with lower confidence in international organizations such as the United Nations (figure O.5). And polarization tends to feed on zero-sum thinking and breed cynicism about compromise and tolerance, all antithetical to global public goods.

Providing global public goods does not require a kumbaya moment among nations (divine intervention for harmony). But nor does it live on the other end of the spectrum, where prevailing assumptions about human behaviour (and that of countries) are limited to self-interest and where cooperation is relegated to reciprocity—that is, repeat games of the prisoner's dilemma. Providing global public goods will languish at either extreme. People and their countries have other, often more dominant motivations that are shaped by social preferences and norms, many of which are culturally contingent. For cooperation crowding-in is just as possible as crowding-out—if not more so—not on everything, but on challenges that are not zero-sum.

Doing so will require additional financing for global public goods as a complement to, rather than a substitute for or competitor to, traditional development assistance. The costs of inaction in not providing global public goods pale in comparison with the benefits.[46] Mindsets and narratives matter here, too. Many motives for support to global cooperation, including global redistribution, go beyond self-interest and have to do with people's views on fairness and equity and whether their sense of duty stops at their country's border or expands around the world. When

Figure O.5 Lower confidence in national government tends to correlate with lower confidence in the United Nations



Note: Confidence in institutions (the national government and the United Nations) implies reporting "a great deal" or "quite a lot" of confidence (other options: "not very much" or "none at all").
Source: Human Development Report Office based on data from wave 7 (2017–2022) of the World Values Survey (Inglehart and others 2022).

provided, global public goods are a win-win, the opposite of zero-sum. If we want to provide them, giving more salience to the nature of these challenges and setting up institutions to facilitate their provision will be crucial.

Mismanaged global interdependence, particularly when culminating in shocks and crises, stokes polarization in many ways. One, by making people feel insecure, and two, when sloganeering transforms insecurity into fear and is exploited for political and personal gain. That is why providing global public goods is so important. By helping us manage global interdependence, they will dampen a major driver of polarization around the world.

"By helping us manage global interdependence, global public goods will dampen a major driver of polarization around the world

Polarization can also be eased directly. One way to do this is by correcting misperceptions about others' beliefs, misperceptions that are widespread. For instance, the prevalence of pro-climate beliefs in the United States is twice what people think it is.[47] The result is a false social reality that hampers collective action on climate change.

Another way to cool things down is by creating spaces of deliberation to bridge divides. Citizen assemblies are one way to do this. Avenues for structured, repeat personal interaction like these matter a lot. It is far easier to objectify, dismiss and malign behind the impersonal safety of a flamethrowing social media post or to hurl vitriol through a television camera than it is when sharing a meal with someone, even with political foes. This may be why storytelling and vignettes have been shown as effective ways to ease polarization.[48] They make "othering" harder.

We need to narrow gaps in agency

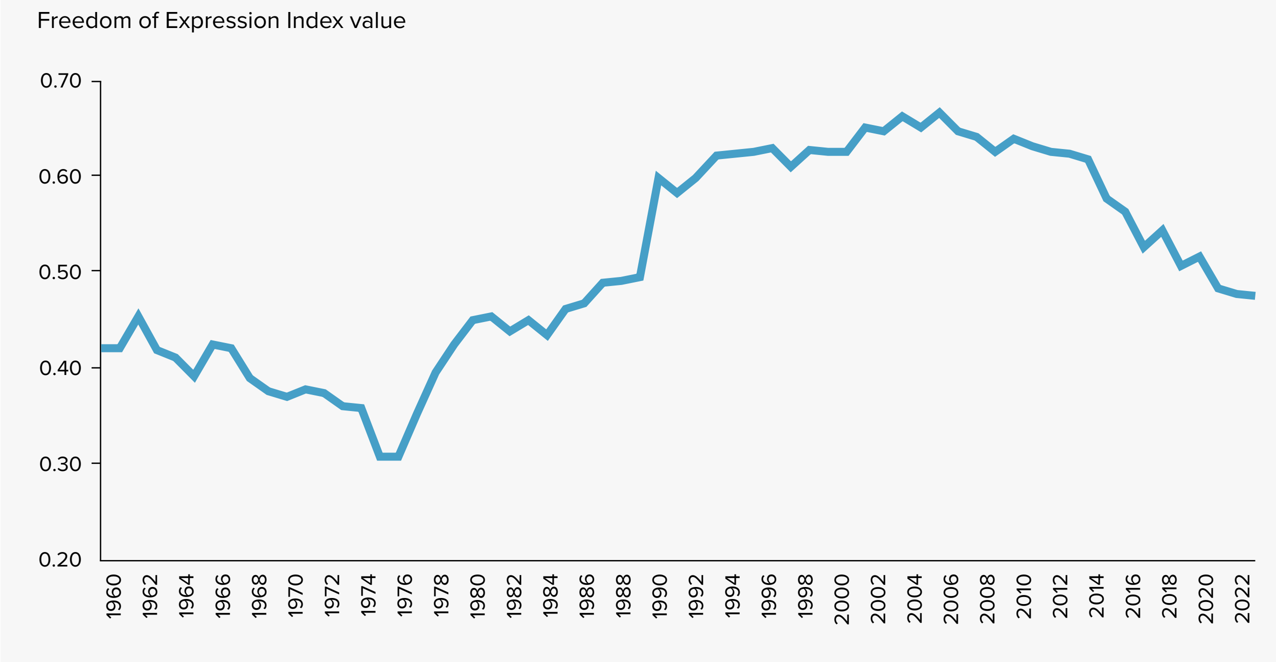
Our institutions are struggling to keep up with evolving, deepening forms of global interdependence and provide global public goods. Polarization is a big part of the problem. So are narrow and self-fulfilling assumptions about human behaviour that limit it to self-interest, assumptions that have long held sway over institutions at all levels. Space for social preferences, norms, duties and culture have been squeezed out. Populism has become an unhelpful pressure valve. The result is that institutions are failing to deliver. No wonder that while the vast majority of people support democracy as an ideal, more than half now support leaders that may undermine it in practice.

Agency is a cornerstone of human development. Albeit difficult to measure directly, agency in pursuit of collective action[49] may be eroding (figure O.6), at least for a sizeable portion of people around the world.[50] For many there is a sinking feeling—evident in widespread increases in self-reported measures of stress, worry and despair—that options for exercising choice in their lives, based on what they have reason to value, is shrinking. From among a diminishing set of options, they are less sure—more insecure—that a choice they want to make can be realized.

These are threats to the human psyche—to our sense of self and autonomy, to our sense of securely belonging and commitment to shared intentionality,[51] to our ability to decide what we value and how we can and do act on those values—of no less importance than the threats posed by a super typhoon, a disease outbreak or violence. Conventional metrics such as GDP or even the Human Development Index are missing something important that is being voiced loudly on the streets, at the ballot box and in the increase in support for leaders that may undermine democracy. Agency may be a way of understanding the gaps and, alongside concepts of insecurity, is an area ripe for innovative measurement. Indeed, across all regions human security and agency gaps go hand-in-hand (figure O.7).

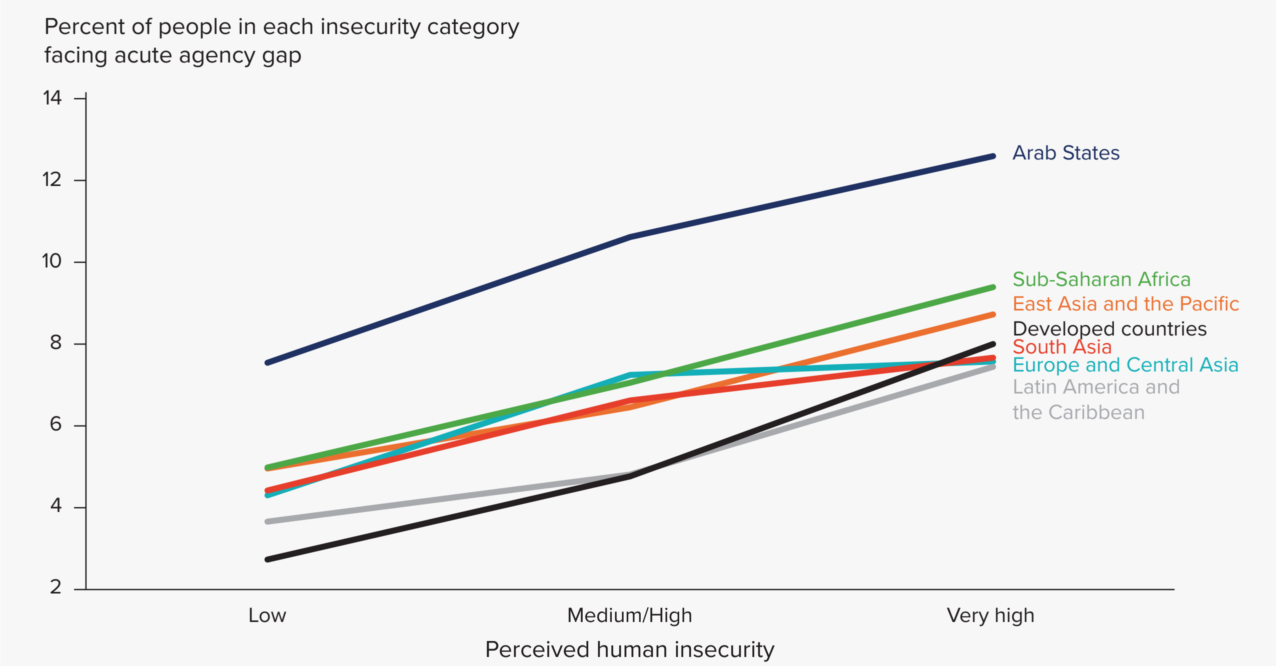
Now add inequality. There is a steep decline in the share of people reporting having very low control over their lives along the income distribution for the bottom 50 percent of the income distribution (figure O.8). That is, agency increases as income grows for the bottom 50 percent of the distribution. At the very bottom lack of agency is particularly heightened (agency gaps are three times greater among people in the lowest income decile than in decile 6 and above). Moreover, the share of people reporting having very high control over their lives is low and relatively equal for the bottom 50 percent of the population but rises with income for deciles 6 and above. Thus, income inequalities, which often intersect and are associated with other inequalities in human development, shape agency.

Figure O.6 **Freedom of expression goes hand-in-hand with agency and has been receding in recent years**



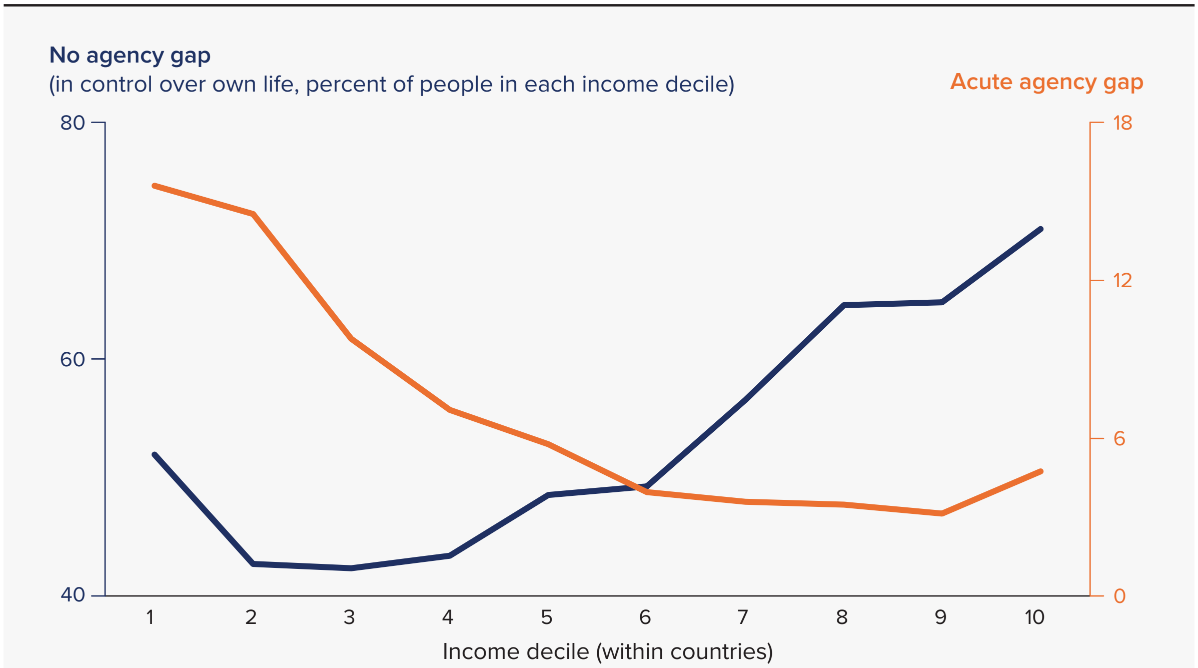
Note: Data are population-weighted global averages.
Source: Human Development Report Office calculations based on data from the Varieties of Democracy project and the World Bank's World Development Indicators database.

Figure O.7 **The higher the perceived human insecurity, the lower the sense of control over one's own life**



Note: Perceived human insecurity is measured as "low," "medium and high" and "very high," using microdata and equal weights across countries, and is based on the index described in annex 1.2 of UNDP (2022d). Acute agency gap measures the share of the population reporting feeling no or very little control over their lives (options 1–3 on a 1–10 scale).
Source: Human Development Report Office based on the latest available data from wave 6 (2010–2014) and wave 7 (2017–2022) of the World Values Survey (Inglehart and others 2022).

Figure O.8 **The perception of agency (control over one's own life) is shaped by income**



Note: Computed using microdata and equal weights across countries.
Source: Human Development Report Office based on data from wave 7 (2017–2022) of the World Values Survey (Inglehart and others 2022).

Polarization, insecurity, inequality and reductive narratives all exact human tolls that can be understood through agency, which threads these strands together as a common denominator and a lodestar for action.

Agency gaps are not just about formal institutions. Norms, which interact dynamically with institutions, matter a lot too. At the beginning of the 20th century, women in most countries were officially prohibited from participating in various societal roles, ranging from owning property and attending universities to engaging in politics. Women's agency gaps were stark and widespread. Throughout the 20th century extensive reforms worldwide recognized the equal legal, social, economic and political rights of women and men. Although women in many countries still face legal restrictions affecting their agency, the progress in institutional reforms has been remarkable. Agency gaps encoded in formal laws have tended to disappear. The legal right to vote in elections—a fundamental form of political agency—serves as a visible example of this evolution.

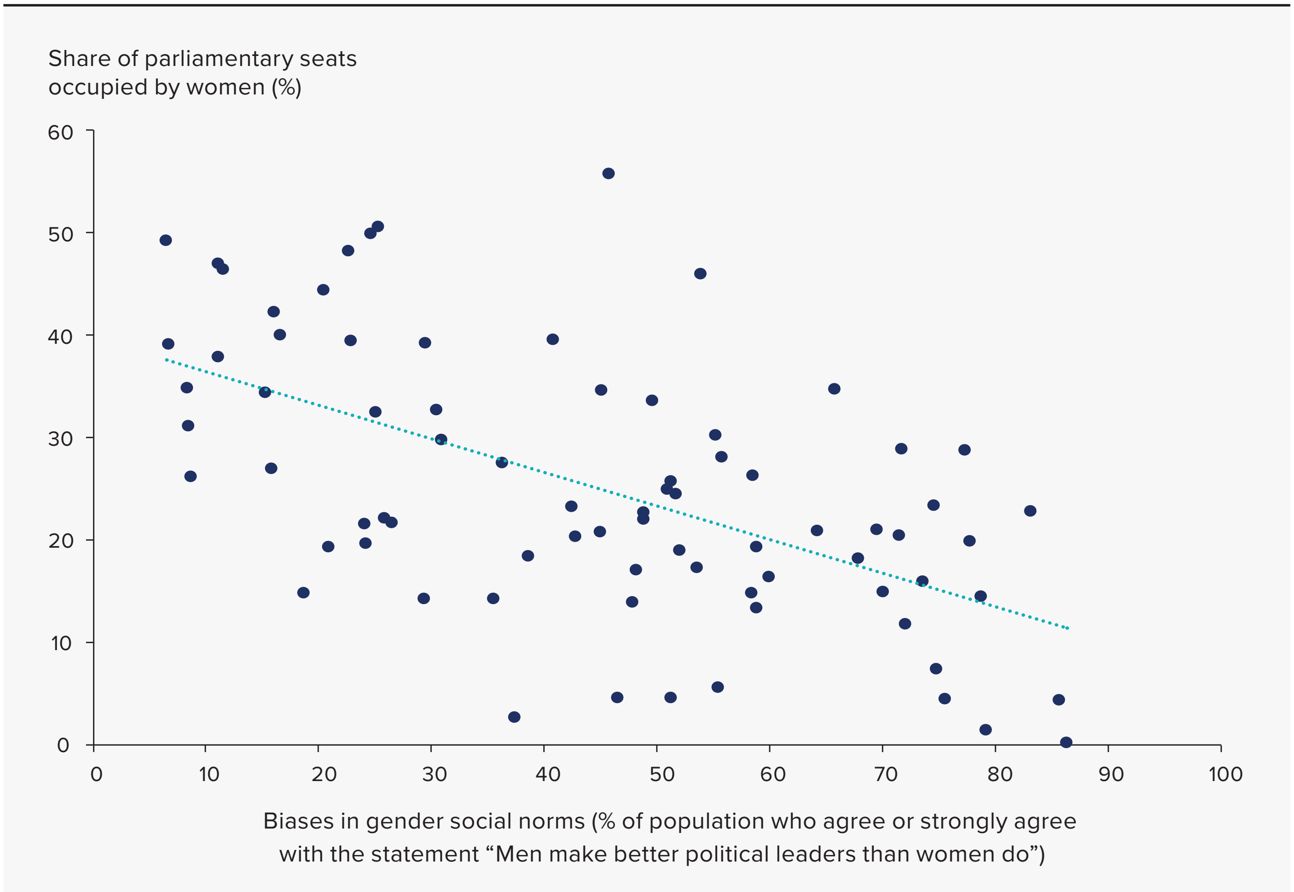
However, the effective agency of women remains restricted in many areas. A notable example is women's access to top political office—the pinnacle of political agency. Women serve as heads of state or heads of government in only about 10 percent of countries, a statistic that has changed little over recent decades.[52]

The UNDP's 2023 Gender Social Norms Index, which treats biases as deviations from global shared standards of gender equality, shows that gender equality is being constrained by biased social norms against women (figure O.9).[53] Almost half of people believe that men make better political leaders than women.[54] And biased norms might be so entrenched that we judge the women who occupy high political offices more harshly. These biases permeate voting booths, interview panels, board meetings and more—all limiting women's agency.

To help narrow agency gaps, institutions need to be people-centred, co-owned and future-oriented. What do these principles mean for existing multilateral institutions?

One proxy for people-centred is human development, which multilateral institutions recognize, at best, in a limited or partial way. Economic performance still dominates the agenda. That's why Beyond GDP, emphasized by UN Secretary-General António Guterres, is so important.[55] Gaps in co-ownership are manifested

Figure O.9 **Gender equality in politics is being constrained by biased social norms against women**



Source: Human Development Report Office based on data from wave 7 (2017–2022) of the World Values Survey (for biases in social norms) and data from the Inter-Parliamentary Union (for the share of parliamentary seats occupied by women in 2021). See also UNDP (2023a).

in the continuation of governance arrangements through written and unwritten rules that reflect a legacy of the distribution of power in the post–World War II world. This extends from the international financial institutions to the United Nations, with several proposals tabled over the years to redress the current lack of representativeness of governance arrangements.[56]

Co-ownership implies a fair distribution of the burden of government action, avoiding inequalities resulting from tax avoidance and evasion. Over the past decade there has been considerable progress in controlling tax evasion, mainly through increased information and transparency around the world.[57] The UN General Assembly has started the process for a Framework Convention on International Tax Cooperation, to facilitate policy coordination on these issues.[58] Global minimum tax rates, such as the minimum effective corporate income tax, do not have to be very large to raise substantial amounts if they are well enforced.[59] Enforcement is largely a policy choice and hinges on international coordination.

Future-oriented means accounting for the way interdependence is being reshaped in the Anthropocene and as a result of the Digital Revolution and finding ways to more systematically, efficiently and equitably providing global public goods.

Towards an agency-centred vision of development

What is development and how is it best pursued? A central question in the postwar era whose answer has changed over time in response to emerging realities. Today, the dynamic interactions between the planetary pressures of the Anthropocene on the one hand and growing inequalities and insecurity on the other are together a gauntlet thrown to all development narratives.

Even to human development.

The first Human Development Report in 1990 proudly proclaimed that "people are the real wealth of a nation." People still are; they always will be. What is the point of development if not for people? Yet, how we talk about and measure people has to go beyond wellbeing achievements, as measured by the Human Development Index and other conventional indicators, to include agency—the unique, limitless capacity for people to form and reform goals, commitments and values; to make reasoned choices that may or may not advance their own wellbeing; and, ultimately, to lead lives with purpose, which may be greater than their individual selves.

Agency has largely been left off development agendas in any explicit sense. And it shows. Agency gaps coincide with worrying trends on democratic norms and practices, polarization and declines in generalized trust and confidence in governments and international institutions. International cooperation itself is becoming more politicized. Our institutions are struggling with an agency gap.

In his landmark *Development as Freedom,* Amartya Sen recasts development as the pursuit of "greater freedom [that] enhances the ability of people to help themselves and also to influence the world [...] The concern here relates to what we may call [...] the 'agency aspect.'"[60]

The 2023/2024 Human Development Report starts to mould what could be called an emancipatory vision for development that shines Sen's notion of development as freedom on the grand challenge of our time: people and planet in joint crisis. This take on development centres the expansion of agency at the intersection of human development, human rights and sustainability. Its goal is the expansion of freedoms in their many forms, including freedom from the tyrannies of single exclusive identities, of zero-sum beliefs and of oversimplified models of behaviour that reduce people to number-crunching narcissists.

Institutions of the 21st century would narrow agency gaps and enlarge, rather than replace, those of the 20th century welfare state. Freedom blossoms into fuller meanings, going beyond the necessary and important "froms"—freedom from fear, from want, from deprivation—to the aspirational and important "ofs"—freedom of self, thought and action, including helpful collective action.

> "States of all political stripes and incomes have the opportunity and obligation to shape agency-centred policies and institutions, anchored in human development and guided by human rights

States of all political stripes and incomes have the opportunity and obligation to shape agency-centred policies and institutions, anchored in human development and guided by human rights, the protection of the planet and institutions that liberate us from dysfunctional stasis, that better respond to and empower people and that free us all from rigid and divisive zero-sum narratives about ourselves and each other. When people feel freer to inhabit multiple, overlapping identities, when reasoned, issue-based dialogue prevails over emotionally charged rhetoric that exploits group-based grievances, when people meet people instead of tweeting at them, then people are more able and likely to pursue their own goals, as well as compromise and cooperate on shared objectives that make their own goals more achievable.

This is the virtuous cycle that an agency-centred vision for development, whose building blocks are outlined in this Report, aspires to. Global gridlock begins to give way to cooperation, including for global public goods, even when diverse preferences persist—and we should expect them to persist. Indeed, differences in what people value is a motivating observation behind human development and, as argued in previous Human Development Reports, diversity in its many forms is essential to navigating novel and interacting layers of uncertainty.

We can do better. We have a lot going for us. Let's get moving.

PART

I

Advancing human development in an interdependent world

CHAPTER

1

Human development suffers when interdependence is mismanaged

Human development suffers when interdependence is mismanaged

Divergence between the very high and the low human development index groups of countries, after decades of convergence, is going up. The path of improvement in the global average human development index has shifted downwards.

Why? Largely because of mismanaging interdependence—as reflected in the inadequate response to the Covid-19 pandemic, in the tentative progress on mitigation of climate change and in the conflagration of violent conflicts, with implications that straddle borders.

The decline in the global Human Development Index (HDI) value in 2020 and 2021 was unprecedented. It reflects irrecoverable losses, including millions of human lives. Even though the global HDI value increased in 2022 and is projected to further increase in 2023, the recovery is projected to be highly unequal: Organisation for Economic Co-operation and Development (OECD) countries are projected to fully recover or surpass their 2019 values, but 51 percent of the poorest countries with 328 million people are not projected to do so.[1]

This chapter considers this unprecedented decline on the HDI and the recovery from the perspective of failures in managing a shared global challenge—a novel virus spilled over borders and along with it the spread of economic hardship and losses in health and education outcomes. The cross-border spillovers mean that, despite humanity's having the capabilities to deal with them, we failed to manage interdependence across countries. Chapter 3 gives an account of how this mismanagement unfolded, where international cooperation faltered, where it succeeded and the reasons why.[2] This chapter shines a spotlight on how mismanaged interdependence harms human development.

The interdependence brought into sharp relief during the Covid-19 pandemic is sometimes described as a shock, an adverse event to recover and move on from, building forward better. Yet, as we move deeper into what the 2021/2022 Human Development Report described as a novel uncertainty complex,[3] patterns of interdependence are being reshaped (chapter 2), and mismanaging them can escalate hypercostly human development crises. The interdependence has several channels. Some relate to the planetary interdependence of the Anthropocene, the age of humans.[4] These include climate change, biodiversity loss, cross-border implications of pollution and new and re-emerging zoonotic diseases that might result in future pandemics. Indeed, July 2023 was the hottest month on record across all world regions.[5] Hot weather and extreme temperatures that endanger human health have already been increasing illnesses and death.[6] During 2023 record-breaking wildfires were observed in Canada[7] and the US state of Hawaii.[8] Torrential rain and floods inundated Libya, Europe and parts of Asia, along with more frequent extreme weather events, such as hurricanes and typhoons.[9] At every corner on Earth, the effects of dangerous planetary change driven by human choices are being felt.

Mismanaged geopolitical tensions, and their manifestation in violent conflicts, harm human development—both for the countries involved in conflicts and often for many others too. Recent conflicts and geopolitical tensions have surged.[10] The impacts of conflicts spill beyond not only geographical boundaries but also generational boundaries, with the wars in Gaza, Ukraine and Yemen reversing human development gains made over generations and curtailing prospects for entire cohorts of young people.[11]

> "The context of novel uncertainty and mismanaged interdependence is reflected in higher global poverty and hunger over the past few years, taking the world farther off course from achieving the Sustainable Development Goals

The context of novel uncertainty and mismanaged interdependence is also reflected in higher global poverty and hunger over the past few years, taking the world farther off course from achieving the Sustainable Development Goals (SDGs).[12] The year 2023 marked the midpoint to 2030, the deadline to meet the goals and targets of the 2030 Agenda for Sustainable Development. Progress has stalled or reversed for 30 percent of the SDG targets and is weak or insufficient for another 50 percent.[13] Beyond setbacks in wellbeing, people are also feeling a sense of loss of agency—the inability to live lives guided by their commitments—a step back from advancing Amartya Sen's notion of "development as freedom."[14] People are often caught up in a context of events that they do not fully understand, or where they seem to have little or no role in shaping, with the consequences borne out in their daily lives.[15] Beyond gaps in wellbeing, there is also an agency gap, which results in part from our collective inability to purposefully guide our actions to manage interdependence.

Building forward weaker? An unequal and incomplete recovery in human development from the 2020–2021 dip

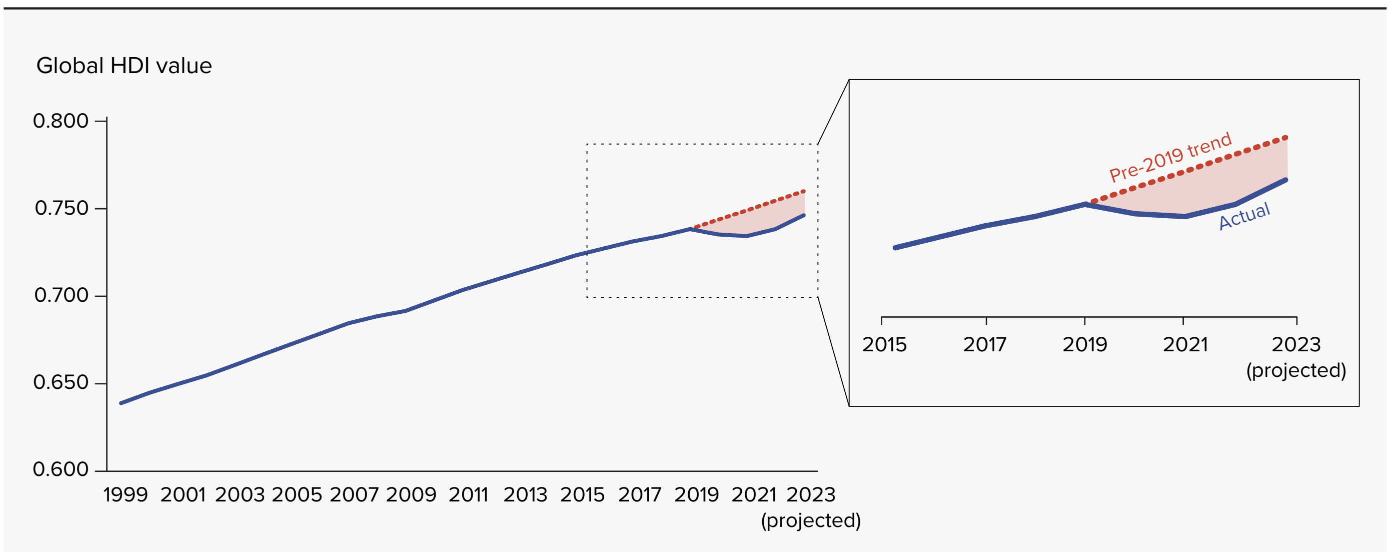
The 2023 global Human Development Index value is projected to recover after the unprecedented drop in 2020–2021. We project that the global HDI value for 2023 was the highest on record, most likely the highest ever, surpassing the 2019 value across all the index components: life expectancy at birth, mean years of schooling, expected years of schooling and gross national income per capita. But this recovery is unequal and incomplete, and the scars from the decline can become permanent if the pre-2019 trend of progress on the HDI remains roughly the same. Already, compared with the pre-2019 trend, there has been a forgone loss on the HDI (figure 1.1).

The turnaround from a declining to an increasing trend on the HDI took place in 2022, but some evidence suggests that we may be building forward weaker for four reasons.

- *First, not every human development loss can be recovered.* The loss of lives—around 15 million[16]—is irreparable, as may be some of the learning that did not happen and the economic projects that did not materialize. This forgone human development loss is represented by the shaded area in figure 1.1: the gap between the actual global HDI value (including the projected value for 2023) and the value in a counterfactual where the pre-2019 trend continues. A loss of this magnitude appears for the first time ever.
- *Second, the recovery is incomplete.* After the decline in 2020–2021, when most countries saw their HDI value fall, the recovery to pre-2019 values has been faltering for a large proportion of countries. For 2023 (with still incomplete data at the country level), we project that more than a quarter of the countries that experienced a setback will have an HDI value below their pre-2019 value. One region, the Arab States, is projected to have not recovered its pre-2019 average HDI value.

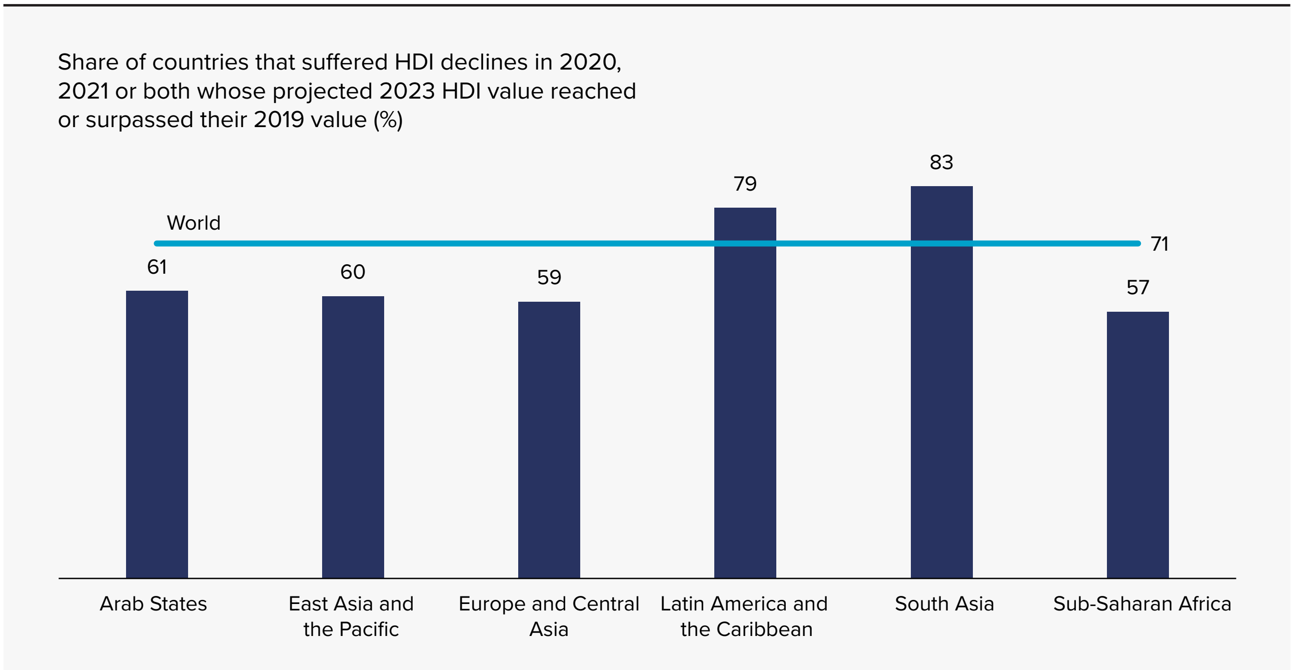
  Recovering in 2023 to the 2019 HDI value is a low bar, which does not account for forgone losses or potential future losses if the HDI path remains below the pre-2019 HDI trend. Among the countries that suffered HDI declines in 2020, 2021 or both, the share of countries worldwide that are projected to reach or surpass their 2019 HDI value in 2023 is just over 70 percent, and the share in most regions (other than Latin America and the Caribbean and South Asia) is projected to be lower (figure 1.2).
- *Third, the recovery has been highly unequal.* For 2023 all OECD countries are projected to have reached or surpassed their pre-2019 HDI values, in contrast to only 49 percent of the Least Developed Countries (LDCs) (figure 1.3).[17] The disparity in recovery is also evident across HDI groups: 48 percent of low HDI countries, compared with 92 percent of very high HDI countries. This highlights the consequences of mismanaging interdependence in exacerbating inequalities in human development.[18]

Figure 1.1 The global Human Development Index (HDI) value is below its pre-2019 trend



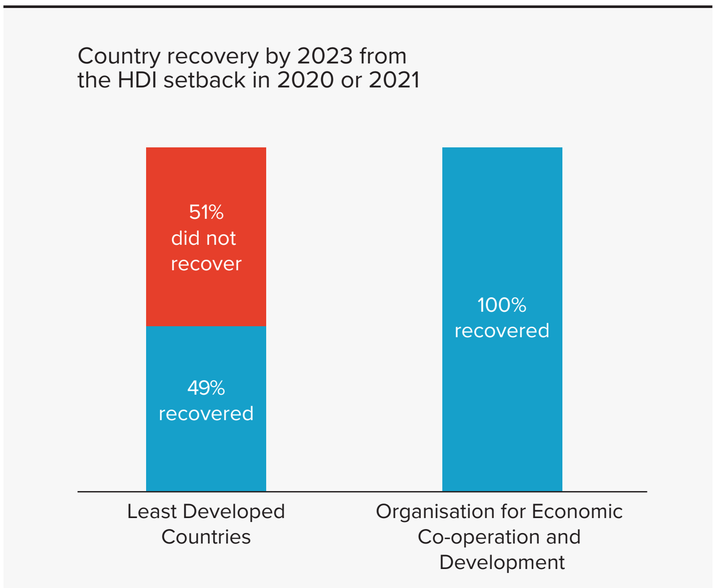
Note: The global HDI value for 2023 is a projection. The pre-2019 trend is based on the evolution of the global HDI value in the previous 20 years.
Source: Human Development Report Office calculations based on data from Barro and Lee (2018), IMF (2023d), UNDESA (2022, 2023), UNESCO Institute for Statistics (2023), United Nations Statistics Division (2023) and World Bank (2023).

Figure 1.2 The recovery in Human Development Index (HDI) values is incomplete



Note: Recovery means that countries that suffered a decline in HDI value in 2020 or 2021 are projected to reach or surpass their pre-decline HDI value by 2023.
Source: Human Development Report Office calculations based on data from Barro and Lee (2018), IMF (2023d), UNDESA (2022, 2023), UNESCO Institute for Statistics (2023), United Nations Statistics Division (2023) and World Bank (2023).

Figure 1.3 The recovery in Human Development Index (HDI) values is projected to be highly unequal



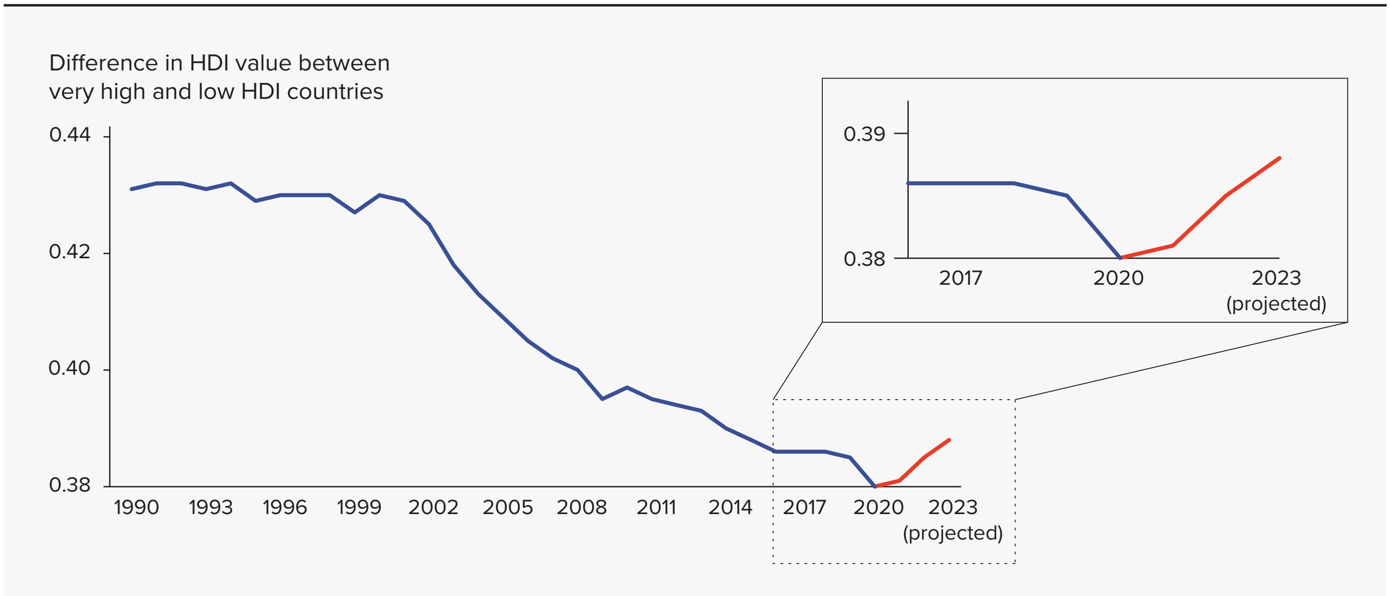
Note: Least Developed Countries have low levels of income and face vulnerabilities that make them "the poorest and weakest segment" of the international community (https://www.un.org/ohrlls/content/about-least-developed-countries). Recovery means that countries that suffered a decline in HDI value in 2020 or 2021 are projected to reach or surpass their pre-decline HDI value by 2023.
Source: Human Development Report Office calculations based on data from Barro and Lee (2018), IMF (2023d), UNDESA (2022, 2023), UNESCO Institute for Statistics (2023), United Nations Statistics Division (2023) and World Bank (2023).

As a result of these unequal recovery patterns, there has been a rebound in between-country inequality in human development (measured as the distance between the HDI values of the very high HDI group and the low HDI group) since 2019, interrupting two decades of convergence (figure 1.4).

- *Fourth, some of the losses from the HDI dip could become permanent.* The world has likely shifted to a lower HDI path, if the future HDI evolution stays below the pre-2019 trend. Based on the trend during 1999–2019, the global HDI value was on track to cross the threshold defining very high human development (a value of 0.800) by 2030—coinciding with the deadline to meet the SDGs. Now, the world is projected to be off track. Indeed, every region is projected to fall below its pre-2019 path in 2023 (figure 1.5).

The path dependence of GDP trends on its history of shocks (hysteresis) has been widely studied in recent years.[19] Unlike the assumption that there is a rebound that brings things back to (or even better than) what they were before an economic downturn, shocks are often found to leave long-term, potentially permanent scars.[20] This in part is because economic recessions affect the supply side of the economy,

Figure 1.4 **Low Human Development Index (HDI) countries have been left behind**



Note: The difference in HDI values for 2023 is based on projections.
Source: Human Development Report Office calculations based on data from Barro and Lee (2018), IMF (2023d), UNDESA (2022, 2023), UNESCO Institute for Statistics (2023), United Nations Statistics Division (2023) and World Bank (2023).

which is associated with long-term productive capabilities. Shocks, even if transitory, can affect the economic conditions in employment,[21] investment in research and development,[22] human capital,[23] productivity and long-term economic growth.[24]

Before 2019 there was clear evidence that different shocks—financial, political and environmental—had noticeable and often long-lasting effects on human development, including on the HDI.[25] But these effects did not shift the overall global HDI trend,[26] which persisted despite declines in some countries in some years.[27] For the first time ever the global HDI trend shifted downwards and is now improving in parallel but below the pre-2019 trend (giving a glimpse of what a future of recurrent crises and recoveries in human development would look like[28]), with the potential for hysteresis as a novel feature requiring further analysis.[29]

Hysteresis in human development can manifest through various channels, extending beyond the standard components of the HDI. Multiple examples of recent shocks have both transitory manifestations and more permanent consequences for people's lives, documented in the next section. These include recent assessments of students' learning outcomes, which are at a historic low according to the Programme for International Student Assessment (PISA);[30] reports of long-lasting mental health problems; and the exceptionally high debt burden of many governments, limiting their ability to invest in their future and run social programmes.

Finally, it is essential to see the trend of unprecedented changes on the HDI in a broader perspective. The shocks of recent years, with their transitory and permanent effects, took place in a world already under stress. In 2019 numerous social protests were recorded globally.[31] The sense of dissatisfaction, which is multicausal, has been the subject of recent Human Development Reports. The 2019 Human Development Report warned about emerging widespread inequalities in capabilities becoming more relevant in the 21st century. The 2020 Human Development Report underscored how the effects of the Anthropocene are becoming increasingly important in people's lives. The 2022 Special Report on Human Security documented that, even before the Covid-19 pandemic, 6 in 7 people were feeling insecure, alongside rising trends in conflicts and conflict-affected populations. The 2021/2022 Human Development Report discussed the twin trends of people's unsettledness and political polarization, already visible in the previous decade. Even without the 2020–2021

Figure 1.5 Each developing region's projected 2023 Human Development Index value is below its pre-2019 trend

Note: Human Development Index values for 2023 are projections. The pre-2019 trends are based on the evolution of each region's HDI in the previous 20 years.
Source: Human Development Report Office calculations based on data from Barro and Lee (2018), IMF (2023d), UNDESA (2022, 2023), UNESCO Institute for Statistics (2023), United Nations Statistics Division (2023) and World Bank (2023).

dip on the HDI, there was no room for complacency. None of these challenges—all human-made and all expressions of our interdependence—has disappeared. But they are compounded when we fail to manage interdependence.

Mismanaging interdependence imposes costs on human development

The experience with the Covid-19 pandemic tells a story of how, despite many warnings, the world underinvested in pandemic preparedness and mismanaged its response after the outbreak. The pandemic led to around 15 million deaths[32]—more than recent epidemics, including the Asian Flu, Hong Kong Flu, Swine Flu, SARS, MERS and Ebola, combined.[33] The Covid-19 pandemic not only reduced life expectancy at birth in most countries but also impaired the other components of the HDI, interrupting access to education and leaving enduring marks on the economy.

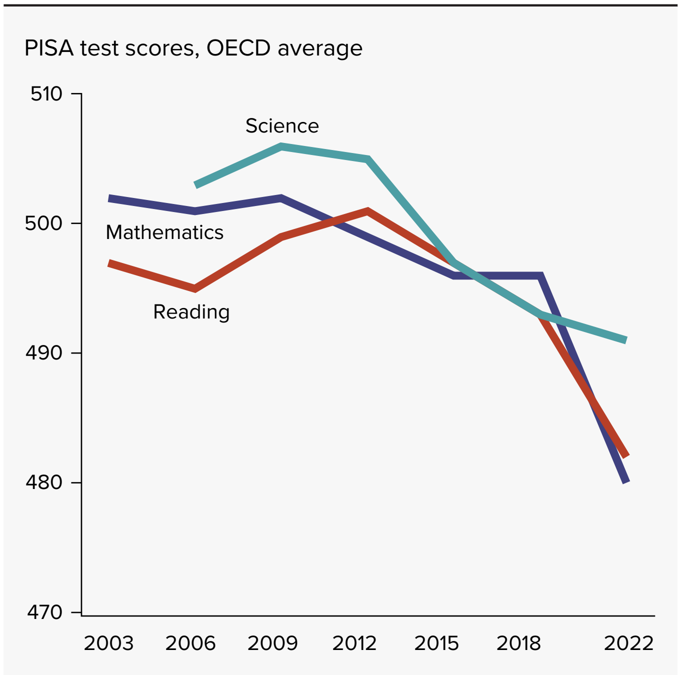
Beyond the direct impacts of the Covid-19 pandemic, the indirect impacts on health were profound. As healthcare professionals turned to assist Covid-19 patients, in-person visits declined drastically for non-Covid-19 patients, including those with acute needs, such as patients with cardiovascular disease, kidney disorders, alcohol abuse and mental health conditions.[34] Routine and emergency visits fell drastically when the lockdowns started, with potential consequences for long-term health, including increased illness and death.[35]

People suffered further from increased mental health burdens due to loneliness and domestic abuse, among others.[36] Globally, the Covid-19 pandemic led to a 28 percent increase in major depressive disorder cases and a 26 percent rise in anxiety disorder cases in 2020.[37] This escalation in mental health disorders was observed across all demographic groups. However, there was evidence of a more pronounced increase in prevalence among women and younger people.[38] Students suffered from higher anxiety, fear and grief due to prolonged social isolation and disrupted routines with school closures.[39] Particularly affected were children with pre-existing mental health conditions, such as depression, as well as those with special needs.[40]

There is concern that the surge in mental health disorders might be long-lasting. For example, a series of 11 longitudinal studies in the United Kingdom indicated that "the substantial deterioration in mental health seen in the UK during the first lockdown did not reverse when lockdown lifted, and a sustained worsening was observed across the pandemic period."[41] Another longitudinal study in Germany focusing on young people revealed that mental health markers significantly worsened during the Covid-19 pandemic and only partially returned to prepandemic values afterward.[42]

Similarly, following extended school closures during the Covid-19 pandemic, there is emerging evidence of lasting effects on learning.[43] The pandemic eroded the accumulation of human capital at critical moments of the lifecycle and has particularly affected people under age 25, who will compose 90 percent of the prime-age workforce in 2050.[44] Between 2018 and 2022 PISA scores made the sharpest declines ever, with average scores in OECD countries falling by 15 percentage points in mathematics and 10 percentage points in reading (figure 1.6).[45] US national grade assessments show that two decades of progress were wiped out by the pandemic.[46] It may take 28 years for 8th grade students to return to prepandemic attainment in mathematics and 22 years for 4th

Figure 1.6 Unprecedented declines in learning outcomes, as measured by PISA test scores



PISA is Programme for International Student Assessment. OECD is Organisation for Economic Co-operation and Development.
Source: OECD 2023.

grade students to return to prepandemic attainment in reading.[47] Such learning delays will further cost the global economy about $1.6 trillion a year by 2040, or 0.9 percent of global GDP.[48] Impacts on learning varied extensively across the world, with some regions further behind than others, particularly where school closures were longer.[49]

The Covid-19 pandemic led the world into the greatest recession at least since World War II.[50] Global output fell as much as three times more than it did during the 2007–2008 global financial crisis and happened far more abruptly, as economic activities came to a sudden halt with the onset of the pandemic.[51] Global unemployment rates have not yet returned to prepandemic levels, and more workers have been pushed to the informal sector.[52] Women, particularly those in service industries and with less education, were more likely than men to exit the labour force during the pandemic in many countries.[53] For example, unlike other recessions in the United States, where men's employment varied more along the business cycle, women, particularly those with children, were more penalized than men in the pandemic recession.[54] Part of this was driven by social expectations of women's obligation towards childcare during school closures.[55] Among those able to stay employed (mostly those with higher education and the ability to telecommute), the real challenge was managing both childcare and work, increasing everyday workload and stress.[56]

After the sharp contraction in 2020, the global economy is expanding again: average income per person is projected to be more than 5 percent higher in 2023 than in 2019.[57] But the economic costs are lasting. During the Covid-19 pandemic governments implemented sizeable emergency programmes in a context of declining fiscal revenue due to limited economic activity. Advanced economies used a range of fiscal and monetary policies to respond to the health emergency, along with unprecedented support to retain livelihoods, employment, consumption and people's homes. Many emerging economies struggled to provide adequate social safety net support to combat the pandemic under a tight fiscal space and plunged into debt distress.[58] In both cases this countercyclical policy resulted in substantial accumulation of public debt, already trending up in previous years.[59] Now countries are facing tradeoffs between servicing their debt or financing social policies: "3.3 billion people live in countries that spend more on interest payments than on education or health,"[60] a dynamic that might result in higher poverty[61] and lower human development. Indeed, in 24 of the 51 most debt-vulnerable economies identified by the United Nations Development Programme (UNDP), HDI values are not projected to recover in 2023 from the 2020–2021 dip.[62]

Mismanaging interdependence as reflected in intensifying conflicts, nearly everywhere

> "Our world is becoming unhinged. Geopolitical tensions are rising. Global challenges are mounting. And we seem incapable of coming together to respond. We confront a host of existential threats—from the climate crisis to disruptive technologies—and we do so at a time of chaotic transition."
>
> —UN Secretary-General António Guterres[63]

Recent outbreaks of violent conflicts in different parts of the world, and their escalation towards longer term and potentially larger scale conflicts, signal a resurgence of threats to global peace and stability that are spilling over across countries. Large-scale conflicts involving major powers are escalating for the first time since the end of the Cold War. In 2022, even before the escalation of conflicts in the Middle East and African regions, 1.2 billion people (15 percent of the world's population) were affected by conflicts in their vicinity.[64] These dramatic—and dangerous—shifts in global stability and security have major repercussions over time and across borders.

The intensification of conflicts, and the involvement of major powers, is momentous not only for countries involved in direct conflicts but for all. Both violence and peacefulness can be contagious.[65] Conflicts often change the perception of wars (making them appear more acceptable), increasing the propensity for violent outbreaks elsewhere.[66] There is overwhelming evidence of cross-national contagion of major politically disruptive events.[67] Conflicts and their implications often spill over to neighbouring countries, augmenting impacts and risks.[68] The spread of domestic conflicts to regional conflicts, and the subsequent political and economic implications across the world, points to the critical need to contain conflicts and mitigate overall effects. Conflicts also increase propensity for militarization.[69] Global military spending has been on an upward trend and for the first time surpassed $2 trillion in 2019.[70]

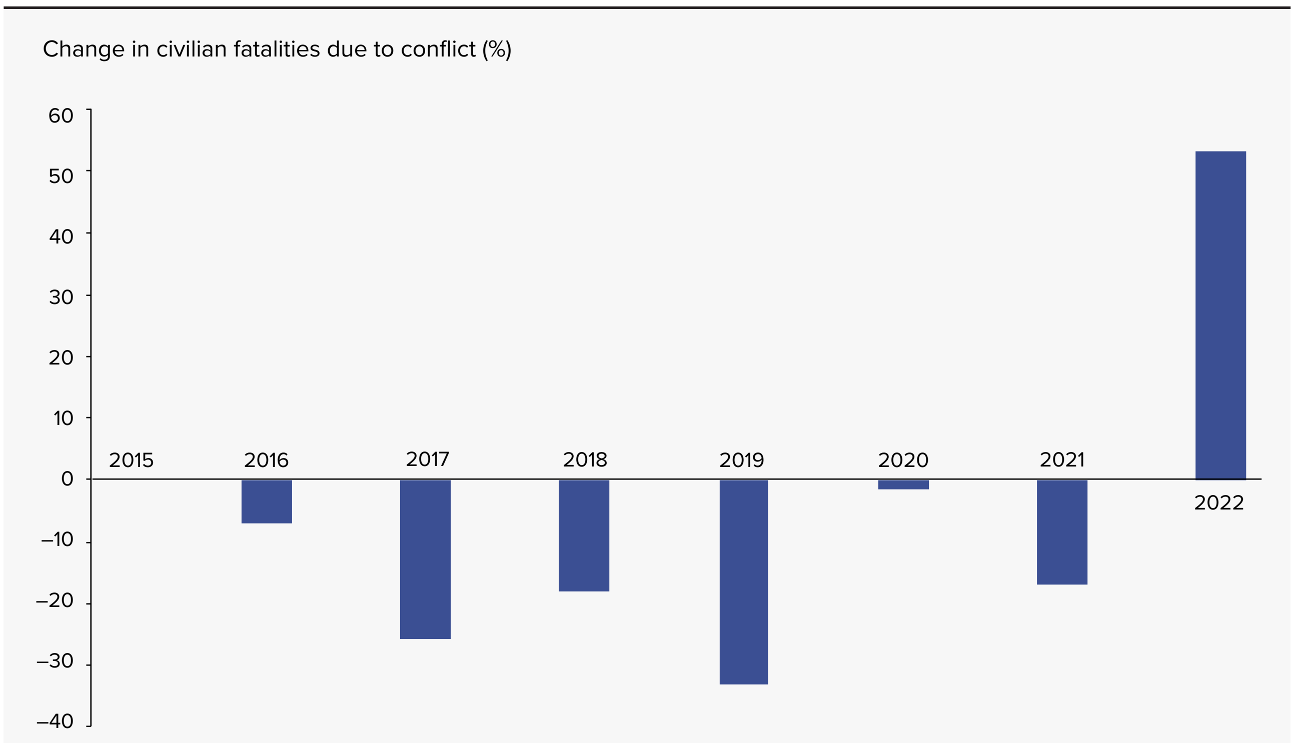
The implications for human development are staggering. The year 2022 saw the highest number of battle-related deaths in generations.[71] It registered the highest number of state-based armed conflicts since World War II[72] and a growing share of one-sided conflicts where unarmed civil populations were being attacked.[73] War fatalities are growing at an alarming rate, including those borne by civilians (figure 1.7).[74] Armed conflicts are pushing millions of people into forced displacement.

Over the past decade the number of countries involved in conflicts outside their own borders has been rising, demonstrating how geopolitical interdependence plays out. Of the 55 state-based conflicts in 2022, 22 were internationalized,[75] compared with 4 of 37 civil conflicts in 2000[76]—a more than fivefold increase. While countries depend on each other to break out of conflicts and move towards long-term peace agreements, it is not evident that foreign involvement helps achieve such objectives any faster. Instead, the proliferation of actors and conflicting motives—along with the risks of added military and funding, as well as perceptions of external support—have made conflicts more difficult to resolve.[77] External involvement often leads to deadlier outcomes by prolonging the duration of conflicts and increasing the number of casualties.[78] Conflicts are also intensified by nonstate actors, leading to more violent outcomes.[79]

Interdependence continues to be relevant before, during and after conflicts, and its mismanagement amplifies the overall impacts. Emerging from conflicts, persecution and human rights violations, the number of people forced to flee their homes reached 108 million, the highest level since World War II and two and a half times the number in 2010 (figure 1.8).[80] And this does not include the latest displacements—Palestinians in Gaza and the Armenia refugee crisis, among others. One in five children globally lives in or is fleeing conflict.[81]

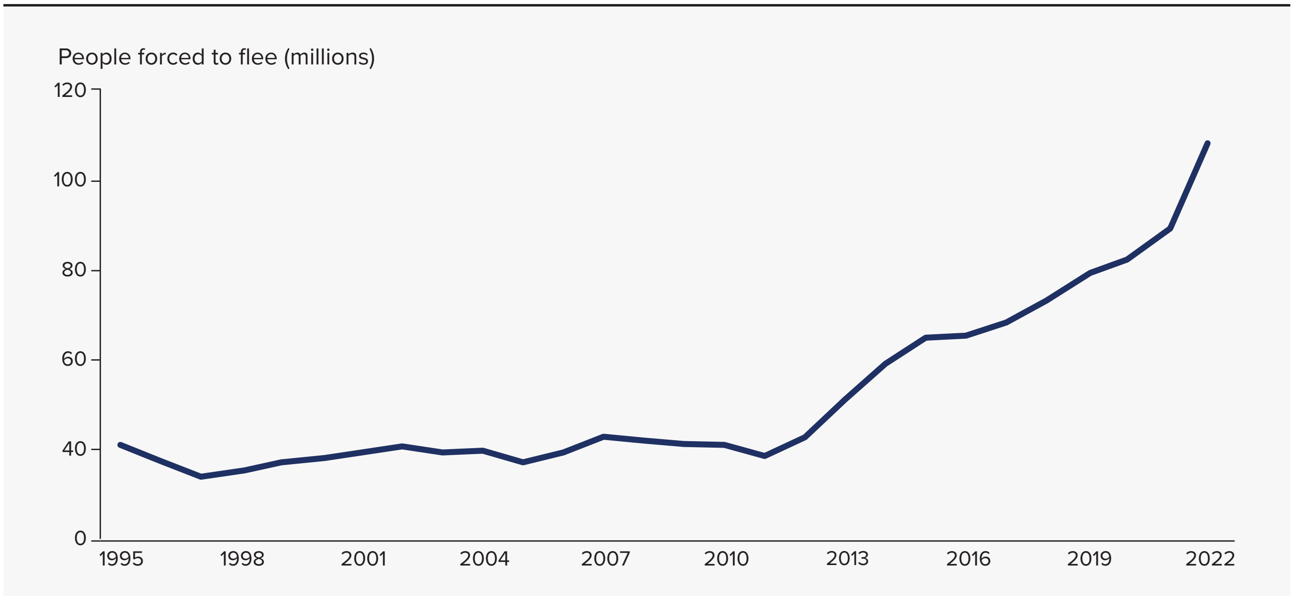
Forcibly displaced people (more than half of whom are internally displaced)—particularly those with acute needs, including pregnant women, the elderly, the very young, people with disabilities and people with chronic diseases—often face acute shortages of food,

Figure 1.7 Civilian fatalities as a result of conflict are surging after years of declining



Source: Uppsala Conflict Data Program 2023.

Figure 1.8 People forced to flee their homes trending upwards towards record levels



Note: People forced to flee include internally displaced people, refugees under the mandate of the United Nations High Commissioner for Refugees (UNHCR), Palestinian refugees under UNHCR's mandate, asylum seekers and other people in need of international protection.
Source: UNHCR 2023c.

clean water, medicine, electricity and basic means for survival.[82] Millions of people, including children, who have been forced to flee their homes due to no fault of their own could live a life of dignity if countries (involved or not involved in conflicts) could find mutually agreeable solutions for displaced people.[83] These issues come at a time of heightened hostility towards refugees, particularly in high-income countries, where the public discourse on refugees has become more polarized.[84] Some 80 percent of the world's refugees are hosted in mostly low- and middle-income countries.[85]

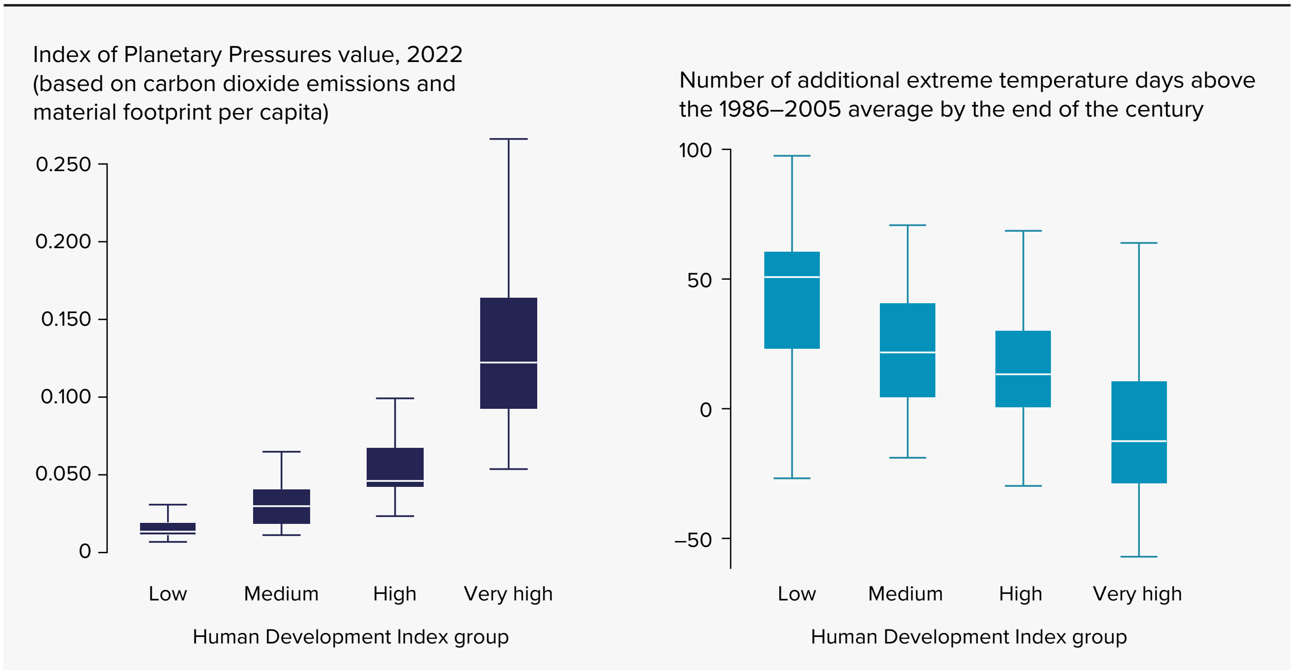
In 2024 the number of people in need of humanitarian aid is expected to reach 300 million.[86] Concurrent increases in funding are not commensurate with the sharp increases in humanitarian aid needed. Drought on top of rising conflicts is escalating risks of food insecurity and disease outbreaks in many countries.[87]

Climate change: Causes and human development costs of mismanaged interdependence

Greenhouse gas emissions, the leading factor behind climate change, result from multiple human activities.[88] There is a double decoupling between those responsible for emissions and those affected by the consequences of climate change. The first decoupling is temporal: the activities producing emissions today have their main positive impacts on the current generation, while the costs are borne by future generations. The second decoupling is geographic: the places that historically have benefited from emissions are likely to receive a lower burden of the expected costs. For instance, very high HDI countries have higher average carbon dioxide emissions but are expected to have a smaller proportion of extreme temperature days by the end of the 21st century (figure 1.9).

Recognizing the need to manage interdependence is key as climate change mitigation is pursued. For instance, as national environmental regulations become more stringent in some places, economic activity in those countries may face incentives to shift carbon-intensive production to locations where regulations are not as stringent. Businesses often take advantage of trade to overcome environmental regulations at home. A country committed to reducing emissions will have 8 percent higher sector carbon imports from countries that have not committed to carbon emissions reductions than if it had no commitments, thereby simply changing the sourcing of consumption of their carbon-intensive goods.[89] Carbon offshoring (relocating carbon-intensive production to regions with low carbon standards) and leakages offset domestic emissions savings and may

Figure 1.9 Planetary pressures are decoupled from their geographic and temporal effects



Note: The Index of Planetary Pressures is constructed using the per capita levels of carbon dioxide emissions and material footprint in each country (it is 1 minus the adjustment factor for planetary pressures presented in table 7 in the *Statistical Annex*). Extreme days by the end of the century are based on the very high emissions scenario. Each box plots the middle 50 percent of the distribution; the central line is the median. Outside the box the extreme lines are the approximate minimum and maximum of the distribution. Outliers are not shown.
Source: Human Development Report Office based on Carleton and others (2022) and UNDP (2020b).

even lead to higher worldwide emissions. Environmental policies that ignore the possible impacts on trade could have unintended consequences.[90]

The human development costs of mismanaging interdependence associated with climate change are expected to be high and growing. Leading up to a decade of increasingly higher temperatures, 2023 has been the hottest ever—at least since 1880, when global temperatures were first recorded.[91] At the time of writing, the threshold of 2°C above preindustrial levels was passed for the first time in a single day.[92]

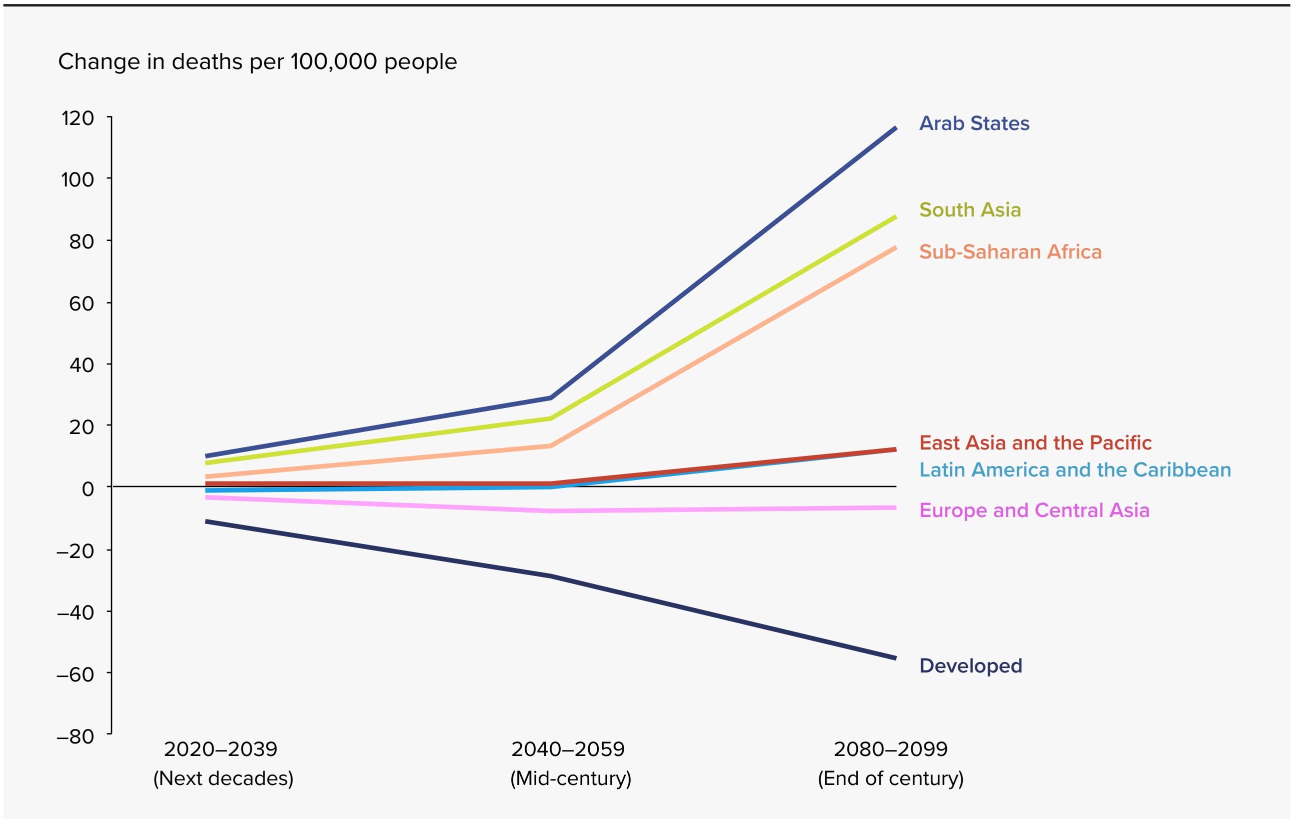
Projections from the UNDP Human Climate Horizons platform show that if we continue on the current path of intense planetary pressures, climate change will have devastating—and highly unequal—impacts on human development. Even with moderate mitigation, almost 40 million people are expected to die because of higher temperatures from now to the end of the century. In a scenario of very high emissions, the death toll could surpass 190 million people.[93] Moreover, the impacts are highly unequal. Climate change can result in an explosion of inequalities in human development, with the Arab States, South Asia and Sub-Saharan Africa regions expected to see sharp increases in death rates (figure 1.10).[94]

The effects of climate change are multidimensional. For example, the global mean sea level has already risen by 23 centimetres since the late 19th century. Even under a moderate emissions scenario, sea levels will continue to rise by 40.7 centimetres by century's end. Sea level rise implies greater risk for permanent land inundation and extreme flooding. Coastal zones are among the world's most densely populated areas and will be hit disproportionately.[95] For some small island developing states, already vulnerable to climate change impacts because of their geographic location and their relative lack of resources to invest in adaptation, the share of the population living in 1-in-20 year floodplains may triple by century's end.[96]

Prospects for advancing agency and wellbeing will be shaped by the management of interdependence

At the midpoint to 2030, the target date to meet the SDGs, the world is more off track than four years ago[97]

Figure 1.10 **Climate change could result in an explosion of inequalities in human development**



Note: Very high emissions scenario.
Source: Human Development Report Office based on Carleton and others (2022) and Human Climate Horizons (https://horizons.hdr.undp.org/).

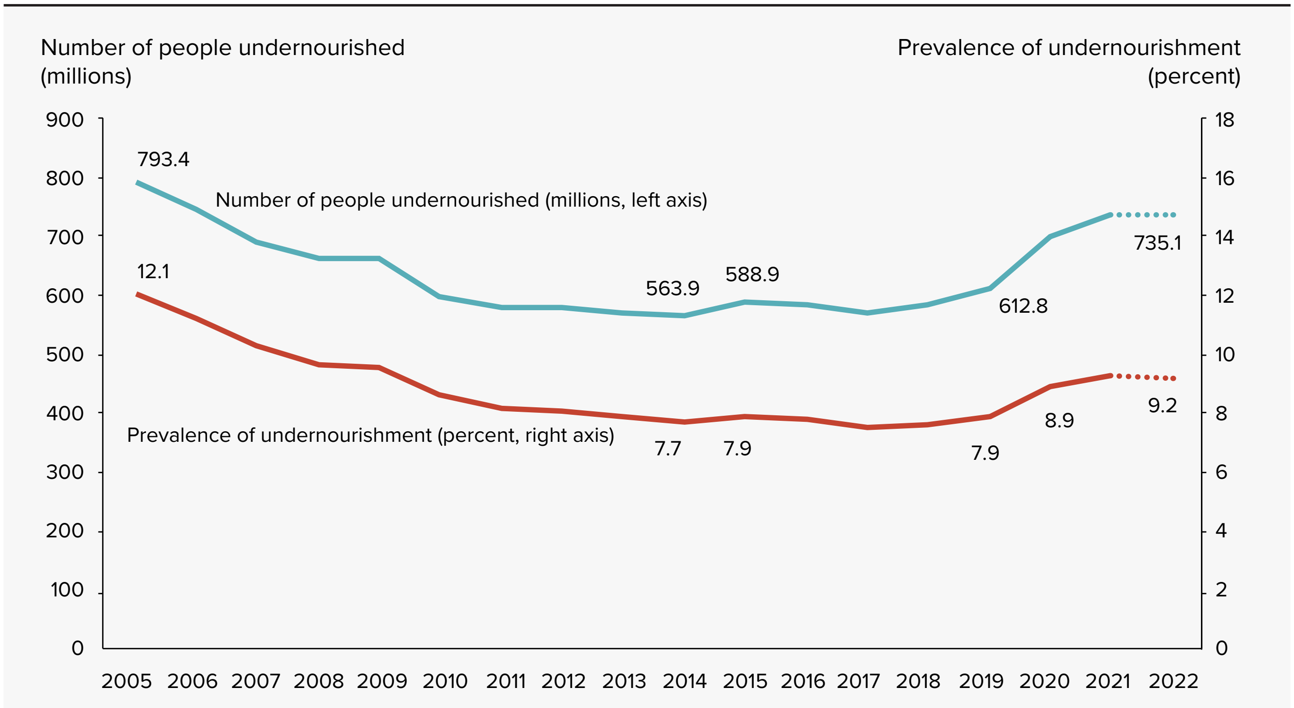
and is regressing on key goals on climate action, biodiversity loss, food security, poverty, inequality and gender inequality.[98] Consider hunger.[99] The number of people who are hungry stopped falling in the late 2000s and, after a decade of stagnation, has climbed back up (figure 1.11).

The Covid-19 pandemic delivered the largest setbacks to monetary poverty in decades.[100] For the first time in two decades, poverty trends reversed. This is true for the extreme poverty line ($2.15 a day) and for the low-income ($3.65 a day) and middle-income ($6.85 a day) poverty lines.[101] In 2020, 90 million more people were in extreme poverty relative to the pre-Covid-19 projection.[102] Household surveys during the pandemic found that 23 percent of respondents stopped working, and 60 percent lost income.[103] These setbacks are likely to have permanently shifted the long-term trajectory for poverty reduction, setting the world farther off course from meeting the SDGs (figure 1.12). Only a third of countries are expected to meet SDG 1 by 2030.[104] The poorest also suffered the severest setbacks in health and education, including premature mortality and lasting losses in learning.[105]

Global income inequality[106] has also worsened over the past decade, returning to the same level as in the 1950s.[107] Between-country income inequality had been falling, as low- and middle-income countries caught up to high-income countries, but the Covid-19 pandemic reversed that for many countries.[108] Within-country income inequality has been rising in many countries, exacerbated by the pandemic, as the poorest households generally lost jobs and income at higher rates than richer households.[109] Inequality of income and wealth is not inevitable—it is a political choice.[110] Understanding the drivers of within-country inequality, against the backdrop of how we manage interdependence, is at the heart of the policy discourse on inequality today.

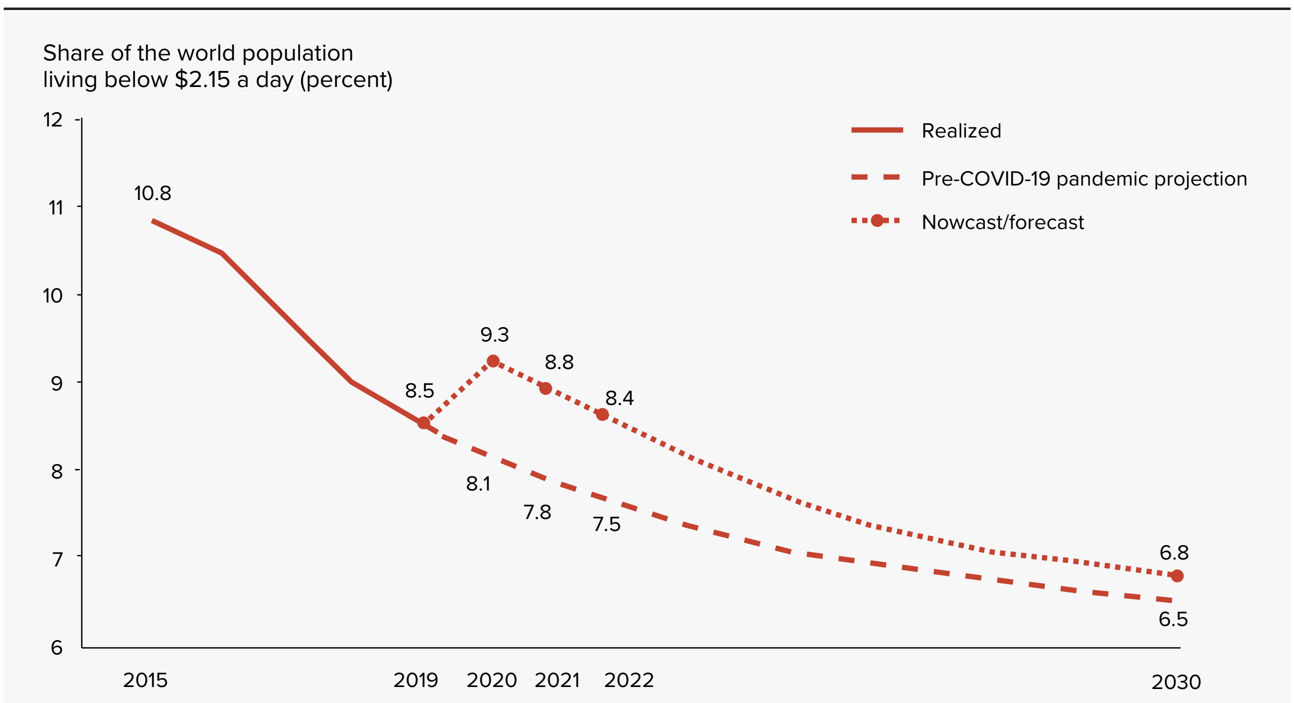
A backlash against gender equality in different parts of the world has stalled its progress in many places.[111] Women's civil liberties and political and economic freedoms are being reversed in many contexts;

Figure 1.11 **Trends in reducing global hunger have reversed**



Note: Data for 2022 are projections.
Source: FAO and others 2023.

Figure 1.12 **The Covid-19 pandemic may have permanently shifted the trajectory for poverty reduction**



Source: UN 2023c.

on current trends it will take 40 more years for men and women to be represented equally as leaders in national issues.[112] The reversal of various social and developmental indicators coincides with the erosion of several democratic norms and practices,[113] spurred in part by dissatisfaction with mismanaged interdependence (chapter 2).[114]

There is interdependence between countries but also interlinkages across challenges. For example, acute pressures from environmental change, exacerbating water stress and food insecurity, can fuel tensions and conflicts, undermining peace and stability and worsening outcomes for communities. By 2030 up to two-thirds of the world's extreme poor could be living in conflict and fragile settings.[115]

“While there is evidence that interdependence can expand agency, there is also evidence that its mismanagement can pull in the other direction

The human development approach is highly relevant to understand the implications of mismanaged interdependence for agency (chapter 5). A person who acts and brings about change is an agent, and agency refers to the ability of people to live lives they value and have reason to value. For example, journalists who consider it their duty to bring truthful, unbiased information to the public and who are able to work without fear of retaliation or concern for their personal security will be better off in a social and political context that guards these individual freedoms than in a context that inhibits it. In a world moving towards increased political polarization (chapters 2 and 6),[116] and where freedom of speech is on the decline,[117] people's agency is being conditioned in new ways.

Amartya Sen's *Development as Freedom* characterizes development as the expansion of people's freedom in a variety of ways (comprising both process and opportunity freedoms), with capabilities (related both to wellbeing and to agency) shaping public policy and with public policy having the potential to enhance those capabilities—in a potential virtuous cycle.[118] How we choose to manage interdependence has a bearing on whether such a virtuous cycle takes hold.

While there is evidence that interdependence can expand agency, there is also evidence that its mismanagement can pull in the other direction. Recent patterns of mismanaging interdependence have had detrimental effects on people's rights, income and wellbeing, affecting their political preferences and choices (chapter 2). For example, democratic norms and practices have eroded to levels last seen in 1986, measured across 202 countries.[119]

Further, the last 20 years saw a deterioration in freedom of expression (figure 1.13). Oppression against journalists, writers, activists and artists are documented across all world regions and is on the rise. Some 85 percent of the global population experienced a decline in press freedom in their country between 2016 and 2020.[120] Lack of independent media is amplifying prejudice and divide, depriving public debates of impartial views in a context of heightened polarization.

And further still, people's mental wellbeing has been worsening. In the last 10 years the number of people expressing stress, sadness, anxiety, anger or worry has been on the rise, reaching its highest levels since the Gallup surveys began.[121] Paradoxically, this coincides with a time of high material wellbeing, unprecedented progress in technology and higher human development than ever.

The adverse impacts have been worse for specific communities. For example, Indigenous communities face a confluence of changes through mismanaged interdependence. Indigenous peoples faced many instances of land dispossessions and loss of natural resources for centuries for various industrial and infrastructural developments such as mines and dams.[122] For example, 90 percent of the languages spoken in the world, a large majority of them spoken by Indigenous peoples, are expected to become extinct in a hundred years.[123]

Consider people living on islands confronting the existential threat of rising sea levels.[124] A likely future when their way of life and land will no longer be there creates a sense of helplessness. In Kiribati and Tuvalu, where the mainland may be underwater in 50–100 years, there are opportunities to move to neighbouring countries, but many islanders think of relocation as the last resort.[125] Leaders argue that relocating people is self-defeating—it defies the point of acknowledging what is happening to the world. Elders do not want to move because of their connection to their homeland and traditions. A body of work is documenting eco-anxiety—a generalized sense of

Figure 1.13 **Freedom of expression—receding in recent years**

Note: Data are population-weighted global averages.
Source: Human Development Report Office calculations based on data from the Varieties of Democracy project and the World Bank's World Development Indicators database.

loss that the ecological foundations of existence are under collapse.[126] This new strand of work deals with topics not normally dealt with by the disasters literature.[127] It delves into understanding generalized feelings about climate change in the abstract (the thought that humanity is doomed).[128] And it presents environmental loss as disappearing landscapes and biodiversity. These feelings relate to existential threats, loss of identity, ways of life and place, and anticipated and perceived future disasters. They create an overwhelming sense of responsibility to deal with something so huge that it feels paralysing—a loss of agency. Young people around the world express distress from the inability to respond to events around them or contribute to change, in what they view as collective inaction. That makes it difficult for them to find meaning in other life pursuits, such as investing in their schooling or having a child.[129]

This sense of loss of agency in the face of climate change is being studied by sociologists keen to understand whether the heightened crisis and uncertainties could be an opportunity for change and transformation.[130] This is a manifestation of agency gaps that stand in the way of advancing collective action (chapter 5).

Uncertainty, institutional structures and misaligned incentives impair agency. Higher perceived human insecurity is associated with lower agency.[131] And constrained agency is reflected in the growing gap between science-based recommendations for ensuring sustainable wellbeing for all and actual actions on the ground. "Constrained agency perpetuates unsustainability, reduces the richness of values and aspirations and creates an illusionary contradiction between development and sustainability."[132] These circumstances further diminish people's role as agents, making collective action even more difficult.

Despite the challenges, some sociologists argue that agency can actively shape Earth systems[133] and that agency can drive large-scale societal change.[134] Consider the study of conceptualizing new ways for transnational climate governance that is slowly taking shape.[135] This work tries to understand how to activate agency beyond national boundaries to move objectives of public interest at the planetary scale.[136]

How to manage interdependence is a choice. Interdependence multiplies the benefits of shared knowledge and cooperation as reflected in advances in medicine, climate adaptation, poverty reduction, energy transitions and more. As explored in chapters 3 and 4, the eradication of smallpox, the Montreal Protocol, interventions for AIDS[137] and fiscal responses during the Covid-19 pandemic[138] exemplify momentous achievements against what otherwise would have been an even more massive downturn in human development. The rest of part I of the Report discusses how interdependence is being reshaped (chapter 2) and what instruments could be used to manage interdependence better (chapter 3). Part II then explores how to reimagine cooperation to advance human development.

CHAPTER

2

Global interdependence persists—but is being reshaped

Global interdependence persists—but is being reshaped

People continue to live in globally interdependent societies. Despite a slowdown in economic globalization, interdependence—rather than fraying—is being reconfigured by drivers that will persist well into the future.

The dangerous planetary changes of the Anthropocene—pandemics, climate change, biodiversity loss—transcend borders, all while advances in digital technologies shift economic structures and drive ever higher cross-border information flows.

Going forward, as societies become more linked in multiple ways, collective action to address globally shared challenges will be imperative to safeguard human security and advance human development.

We live in a hyperconnected world. The supply chain disruptions and inflation in the aftermath of the Covid-19 pandemic put in sharp relief global economic interdependence and the attendant vulnerabilities.[1] Concerns about the unequal distribution of the benefits of interdependence across and within countries—and the risks arising from underregulated cross-border financial and trade flows—are not new.[2] A slowdown of international trade followed the realization of several of those risks during the 2007–2008 global financial crisis,[3] and after the Covid-19 pandemic—leading some to proclaim the end of globalization.[4] Compounded by resurgent conflicts, rising geopolitical tensions and deadlocks in some multilateral institutions,[5] the ties that bind us appear to be under strain and even in retreat.

Yet this chapter argues that interdependence, rather than fraying, is being reshaped and in some respects is deepening—in part because of drivers that will persist well into the future. Three main arguments emerge.

First, beyond economic ties, cross-border flows of people, information and ideas across countries remain high[6] and make interdependence a defining feature of our time.[7] While interdependence can create economic and other opportunities for people and help attenuate the impacts of local and regional shocks,[8] it also implies that new vulnerabilities may emerge and that shocks can propagate globally.[9] Vulnerabilities and propagation of shocks are not an inescapable feature of interdependence; rather they reflect excessively unregulated approaches to globalization. These approaches have led to, for example, the concentration of production of some commodities and goods in a few regions or a handful of producers, increasing the risks of global disruptions when one of them experiences problems in production or distribution.[10] They have also resulted in an unequal distribution of the costs and benefits of globalization within countries,[11] eroding economic opportunities for many and fuelling perceptions of insecurity that can contribute to political polarization and the support of political positions characterized as populist[12]—potentially reflecting a globalization of discontent.[13]

Second, the scale and speed of global links are profoundly reshaping interdependence. Humans have become geological-scale drivers of planetary changes, ushering in a proposed new geological epoch—the Anthropocene, the age of humans. With it comes an unprecedented set of planetary challenges, in addition to globalization shaped by policy choices. The cross-border impacts of such events as forest fires, zoonotic disease outbreaks and extreme weather are at least in part the result of planetary changes driven by human production and consumption, and those changes cannot be directly managed by curbing flows of goods, finance and people at the borders. At the same time advances in digital technologies and concerted efforts to decarbonize economies are shifting economic structures and development opportunities. Digital services and platforms shrink the world by enabling real-time collaboration and almost instantaneous global communication. Even though global trade in goods may have plateaued and global value chains are being reconfigured, cross-border information flows are still on the rise, reaching new record highs every year.[14]

> “Vulnerabilities and propagation of shocks are not an inescapable feature of interdependence; rather they reflect excessively unregulated approaches to globalization

Third, the globalization of discontent points to blind spots in managing global interdependence. Pursuing unregulated globalization or retreating to protectionism are not the only options—and neither is likely to manage the shared global challenges of the Anthropocene. We all share this planet.[15] Even if imposing trade barriers or making international migration increasingly difficult would reduce certain types of interdependences among countries, planetary challenges such as climate change do not stop at national borders. Neither do the benefits of climate change mitigation or pandemic preparedness. As we move deeper into the Anthropocene, our futures are inexorably interlinked. Avoiding the mismanagement of interdependence, and the human development costs that come with mismanagement, is important (chapter 1), but so is harnessing interdependence in ways that advance human development.

The persistence of global ties—a hyperconnected world with multiple global interdependences

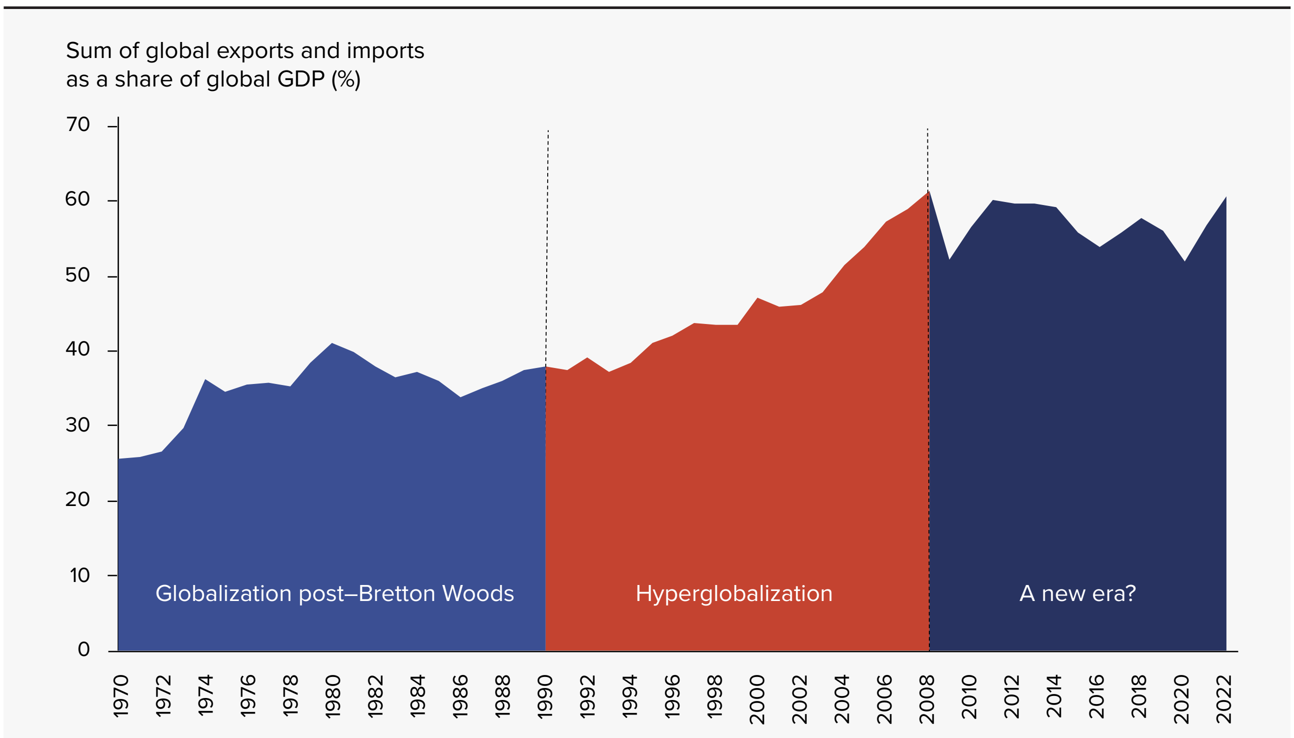
More and more people live in communities that are part of globally interdependent societies,[16] their lives closely intertwined with cultures, economies and ecosystems across the globe. The process of globalization—marked by intensified cross-border flows of information, people, finance, goods and services—has deep roots and a long history of technological and political drivers.[17]

Technological advances have reduced the transportation and communication costs of many cross-border flows,[18] while deliberate policy choices have driven a deepening of interdependence across societies and economies. Financial and trade liberalization, instrumental in driving economic globalization since the 1970s, accelerated global economic integration to the point of being characterized as hyperglobalization.[19] Most countries integrated into global value chains and opened their markets to foreign trade and financial flows, yielding some control over these flows for the promise of economic growth and poverty reduction.[20] This period brought massive increases in standards of living for large numbers of people,[21] but the gains from trade and economic integration were not evenly distributed. It also brought increases in within-country inequality in many high- income countries,[22] often manifested in the emergence of or increase in large subnational inequalities,[23] with declines in job opportunities concentrated in some areas and economic sectors.[24] For some low- and middle-income countries hyperglobalization was sometimes characterized by unequal terms of trade and the implementation of policies that may have inhibited productivity growth and development progress.[25]

In the past dozen or so years, amid growing concerns over supply chain disruptions and resurgent violent conflicts, the emphasis on efficiency in the prelude to hyperglobalization is being rebalanced with concerns over stability and resilience. That rebalancing has occurred, in part, through the imposition of trade barriers at national borders. For instance, trade restrictions surged from fewer than 500 a year in 2010 to nearly 3,000 in 2022.[26] Efforts to reshore, nearshore and friendshore production[27] also suggest a partial retreat from hyperglobalization.[28]

Despite the now slower pace of global economic integration, or even its stagnation in some respects, the world remains hyperconnected, with economies highly interdependent—by some accounts at historically unprecedented levels (figure 2.1).[29]

Figure 2.1. Hyperglobalization is down, but interdependence remains unprecedentedly high



Source: Human Development Report Office based on the World Bank's World Development Indicators database; recreated from Aiyar and others (2023).

International trade has been rising over the long run, in spite of substantial global disruptions.[30] Financial integration today is almost four times higher than in the mid-1990s.[31] No region of the world can claim self-sufficiency, as they all rely on imports from other regions of 25 percent or more of at least one major type of goods and services.[32] Global value chains support everything from food to medicines, and even the digital services and the hardware on which they run.[33] Goods today travel twice as far as in 1965 and cross more borders before reaching their final destination.[34] This makes for intricate global economic relationships with multiple interdependences across the production of goods and services (box 2.1).

Every day, millions of people cross national borders in temporary or permanent moves between countries. Since 1970 the estimated number of people living outside their country of birth has tripled from 84 million to almost 280 million, though as a share of the world population the increase has been more modest (from 2.9 percent in 1990 to 3.6 percent in 2020).[35] The largest share of international migrants goes to Europe (30.9 percent), closely followed by Asia (30.5 percent).[36]

Box 2.1 A smartphone's global journey—a tale of cross-border economic, social and environmental impacts

Smartphones have quickly become a ubiquitous feature of everyday life for a large share of the global population. Since the launch of the iPhone and Android phones in 2007, global sales have skyrocketed. There were 6.4 billion smartphone mobile network subscriptions worldwide in 2022,[1] and 1.15 billion new devices were expected to be sold in 2023[2]—one for every seven people on the planet. Smartphones are more than just devices to connect to the digital world. They are products of a complex and interconnected global system that transcends borders and involves multiple actors and processes. The journey of a smartphone from conception to use reveals how flows of materials, information, value and waste across the world shape our lives.

Before reaching consumers, smartphones cross multiple borders, sometimes the same border more than once. Components of smartphones, including memory chips, processors, batteries and camera modules, are produced by specialized firms in places such as in China, Japan and the Republic of Korea.[3] Each component requires inputs from other economies along the global value chain. For example, a battery requires cobalt, often extracted in low-income countries where the mining industry has been associated with serious human rights violations, including child labour, and severe environmental degradation.[4] Cobalt is exported from countries with mines for processing in countries such as China, before being sent to countries such as Japan or the Republic of Korea to be combined with other materials to create battery cells.[5] Battery cells may then be sent back to China or shipped to, for example, Malaysia for assembly in battery packs, together with other components such as circuit boards.[6]

The value added by these intermediate activities is low relative to the final retail price of smartphones, leaving low- and middle-income countries with a smaller share of the profits from a globally produced device. Most of the profit is captured by the firms that design, market and sell smartphones, mainly based in high-income countries.[7] These firms also own most of the intellectual property rights and patents related to smartphones.[8]

Smartphones have transformed the lives of billions of people around the world, enabling them to communicate across borders, acquire information almost instantaneously, access financial services and participate in the digital economy. However, there are still large inequalities in smartphone access globally.[9] Furthermore, despite its many positive effects, excessive use of smartphones has also been associated with negative mental health impacts, especially among young people.[10]

The journey of the smartphone does not stop once it reaches consumers. Smartphones have a short lifespan, with built-in obsolescence and heavy marketing of newer models hastening their replacement. Electronic waste (e-waste), including smartphones, is growing rapidly. Globally, each person produces about 6 kilograms of e-waste each year. Yet the gradients are steep: the average person in parts of Africa produces less than 2 kilograms of e-waste each year, while the average person in Norway produces 28.5 kilograms.[11] Only about 17 percent of e-waste is recycled, despite the potential to recover and repurpose critical minerals.[12] A large share of e-waste ends up in landfills in low- and middle-income countries, releasing toxic materials and creating health hazards.[13]

Notes

1. Statista 2023. **2.** Kharpal 2023. **3.** Gentile and others 2021; Sturgeon and Kawakami 2010. **4.** Amnesty International 2023. **5.** Carton, Mongardini and Li 2018; Gulley 2023; Richter 2023. **6.** Farooqui 2023. **7.** WIPO 2017. **8.** Sturgeon and Kawakami 2010. **9.** Rowntree 2019. **10.** Abi-Jaoude, Naylor and Pignatiello 2020. **11.** Parajuly and others 2019. **12.** Forti 2020. **13.** Parajuly and others 2019.

People move across borders for various reasons, including seeking work, advancing their education or pursuing humanitarian protection. Mobility is a key feature of human development, as it enables people to expand their choices, exercise their agency and contribute to their wellbeing and that of their families, as well as that of both their host and origin communities.[37] Consider the economic significance of remittances from migrants, which for low- and middle-income countries have long surpassed official development assistance and in 2022 were reaching the same levels as foreign direct investment—but are much less volatile (figure 2.2). In addition to economic ties,[38] international migration also creates social and cultural ties between host and origin countries.[39]

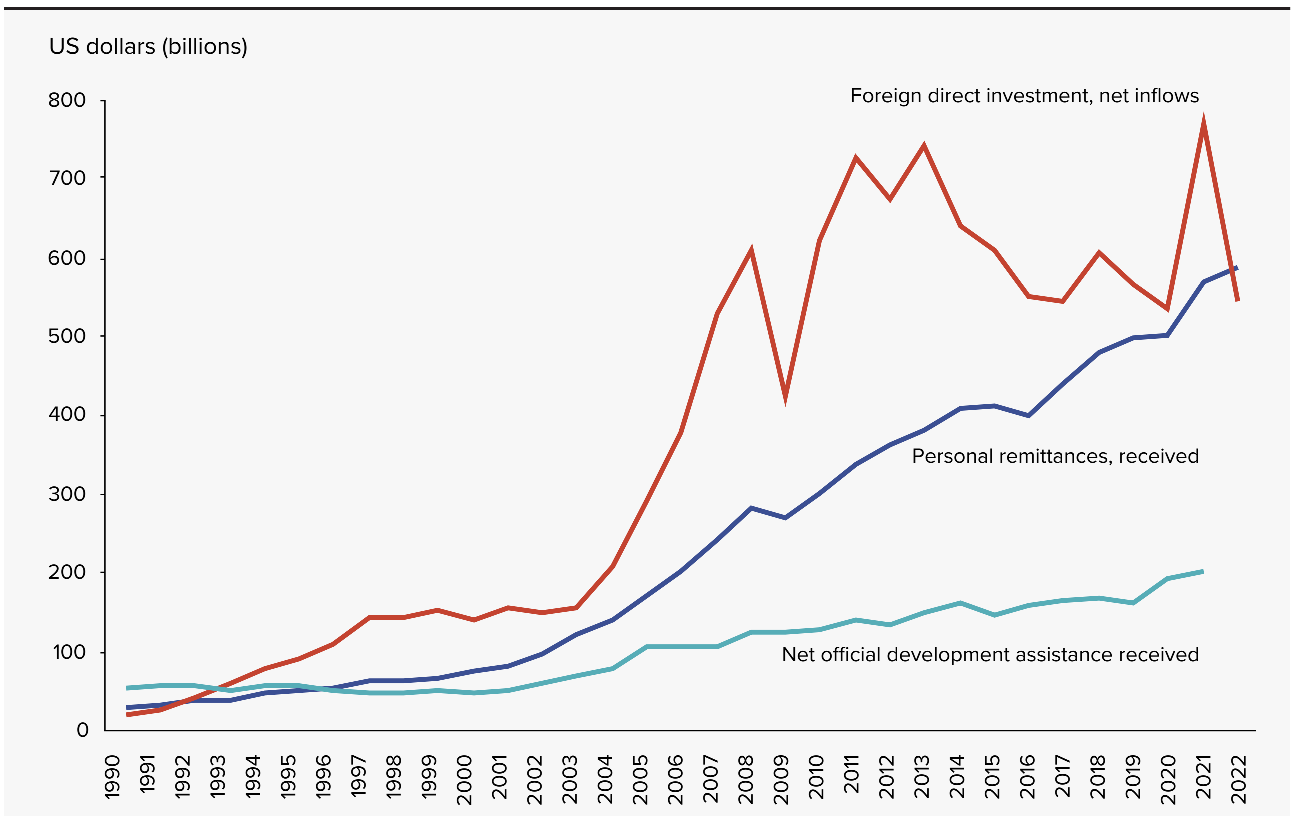
While concerns about the economic and social implications of international migration have increased in many high-income countries, along with anti-immigration narratives, a large body of research shows that international immigration provides net benefits in advanced economies, especially when policies are in place to help international migrants establish themselves in the local labour market.[40]

Perhaps the most telling example of hyperconnections (explored in coming sections) is the rapid increase in digital technology capacity and adoption, linking vast geographic distances—almost in real time. Global bandwidth capacity, up dramatically since 1990, has enabled massive growth in cross-border flows of information[41] and boosted international commerce among countries[42] through global value chains.[43] Despite regionally concentrated inequalities, the roll-out of digital connectivity has been broad: 95 percent of the global population is now within the range of a mobile broadband network, and 5.4 billion people were internet users in 2023.[44]

New risks of economic concentration and dislocation

In a hyperconnected world, where tightly coupled interactions allow for cross-border flows of

Figure 2.2 Remittances to low- and middle-income countries are approaching the level of foreign direct investment



Source: Human Development Report Office based on the World Bank's World Development Indicators database, accessed 10 November 2023. Recreated from IOM (2022).

information, people, finance, and goods and services,[45] some domestic policies and choices can have spillovers that quickly spread regionally and even globally. Large economies of scale and scope can concentrate production in one or a few countries, leaving other countries vulnerable to decisions made elsewhere. Most global trade occurs within macroregional blocs dominated by the largest economies,[46] whereas many low- and middle-income countries heavily dependent on international trade find themselves at the tail-end of global trade with far less control over factors that influence terms of trade.[47] That is why domestic policies in major economies can affect low- and middle-income countries. For example, the US Federal Reserve sets monetary policy under its legal mandate in the United States, but its decisions have substantial effects[48] in emerging market economies.[49] Because transmission runs through multiple channels, cross-border spillovers can be hard to contain.[50]

> "Market concentration may be a sign of specialization and economies of scale, which yield efficiency gains, but it also increases the risks that disruptions and shocks in one or a few firms will propagate through deeply integrated global value chains across many sectors and countries

In many global value chains power is often concentrated in a few transnational corporations whose business strategies can directly affect multiple economies.[51] Transnational corporations can boost investment, innovation and economic opportunities,[52] but they can also crowd out domestic firms, especially in low- and middle-income countries.[53] Market concentration in global value chains enables markups and rent seeking by top firms, which have been linked to the decline in the global labour share of income[54] and to higher consumer prices.[55]

Market concentration is particularly high in the global value chains for goods that serve some basic needs, such as food,[56] as well as in the digital technology space. Today, a handful of technology companies wield significant market power, and their decisions influence societal and political dynamics. In 2021 the market capitalization of each of the three largest tech companies in the world surpassed the GDP of more than 90 percent of countries—including some of the world's largest economies.[57]

Concentration may be a sign of specialization and economies of scale (as well as network externalities), which yield efficiency gains,[58] but it also increases the risks that disruptions and shocks in one or a few firms will propagate through deeply integrated global value chains across many sectors and countries.[59] Specialization can lead to markets where there are "too few to fail."[60] According to recent data, almost 40 percent of global trade in goods is concentrated in three or fewer countries—even for goods with more suppliers.[61] Concentration may be particularly high for some critical products and materials required for digital technologies and the energy transition.[62] Disruptions in global value chains have become more common and more systemic than in the past,[63] driven largely by a mix of climate shocks and geopolitical tensions that may continue into the future.[64]

The other side of concentration is the economic dislocation associated with shifts in production that reduce economic opportunities in sectors or regions previously engaged in domestic production that has been replaced by imports. Despite clear warnings about those risks, the implicit promise that the aggregate gains would be distributed so that the "losers" of globalization would be compensated often failed to materialize.[65] Indeed, governments were often either unwilling or unable to offset negative side effects of global economic integration for some segments of their population, perhaps in part because economic dislocation was driven not by economic integration alone but also by other factors such as technological change.[66]

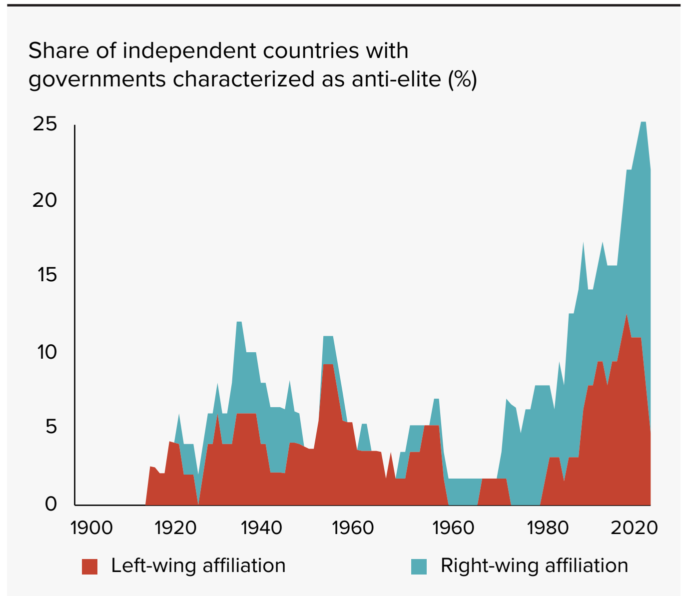
Regardless of the process that led to economic dislocation, regions or groups that felt left behind and believed this to be the result of globalization often became hostile to trade openness, contributing to increases in support for political positions that can be described as populist (see below) and political polarization.[67] Painted with the broadest possible brush, interdependence that is not well managed not only harms human development (chapter 1); it also has broader implications reflected in a discontent with globalization that feeds into processes of political polarization.

Mismanaging interdependence feeds the globalization of discontent

In recent years political movements that advocate the domestic over the international and question the need for global cooperation have gained traction in many countries.[68] These movements are characterized by narrative frames that contrast what is purported to represent the interests of the general population with what serves an established elite, in what has been described as an anti-elite theory of society.[69] Rather than ideology based, these views centre on people's "moral" superiority over a corrupt elite. Some variants include identity-based organized views, such as nativist movements based on the superiority of one race or ethnicity, or movements that favour strong leaders without checks and balances.[70]

Today, the share of countries with governments that fit with this broader definition characterization of anti-elite movements that question the need for global cooperation (often designated as populist) is unprecedented. What is more, there is a shift in their ideological affiliation. Left-wing affiliation was once dominant (and is still at high levels), but the share of right-wing affiliation has increased dramatically since the 1990s (figure 2.3).

Figure 2.3 Support for anti-elite politics is on the rise



Source: Funke, Schularick and Trebesch 2023.

What drives discontent?

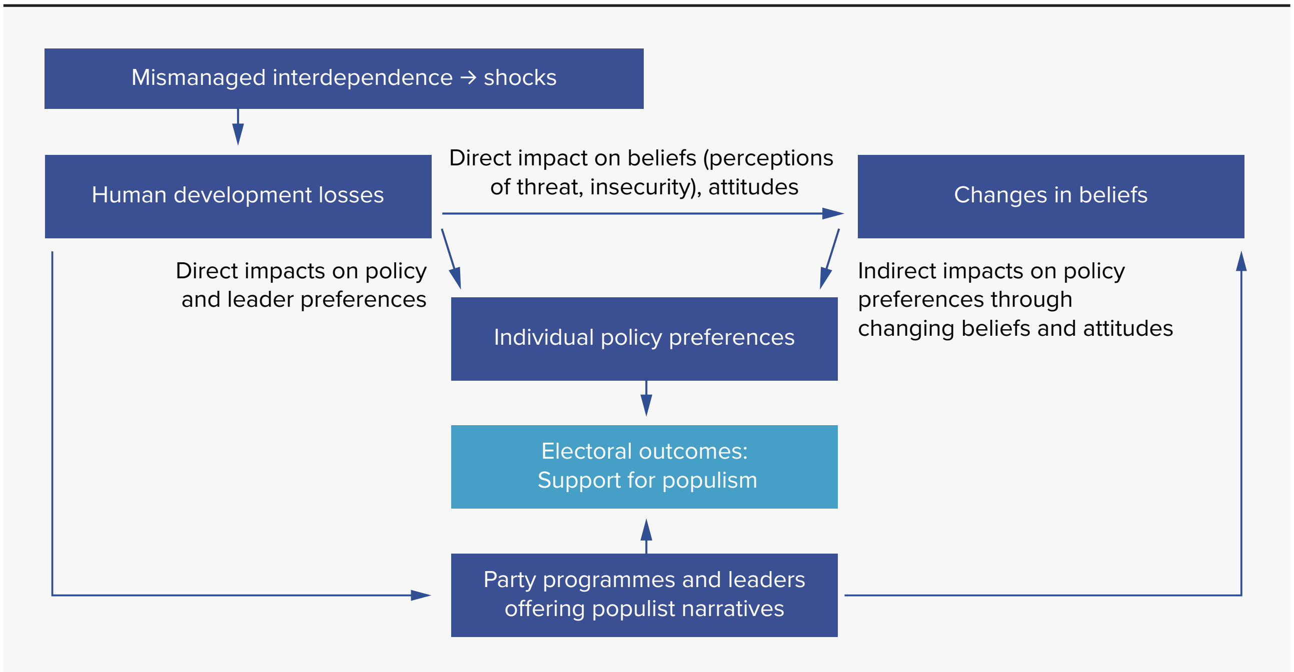
Despite the surge in support for these political movements, the animosity towards globalization has not necessarily increased among the general public.[71] One way of accounting for this paradox is through a framework that explains the links between mismanaged interdependence and the rise of political movements that can be characterized as populist on the demand side (people supporting parties and leaders) and on the supply side (emergence of those leaders and parties) of politics.

Both welfare and beliefs-based channels feed into the hostility towards globalization to boost support for populist movements (figure 2.4). Simply put, the welfare channel shows how economic dislocations and human development implications of mismanaged interdependence can lead people to rally behind populist leaders, who may use people's discontent and grievances about distributional effects (actual or perceived) to their advantage.[72] The beliefs channel entails norms and identities that may be perceived as under threat from globalization, and these perceptions of threat contribute to the support for populism.[73] And the two channels can reinforce each other,[74] making it hard to untangle the links.

Both welfare and beliefs channels link mismanaged interdependence and discontent

In globally interdependent socioecological systems, shocks and disruptions have multiple, sometimes unforeseen, global ripple effects. Human development suffers when interdependence is mismanaged (chapter 1). On the demand side human development losses may directly affect people's policy preferences, opening policy space for populist and nativist narratives if established mechanisms are unable to manage and mitigate the impacts of global shocks. For example, natural hazards and financial crises increase support for authoritarian leadership and extreme political movements, particularly on the far right. Household debt crises that frequently follow a financial crisis are also linked to mounting support for far-right populist parties.[75] Since the 2007–2008 global financial crisis, the number of countries that have implemented austerity policies has risen substantially,[76] potentially further circumscribing their capacities to protect people from the repercussions of global shocks.[77]

Figure 2.4 Mismanaged interdependence leads to demand for populism through welfare losses and beliefs



Source: Human Development Report Office elaboration based on Rodrik (2021).

Still, the increased risk of globalization-linked (in reality or perception) localized welfare losses cannot fully explain the rising appeal of populist and nativist movements. A recent review of survey experiments finds little support for the hypothesis that economic self-interest alone drives antiglobalization sentiment.[78] In some cases electoral support for political candidates advocating protectionist measures even increased despite these measures having negative effects on local employment.[79] The findings echo public opinion data, as well research on the effects of objective globalization risks such as offshoring of jobs.[80]

Thus, the link between human development losses from global shocks and increased support for populism may also work through changing perceptions, beliefs, identities and attitudes towards globalization.[81] Fear and feelings of insecurity, especially those related to losing status, can shift preferences in a populist and nativist direction.[82] This beliefs-based link can be particularly potent in contexts of long-term deteriorating economic prospects.[83] For example, nationalist and anti-immigration narratives take hold more easily in places experiencing adverse economic change (for example, increases in the unemployment rate matter more than the levels of unemployment as such).[84]

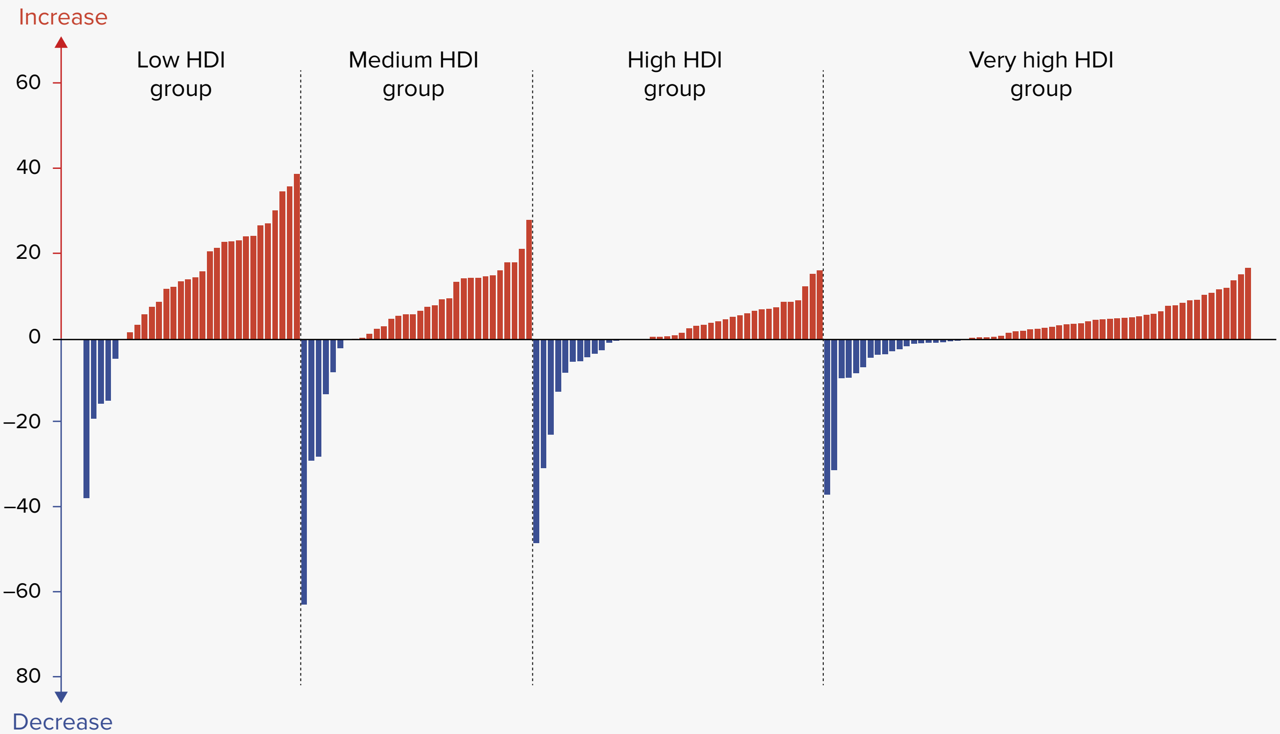
This matters in a globally interdependent world that is also increasingly worried and distressed.[85] Today, feelings of distress and insecurity are pervasive and persistent, permeating even the wealthiest countries. Across the world almost 3 billion people report feeling worried, stressed or sad.[86] While subjective wellbeing has been found to be susceptible to external shocks,[87] the Covid-19 pandemic seems only to have exacerbated a pre-exiting existing trend: both worry and stress were reaching record highs even before the pandemic (figure 2.5). These feelings of distress have been on the rise even as the world has made substantial development progress,[88] though the trend of progress was interrupted in 2020 and 2021 (chapter 1).

Political leaders and movements can exploit the links between mismanaged interdependence and discontent

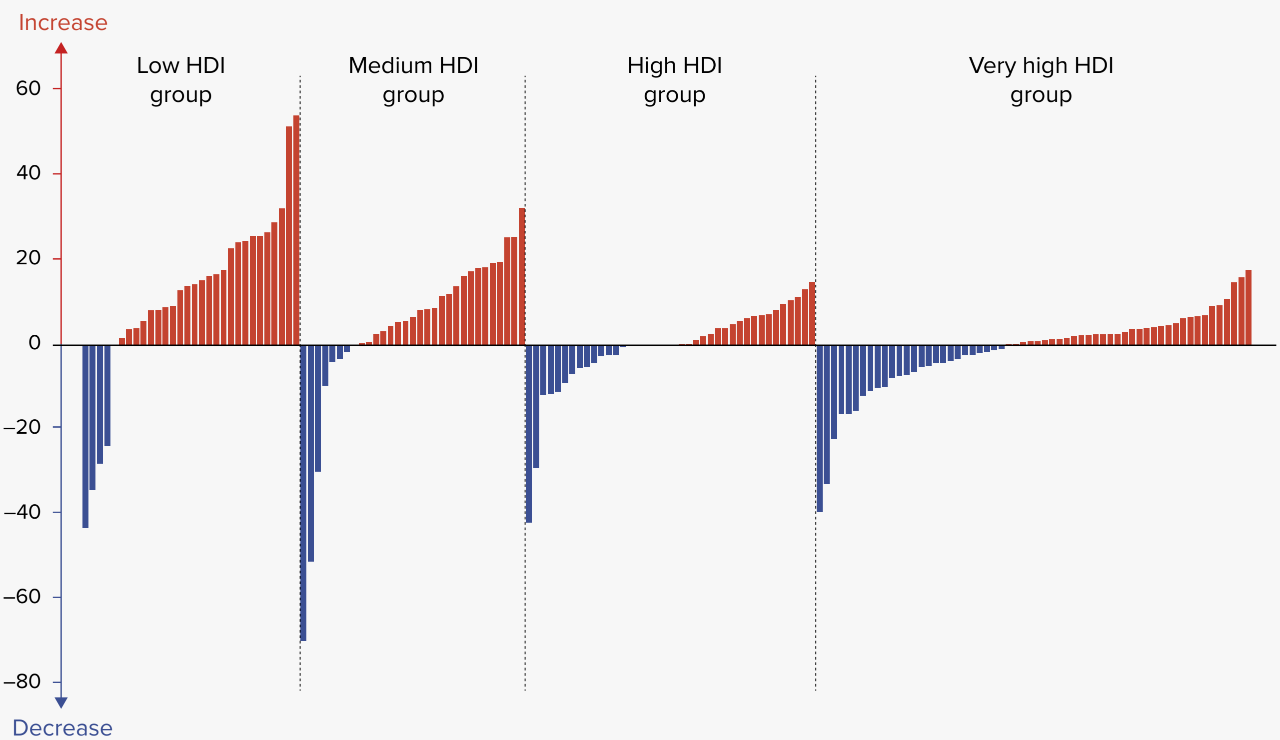
On the supply side political leaders and movements can reinforce the links between mismanaged interdependence and rising support for populism, by mobilizing discontent to their advantage.[89] While such tactics are not unique to populist movements, a common narrative of these movements is to pit negative collective emotions towards revenge against an established elite,[90] often portraying leaders as champions and competent protectors of "common people"[91] in opposition to a global elite. As such, they may gain

Figure 2.5 **Even prior to 2020, worry and stress were rising in most countries**

a. Change in the percentage of people reporting experiencing stress, 2011–2019 (percentage points)



b. Change in the percentage of people reporting experiencing worry, 2011–2019 (percentage points)



HDI is Human Development Index.
Note: Values refer to the change in the percentage of people who reported experiencing stress or worry "during a lot of the day yesterday."
Source: Human Development Report Office, based on Gallup (2023).

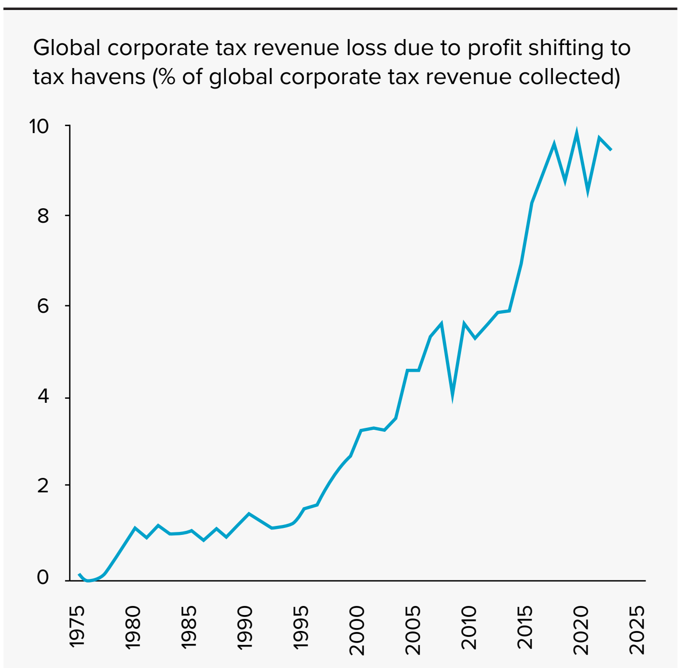
traction by tapping into frustrations among those who feel left behind by globalization or see globalization as a threat to their identities.

This anti-elite, antiglobalization sentiment may be rooted in part in the way that global elites have been able to cash in on the benefits of globalization to race further ahead. In addition to the economic dislocations, with increased inequalities within countries and pervasive job losses in certain places, hyperglobalization has enabled offshore tax evasion and avoidance by wealthy individuals and companies. Multinationals may have shifted as much as $1 trillion of profits to tax havens in 2022,[92] resulting in billions of dollars in lost tax revenue. Global losses of corporate tax revenue have skyrocketed since the mid-1990s as a result of profit shifting (figure 2.6). These patterns are clearly associated with asymmetries between how elites and the general population benefit from hyperglobalization, fuelling discontent that feeds into populist narratives.

Populist leaders and movements can also work through the beliefs channel by using discourse and narratives to foment polarization and politicize issues such as international cooperation.[93] Indeed, antiglobalization sentiment has become increasingly salient in partisan discourse.[94] As these issues become more visible through political campaigns and narratives, they can lead to shifts in people's beliefs and to sorting along narrow identity lines rather than along income groups—and subsequently to shifts in policy preferences.[95] These shifts can lead to voting patterns that, in some cases, might go against one's economic self-interest,[96] and they may even influence behaviours beyond voting.[97] For example, populist campaigning against scientific advice during the Covid-19 pandemic reduced adherence to social distancing in places where populist leaders enjoyed high support.[98]

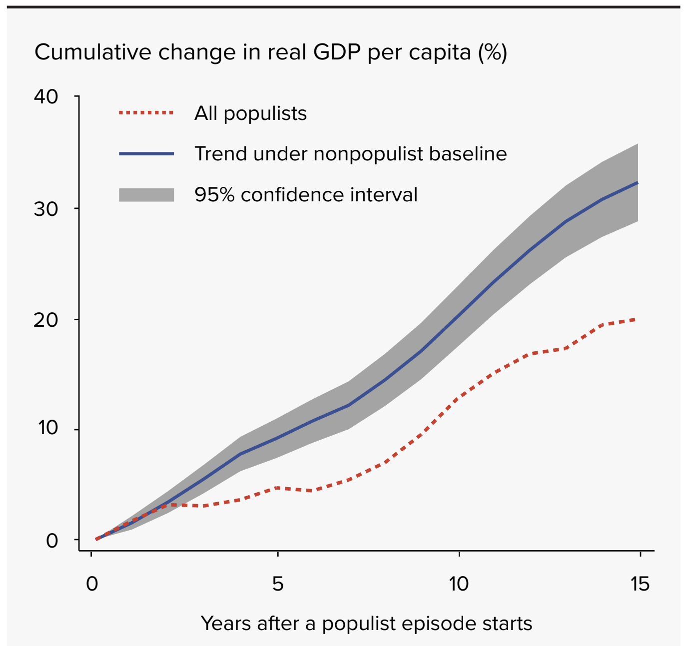
Populism is politically disruptive and economically very costly.[99] In countries with episodes of governments characterized as populist, whether on the right or on the left, GDP per capita is 10 percent lower 15 years after the episode started than where such episodes did not take place (figure 2.7). Negative effects on the economy tend to materialize only three to five years after the populist episode starts, and they

Figure 2.6 Elites have been able to cash in on hyperglobalization, as profit shifting to tax havens has skyrocketed



Source: Alstadsæter and others 2023.

Figure 2.7 Discontent is costly: Lower GDP trajectories in countries with populist episodes



Note: All regressions include country fixed effects and five lags of real GDP per capita growth, global growth, inflation, banking and sovereign debt crisis controls and an institutional/democracy quality index given by the first principal component of the Varieties of Democracy indices on judicial independence, election fairness and media freedoms (Coppedge and others 2022), as well as the Polity IV democracy score (Marshall and Gurr 2020). Data cover 60 countries since 1945 for the core sample of populist episodes.
Source: Funke, Schularick and Trebesch 2023.

continue to worsen over time[100]—representing a potential permanent loss.

Discontent polarizes societies, with potentially dangerous consequences

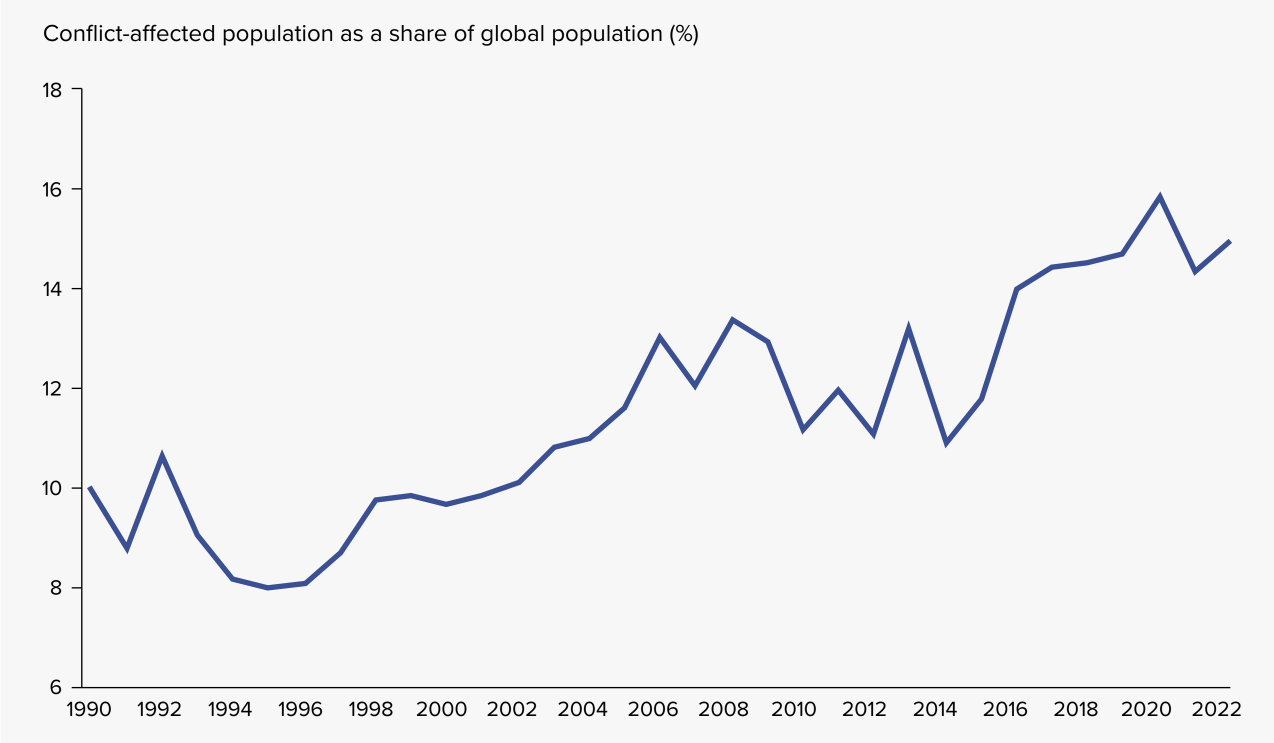
The populist rhetoric of retrenchment and nativism polarizes societies by pitting groups against each other—us, the people, against them, the elite. The inward-looking, nativist direction of many of these movements erodes abilities to collectively manage reshaped global interdependence and tackle issues that transcend borders. Historically, the populist and radical regimes that came into power after the global financial crises of the 1920s and 1930s in a context of deep political polarization drove countries to a world war rather than delivering solutions to the shared challenges facing them (spotlight 2.1).

Today, the international community grapples with a renewed surge in violent conflicts, with devastating impacts on human development and human security. In 2022 alone, before the rise in violence and conflict in the African and Middle East regions in 2023, almost 1.2 billion people—15 percent of the global population—lived in areas affected by violent conflict (figure 2.8).[101] These staggering numbers are part of a horrific trend of rising violent conflicts that is becoming increasingly internationalized and entrenched,[102] affecting more people in more places, including in higher Human Development Index countries.[103] In addition to devastating local impacts, violent conflicts often have impacts that spill across borders. The multiple ripple effects range from arms proliferation[104] to forced cross-border displacement, regional food insecurity[105] and rising inflation.[106]

Global interdependence is being reshaped and likely to persist well into the future

Even aside from the policy choices shaping global interdependence—import tariffs that discourage trade, visa restrictions that slow migration—interdependence is an inescapable feature of living on a shared planet that is undergoing dangerous changes, unprecedented in that they are planetary and a result of human choices. They are also reinforced by

Figure 2.8 Violent conflicts affected 15 percent of the global population in 2022



Source: Human Development Report Office based on Aas Rustad and Østby (2023) and Arasmith, Østby and Aas Rustad (2022).

the fact that humans are relational beings (spotlight 2.2). Going forward, two drivers—dangerous planetary change and the deep transformations of economies, supercharged by digital technologies—are profoundly reshaping global links, demanding more—not less—management of interdependence, given that the opportunities to manage that type of interdependence by making decisions about at-the-border restrictions are limited to nonexistent.

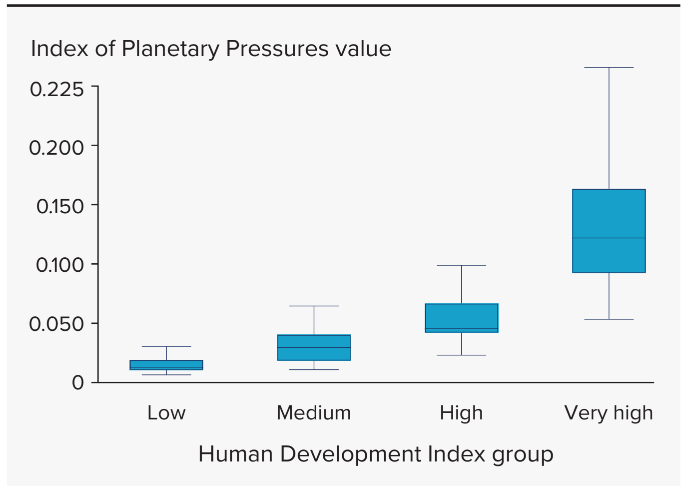
The Anthropocene adds a planetary dimension to global interdependence

The Anthropocene is a proposed new epoch in the geological timescale, characterized by the unprecedented impact of modern human activity on Earth systems (chapter 3). It provides a useful framing for understanding the interdependence among humans, human societies and our shared planet. It helps further "establish the connections between our economic, social, and cultural spheres and the Earth System itself"[107] and unveils the entanglements of global inequalities and endangering the critical functions of Earth systems.

Social and ecological systems have always been deeply connected but rarely at the planetary scale.[108] Today, human impacts on the planet are so stark that they are altering planetary processes. Humans have altered the natural cycles of carbon,[109] nitrogen,[110] phosphorus,[111] water[112] and other elements, changing the temperature, precipitation, sea level and atmospheric composition of the planet.[113]

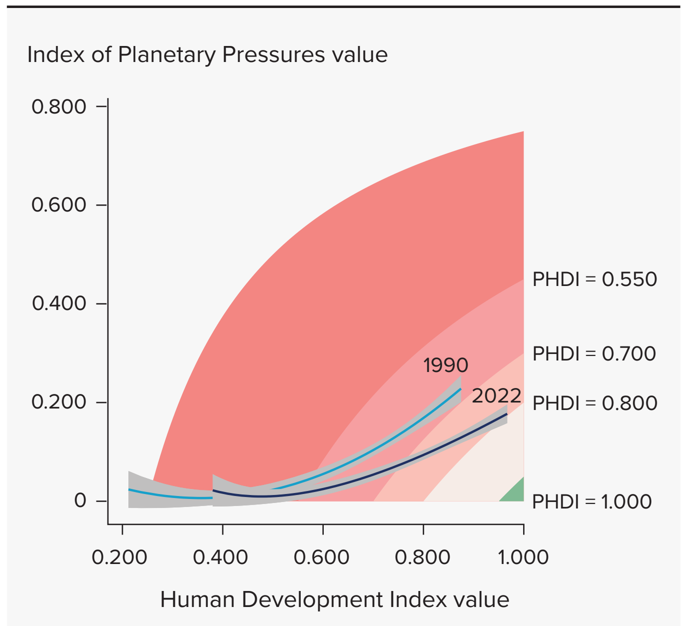
Countries with higher levels of human development, as measured by the Human Development Index (HDI), exert higher pressures on our planet (figure 2.9). Countries on the lower end of the HDI, which put fewer pressures on the planet, are likely to be disproportionately affected by the impacts of planetary pressures.[114] These inequalities create destabilizing dynamics that, along with intensified polarization, may delay action to mitigate or reduce planetary pressures. Over time, though, human development progress is associated with lower planetary pressures—in 2022 the average planetary pressures required to sustain any given HDI level were lower than in 1990 (figure 2.10). In fact, in recent years both very high and high HDI countries

Figure 2.9 Inequalities and the Anthropocene—higher Human Development Index countries put higher pressures on the planet



Note: The Index of Planetary Pressures is constructed using the per capita levels of carbon dioxide emissions and material footprint in each country (it is 1 minus the adjustment factor for planetary pressures presented in table 7 in the *Statistical Annex*). Each box plots the middle 50 percent of the distribution; the central line is the median. Outside each box the extreme lines are the approximate minimum and maximum of the distribution. Outliers are not shown.
Source: Human Development Report Office. See specific sources in table 7 in the *Statistical Annex*.

Figure 2.10 Pushing possibility frontiers—higher Human Development Index values at lower planetary pressures



PHDI is Planetary pressures–adjusted Human Development Index.
Note: The Index of Planetary Pressures is constructed using the per capita levels of carbon dioxide emissions and material footprint in each country (it is 1 minus the adjustment factor for planetary pressures presented in table 7 in the *Statistical Annex*). Cross-sectional pressure patterns for 1990 and 2022 were calculated using polynomial regression models. Shaded areas are confidence intervals.
Source: Human Development Report Office. See specific sources in table 7 in the *Statistical Annex*.

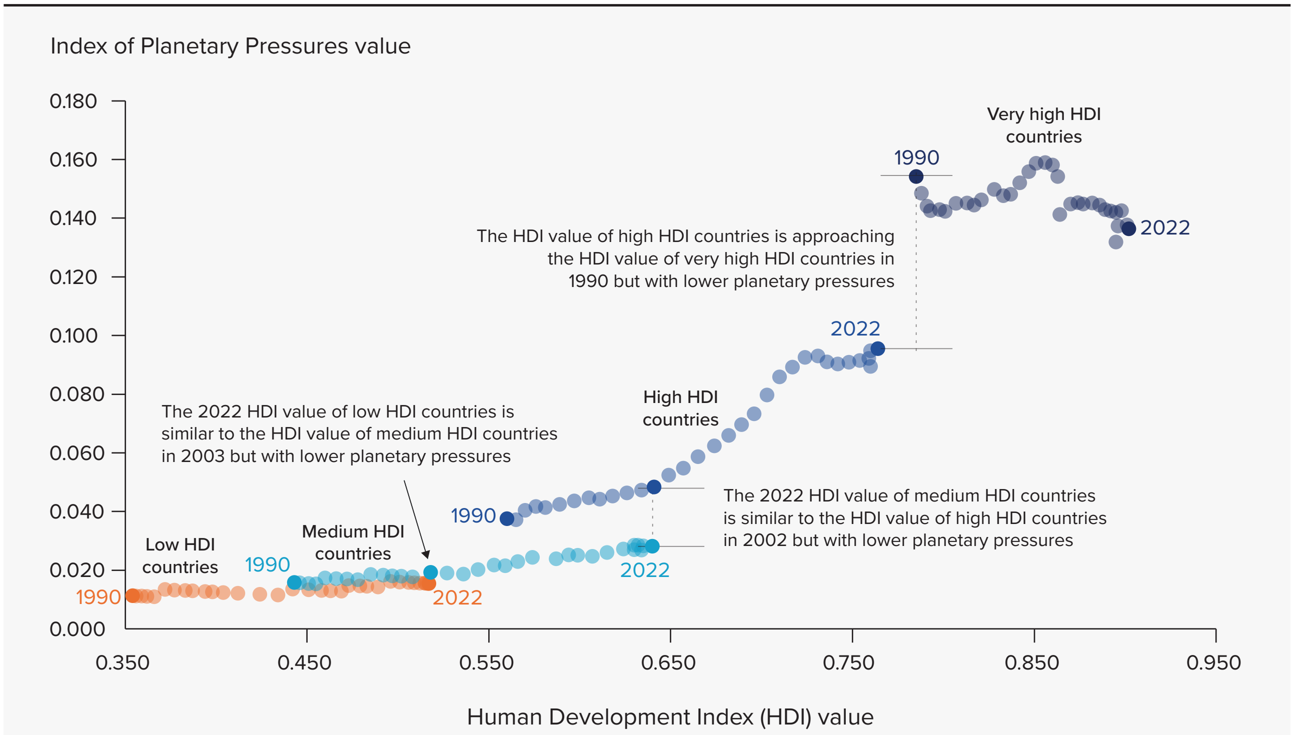
have continued to improve their HDI values without increasing planetary pressures, even though HDI progress in high HDI countries led to a sharp increase in planetary pressures in the first decade of the 21st century (figure 2.11). Still, all countries, but particularly those with very high and high HDI values, need to do much more, at greater scales and speed, to ease planetary pressures than what has been the current trend. In fact, the trend going forward needs to start sloping downward, so that improvements in HDI values happen along with declining planetary pressures.

Technological development, especially renewable and low-carbon energy systems, pushes possibility frontiers and may enable gains on the HDI without increases in planetary pressures. However, transition periods, where fossil fuels and low-carbon system coexist, may be particularly volatile, with heightened cross-border risks.[115] Transitions away from fossil fuels are very likely to shift the comparative advantages of countries and could drive shifts in trade patterns and economic power with geopolitical implications.[116] Changes to domestic climate policies may reverberate internationally through both trade and financial channels,[117] with especially strong effects for low- and middle-income countries—effects that may go beyond balance of payments fluctuations to affect long-term debt dynamics.[118] Therefore, the types of climate policies that countries pursue will not only affect prospects for mitigating climate change but will also have profound implications for global links and development prospects. If interdependence is harnessed in a positive way—starting with not mismanaging it—the outlooks for both people and planet are more positive.[119]

Planetary pressures lead to planetary spillovers

When social and environmental change interacts at a global scale, spillovers from a local socioecological system can turn planetary. To see how, consider telecoupling, which describes distant interactions and complex feedback loops between human and ecological systems over vast distances and attempts to account for socioeconomic and environmental spillovers across scale, space and time.[120] For

Figure 2.11 Decoupling of planetary pressures and the Human Development Index (HDI)



Note: The Index of Planetary Pressures is constructed using the per capita levels of carbon dioxide emissions (production) and material footprint in each country (it is 1 minus the adjustment factor for planetary pressures presented in table 7 in the *Statistical Annex*).
Source: Human Development Report Office. See specific sources in tables 2 and 7 in the *Statistical Annex*.

example, the land-use decisions of firms and farmers in tropical forests affect regional environmental degradation, biodiversity loss and global climate change not only through increased greenhouse gas emissions associated with deforestation but also through changes in precipitation patterns in regions far from tropical forests (chapter 3). The same land-use decisions are influenced by global market dynamics, such as consumer preferences and terms of trade. For example, higher global demand for soybeans can lead local farmers to switch to them from cattle ranching,[121] potentially reducing both deforestation and carbon dioxide emissions in comparison to a scenario with continued cattle ranching.[122]

Another example is fishing around coral reefs, which can reduce the biomass of fish species that provide important ecosystem services[123]—such as the large herbivorous fish that reduce algae growth. Without those species, algae growth may increase, bleaching the reefs.[124] The erosion of coral reefs reduces global carbon cycling (thus adding to climate change). It also harms the livelihoods of many people and the natural protection of coastlines from storms.[125] By contrast, sustainable local fishing practices can improve the biomass of herbivorous fish and benefit coral cover.[126]

With an Anthropocene lens, the notion of global interdependence needs to include an understanding of the Earth System as a whole. Highly complex globally interlinked societies shape, and are shaped by, highly complex and globally interlinked ecological systems. Yet "spatial assumptions about the world are frequently divorced from discussions of economy and, in turn, from issues of environment and nature."[127]

In a globally interdependent world even countries less exposed to climate change–related risks can still be affected by second- and third-order effects.[128] For example, if a natural hazard disrupts economic activities in one country, there may be spillover impacts on the country's main trade partners; if critical infrastructure is hit in one country, it may reconfigure supply chains and reduce the GDP of both downstream and upstream trading partners[129] and can lead to volatility in aggregate stock market indices among trading partners.[130]

Food production and consumption provide another telling example. Only an estimated 11–28 precent of the global population can access key food crops within 100 kilometres of their homes, leaving a large majority of the world population highly dependent on food imports and global food value chains.[131] The production of critical inputs and intermediary products for agricultural production, such as seeds and fertilizers, is geographically concentrated and controlled by a handful of companies.[132] For example, four companies control about two-thirds of global agrochemical sales, including pesticides and synthetic fertilizers that enable industrial-scale agriculture. Three of the same companies are also among the four companies that control more than half the world's commercial seed sales.[133]

While trade in food has boosted food supplies globally and has been a resilience strategy in the face of local climate shocks,[134] the domination of multinational food companies in food systems is now associated with reduced diversity in local food production and lost local food culture traditions,[135] as well as rent seeking by top firms.[136] The concentration patterns in food production have built vulnerabilities in global food systems, which are likely to further increase if human planetary pressures remain unchecked. For example, biodiversity loss and climate change heighten the risk of simultaneous crop failures,[137] with potentially global consequences for food security. Global hunger numbers are already on the rise; 691–783 million people faced hunger in 2022, a situation exacerbated by the war in Ukraine and high inflation.[138]

> "The concentration patterns in food production have built vulnerabilities in global food systems, which are likely to further increase if human planetary pressures remain unchecked

When arable land becomes scarce or degraded due to climate change, farmers may experience reduced crop yields and diminished livelihood security, potentially driving displacement and migration.[139] But the paths and trajectories of human mobility in response to climate, food and livelihood stressors are difficult to predict, particularly as local temperature, rainfall and extreme weather events increasingly deviate from historical patterns. Migration is embedded in social, economic, political, demographic and environmental processes that can affect both the ability to move, as well as the risk of immobility.[140]

As climate change continues and its impacts intensify, especially in the absence of widespread reductions in greenhouse gas emissions, migration could become one of the few viable adaptation and resilience strategies available to afflicted communities. Some projections suggest that under current emissions policy trajectories a third of the world population may be left outside the so-called human climate niche—that is, the temperature range most conducive to human life. If countries fully implement all climate change mitigation policy targets, global warming may be limited to about 1.8°C—which would still leave almost 10 percent of the world population outside the so-called human climate niche—that is, the temperature range most conducive to human life.[141]

The health, livelihood and labour market impacts of extreme heat are likely to be substantial, as shown by the UNDP Human Climate Horizons platform (box 2.2).[142] Some research predicts that by midcentury, more than 200 million people are likely to migrate internally (within-country) in the face of climate stress.[143]

Digital technologies make cross-border communication almost instantaneous—and are changing economic structures

Alongside the planetary challenges of the Anthropocene, economies are undergoing profound shifts,

Box 2.2 Human mobility in the face of climate change: The case of Viet Nam

Hannah Pool

The UNDP Human Climate Horizons platform calculates and visualizes how climate change will affect human wellbeing under different greenhouse gas emissions scenarios. The platform estimates the projected impacts of climate change at a highly granular level, illustrating how it might affect places and communities in more than 200 countries and territories.

Take Viet Nam, which is already grappling with the effects of climate change as droughts, floods and typhoons become more frequent. The average annual temperature is projected to increase from 25.9°C in 1986–2005 to 26.7°C in 2020–2039 to 27.6°C in 2080. In the high emissions scenario it could reach 29.2°C. The rising temperatures will particularly affect the working hours of people in both low-risk and high-risk occupations. In the moderate emissions scenario annual working hours per worker could be reduced by 2.3 hours in 2020–39 and by 10.5 hours in 2080–99, whereas in the high emissions scenario annual working hours per worker in high-risk jobs in agriculture and construction could fall by 36.7 hours.

With 3,000 kilometres of coastline, Viet Nam is particularly vulnerable to rising sea levels.[1] Under the high emissions scenario sea-level rise will affect an additional 1.3 percent of the population between 2020 and 2039 and 7.4 percent by the end of the century, compared with a scenario without climate change.[2]

Migration decisions are complex and multifaceted, and climate change and the environment can be contributing factors. By 2050, 1.5–3.1 million people in Viet Nam could become climate migrants.[3] In Viet Nam's Thừa Thiên-Huế Province people expressed their intention to relocate permanently because of a heightened risk of flooding caused by sea-level rise.[4]

When people are forced to move as a result of climate change, they tend to move first within national borders before moving to neighbouring countries,[5] and they tend to move from rural areas to cities. In Viet Nam this will put additional pressure on urban infrastructure.[6] People might also move to neighbouring Cambodia or Thailand, which, as the Human Climate Horizons data project, will also be affected by climate change.

Scenarios like these are important to assessing how climate change will affect human mobility and to driving people to do everything possible today to avoid the high emissions scenario. But human mobility cannot be deterministically predicted, even less in the distant future, since a continuum of human agency exists at various levels, which gives humans the capacity to "find creative, locally appropriate solutions" in a world of diverse social, economic, cultural and place-based physical systems.[7]

Notes

1. IPCC 2022. **2.** UNDP and Climate Impact Lab 2022. Data from Human Climate Horizons, accessed 30 November 2023. **3.** Clement and others 2021. **4.** Duijndam and others 2023. **5.** IPCC 2022. **6.** Spilker and others 2020. **7.** Horton and others 2021, p. 1279.

powered by rapid technological innovation, especially in digital technologies. These shifts are already changing the nature of global interdependence and will likely continue to do so well into the future.

Digital technologies link distant places almost instantaneously, affecting international trade, labour markets, and the production and consumption of information. In 2023 anyone with a computer or smartphone[144] could in theory reach more than half the global population, and the number of internet users is expected to continue to increase.[145] The digitally powered spread of (mis)information can speed up contagion dynamics and influence behaviours, with cross-border implications for, for example financial instability[146] or conflict.[147]

While governments can put controls on internet use, blocking access to—or even just monitoring—online information is extremely difficult as the technology constantly evolves and expands.[148]

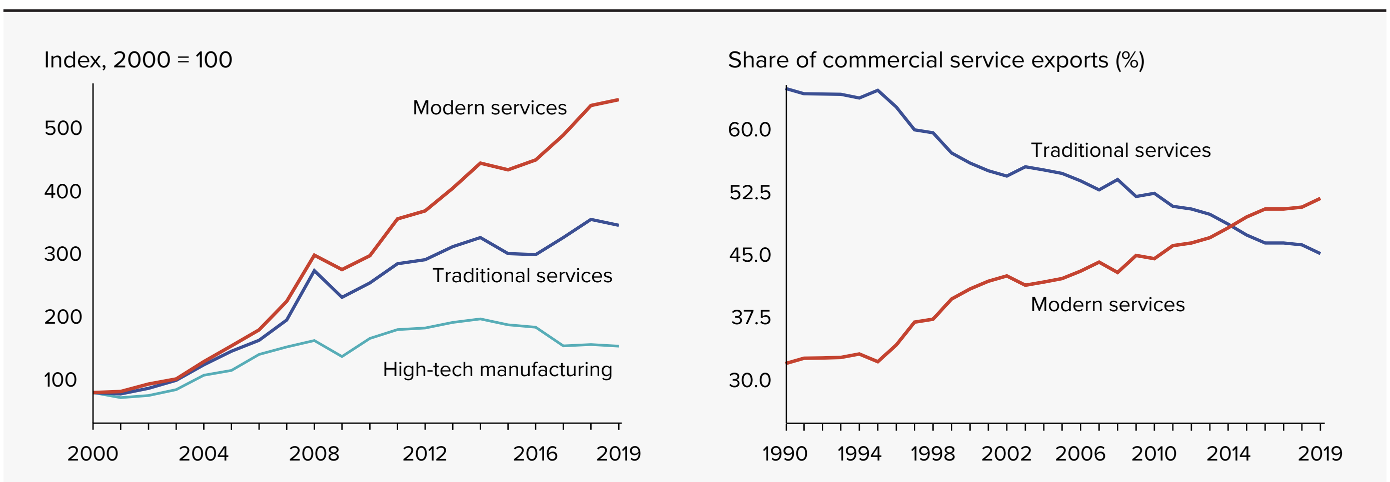
Even during the physical lockdowns and border closures of the Covid-19 pandemic, when goods and people flows across borders plummeted, cross-border information flows flows soared.[149] Digital platforms and global flows of data enable larger trade volumes between countries,[150] as well as increased opportunities for small and medium enterprises to participate in global value chains.[151] The rise of digital technologies in the global economy is part of deeper changes in the structure of economies, in which the value of knowledge and services increases relative to that of physical goods,[152] powered by increasingly low-carbon energy systems.[153] In 2022 digital service exports reached $3.8 trillion in value and accounted for more than half of global trade in commercial services.[154] Modern service exports, which include computer and information services, have increased fivefold since 2000 and are quickly overtaking both exports in traditional services such as tourism, as well as high-tech manufacturing exports (figure 2.12).

Digital technologies are shaping how to navigate the Anthropocene

Navigating the Anthropocene will be shaped by choices associated with the Digital Revolution.[155] The increasing use of digital technologies has direct impacts on our planet, including the environmental footprints of novel technologies such as artificial intelligence and blockchain. These require vast amount of computing power and are associated with intensified greenhouse gas emissions.[156]

The expansion of data availability and the increased ability to process huge amounts of data have been key factors in recognizing the Anthropocene, by enabling more precise measurement, monitoring and modelling of the Earth System, or how digital technologies have enabled communication and dissemination of scientific knowledge about the Anthropocene to the public at large.[157] But the interaction between already polarized societies and digital communication

Figure 2.12 Digital technologies are driving shifts in global economic interdependence, with dramatic increases in modern service exports since 2000



Source: Cornelli, Frost and Mishra 2023.

in social networks, characterized by algorithms that propel division and misinformation, can erode public deliberation, propel mistrust in science and put up barriers to collective action for a low-carbon transition.[158]

While digitalization has expanded opportunities for many people, there are large and regionally concentrated inequalities in digital access. In Africa only 37 percent of the population were internet users in 2023, compared with a global average of 67 percent.[159] Only about a third of the digital gap in Africa can be explained by lack of infrastructure;[160] issues such as prohibitive costs and other barriers may account for the rest. Investment in frontier technologies, such as artificial intelligence, is also associated with higher income inequality.[161] If these asymmetries remain, many people risk losing out on the expanding economic opportunities that come with new technologies. Inequalities may also drive consumption patterns that add to planetary pressures, through spending cascades on so called positional goods, such as ever larger cars.[162] These types of consumption patterns are channelled via aspirations and norms, which may be influenced by both traditional and social media.[163]

The human toll of mismanaging interdependence: Insights from national and international history

Patricia Clavin, *Oxford University*

World War I was a catastrophic period in history with far-reaching effects. On average, 5,600 men died for every day that the war continued, and injured soldiers and civilians had some of the worst injuries ever seen. In the war zones factories, farms and homes were destroyed to the tune of around $30 billion, roughly half of US GDP at the time.[1] As part of the political fallout of the war, the Austro-Hungarian, German, Ottoman and Russian Empires tumbled, and more than 14 million people were displaced.[2] In the peace negotiations that followed, it became clear that while millions of people everywhere aspired to greater self-rule, the British and French Empires expanded the number of territories under their governance as a result of the conflict. Other countries, notably Japan and the United States, grew in global prominence.

The Paris Peace Conference of 1919 and its subsequent peace treaties suggested that sovereign states existed on a plane of equality in the international system. But the war and its outcomes made it clear that the world's empires, nation states and colonized people who aspired to statehood had different natural endowments and access to resources that shape human development. In the international system states also had different interests and concerns. After 1918 governments, businesses, banks, farmers and people everywhere struggled to comprehend how much had changed as a result of the war. They were hit by a series of economic and social crises and responded by taking defensive measures that strongly prioritized national and imperial interests. Many governments mismanaged the interdependence of markets and people. Instead, numerous countries found themselves on a path to a second world war within a generation of the first.

World War II was even more destructive than its predecessor. Some 60 million people died around the world. Much more property and infrastructure lay in ruins. And the conflict inflicted unprecedented pollution on the planet, including radiation from a new type of weapon, the atomic bomb. Yet this time, the types of social and economic crises that had battered many governments, people and world markets after 1918 were largely averted. In the following decades the prospects for human development improved markedly and remained on an upward trajectory for the rest of the 20th century. This spotlight reveals how the management of human interdependence in these postwar eras produced such different outcomes.

The search for national sanctuary in an interdependent world

After 1918 the first crisis that gripped the world was financial. No one had thought about how they were going to fund an unprecedented global war. As a result, the belligerent governments borrowed or printed money to pay for it. As the conflict ended, governments were desperate to get back to "normalcy" and removed all the controls on their national economies in an uncoordinated way. The result was rapid inflation. The worst cases were in the new republics of Austria, Germany, Hungary and Poland, which endured hyperinflation. In Germany prices quadrupled every month for 16 months.

But even some of the world's strongest economies had annual inflation of 20–30 percent. They dealt with this by returning their currencies to the international gold standard—a fixed exchange mechanism—which brought stability to prices and interest rates. States did this largely in an uncoordinated way, thinking about what suited their national interests and leaving the job to central banks and financial markets.[3] It meant, for example, that the US dollar and the French franc were significantly undervalued, which helped their exports. Britain, a major importer of food and exporter of capital and financial services, preferred a strong pound and opted to overvalue the pound sterling. This made life tough for its domestic producers and encouraged many of them to demand protection from overseas traders, a worldwide trend. It meant that while exchange rates were stable, the market interdependence that the gold standard system was supposed to safeguard had unstable foundations.

The next global financial crisis hit within a decade of the first, after October 1929. The consequences of the uncoordinated processes of financial reconstruction after 1919 became clear following the stock market crash on Wall Street in the United States. Having been heavily involved in stabilizing the currencies and economies of Central Europe in the 1920s, US political and financial leaders decided it had been too easy for investors—at home and abroad—to borrow money, so the Federal Reserve opted to increase interest rates. This decision pushed a downturn in the stock market into a full-blown depression as investment abroad was stopped in its tracks. The crisis was transmitted around the world through the gold standard system. Other central banks defended their currencies by increasing interest rates and demanded that their governments stop spending. Workers were laid off in droves, and poverty and hunger rates rose dramatically in the worst deflationary crisis the world had yet known.

By 1933 leading economists and international advisors had identified the right solution: they proposed internationally coordinated measures to reflate the world economy and stop the rising trade protectionism. But countries had acted to defend their economies in an uncoordinated way after 1929, and despite four years of suffering, the ability to cooperate was absent. There were now gaping domestic and transnational ideological divides between states, conflicting geopolitical interests and national politics moving in radically divergent directions. The failure of the world's major economies—Britain, France and the United States—to work together was especially damaging. And they now faced the emerging threat from National Socialist Germany, Fascist Italy and Imperial Japan, which was already waging war in Manchuria.

The see-sawing fortunes of the world's major economies from high inflation to a biting deflationary crunch, connected to ongoing—or triggered new—social and political crises. These were especially pronounced in countries that were defeated or established as new nation states due to World War I. First came the Spanish Flu pandemic, so named because the first case was identified in Spain in 1918. It killed 50–100 million people, though it remains unclear where the pandemic began. This and other health challenges were exacerbated because so many people were on the move as a result of the war and its after-effects.[4] The end of the war did not bring an end to health crises or to violence. The former territories of the Russian Empire were engulfed by civil war. By the time it ended, the population had fallen from 143 million to 134 million. Contemporaries were deeply worried by the risks posed by typhus and tuberculosis. In 1916 the first major study of the history of epidemic disease in wartime showed how soldiers were more likely to die from contagious disease than through enemy action and that epidemic disease among soldiers sparked worse epidemics among the civilian population.[5]

In 1920, in the former imperial capital city of Vienna, one in four deaths was caused by tuberculosis. Nutrition and living conditions were so bad that local officials calculated death rates rivalling those of the bubonic plague (called the Black Death) centuries earlier, generally recognized as the deadliest pandemic in human history. At the time new scientific understanding, including the discovery of vitamins and the role of minerals, made it clear that food quality was as important as quantity to human health. But many people around the world struggled to get enough to eat, despite the fact that the world suffered from agricultural overproduction that caused commodity prices to slump after 1918. Some 60 million peasants in Eastern Europe, for example, did not produce enough bread locally to get them through the year and thus faced a persistent cycle of rural undercapitalization, underemployment, malnourishment and misery. The sense of crisis among small-scale farmers and landless peasants in Asia and Europe was amplified by apparent threats posed by the emergence of industrial-scale food production on the American and Australian continents and the collectivization of agriculture in the Soviet Union after 1927.

The crisis in rural communities was matched by the crisis of joblessness in urban ones. Until the late 19th century impoverished rural workers could move to cities that were developing fast as a result of industrialization and urbanization or migrate between countries. But new migration controls introduced before World War I and strengthened during it locked labour markets behind national and imperial frontiers, and cities, too, struggled to absorb rural poor people.[6] The danger of unemployment —evident already in the 1920s as the world economy adjusted from the dislocation of the war and the move from heavy industry that characterized the first wave of industrialization to a new focus on consumer industries—expanded into a full-blown crisis in the Great Depression. No country was left untouched, but the spectacle of large-scale destitution in the United States—the world's biggest economy, which had roared in the 1920s—shocked informed publics worldwide.

By the end of 1930s, observers were in no doubt that the onslaught of these crises, which came in quick succession, radicalized world politics. The 1920s and 1930s were rich in revolutions initiated by the left and military putsches or states of emergency on the right. But the record of these radical regimes demonstrated that these administrations, too, had no effective answer to the challenges facing human development in a world where interdependence faced new and rising barriers: currency controls, trade protectionism and strict limits on migration.

The inequality already endemic among different people and social groups was given a dangerous and immoral twist in fascist, nationalist and authoritarian regimes. They wanted to improve the standard of living for people who they claimed as their own but saw the resources from which improvement would come as finite. Adolf Hitler, the German dictator, saw himself as a *Raumpolitiker,* a spatial politician, who demanded that the world be reshaped to match the quest for *Lebensraum,* or living space. His Axis alliance with Italy and Japan was gripped by the battle —it became World War II—for the "right sort" of material, human and physical.[7]

Crisis served as an opportunity for radical leaders of the Axis powers to introduce policies intended to raise living standards for their selected people and reduce them markedly for ethnonational and socioeconomic categories they identified as the enemy, both within and beyond their national frontiers. Axis leaders were determined to break their dependence on other states and on international norms and to control their own destiny. At the same time, beggar-thy-neighbour policies, as contemporaries called them, were not confined to dictatorships. They were adopted by states everywhere in autarkic and isolationist measures that left the world economy depressed and set back human development.

Mutual help and institutionalized cooperation addresses interdependence

Historians have long debated the degree to which modern warfare plays a central role in the emergence and consolidation of the modern state. Paradoxically, major wars also make political leaders—regardless of whether their countries are at war—acutely conscious of the international context. As when Japan went to war against China in 1937 and Germany attacked Poland in 1939, the nationalism that characterized politics after 1918 gave way to the internationalism of war. It also set up new pathways to international cooperation in managing global interdependence.

In World War II leaders of the Allied powers were determined to see crisis as opportunity. The dominant impulse was to learn from but break with the past. This time, policymakers anticipated that there would be substantial postwar challenges and probably crises. The League of Nations, the forerunner to the United Nations, helped determine the basis for cooperative discussions among Britain, China, France, the Soviet Union and the United States, among other powers. Its view was that the problems of interdependence in a world of geopolitical rivalries "did not lend themselves to settlement by formal conferences."[8] Instead, it suggested, "the primary object of international cooperation should be mutual help … above all, the exchange of knowledge and the fruits of experience."[9]

In contrast to World War I, the planning for peace came early—as soon as the United States entered the war in December 1941. In contrast to World War I, too, when geopolitical questions around borders and disarmament took priority, the focus after 1941 was on economic and social issues. The move recognized the importance of economic and social questions to the prospects for human development and that the needs of national economies had to be understood and managed with those of the world economy. The first organization of the new United Nations was announced in 1943 at a meeting in Hot Springs, Virginia. The new UN Food and Agriculture Organization was part of a new international will to jointly tackle problems under the general heading of freedom from want.[10]

This was underlined in new and discrete institutions—the International Bank for Reconstruction and Development (the World Bank), the International Monetary Fund, the United Nations Relief and Rehabilitation Administration (intended to oversee postwar reconstruction). A new organization was also planned to address trade protectionism—it became the General Agreement on Tariffs and Trade.

Although these institutions were new, they built on pathways to cooperation established by the League of Nations in 1919. At the start its focus was disarmament and peace. But the interwar crises encouraged new capacities in the organization, notably in relation to economic, social and health questions—for example, the World Health Organization, set up in 1945, was an extension of the League of Nations Health Committee. We often think of the League of Nations as a failure because it was unable to prevent conflict among member states. But the organization established key ideas and practices to effect multilateral cooperation that lived on in new global and regional institutions.[11] It also offered small and middling-size powers an enhanced international platform. They could be heard on terms of nominal equality with bigger powers that conventionally called all the shots.

After 1945 new stress on the need to manage and support the economy for social good was matched by the attitudes of governments that had new policy tools and information at their disposal, demonstrating a new confidence in the world's major states that they could handle crises nationally and internationally and a recognition of the interdependence of global, national and local stability. In 1945 the United States was wealthier and stronger than it had ever been in absolute and relative terms. In contrast to 1919, when both the United States and the Soviet Union were absent from the League of Nations, this time, both countries committed to supporting new international institutions to promote cooperation. There was strong agreement about the need to coordinate efforts on an international and regional basis to avert economic and social crises that, without cooperation, would lead to disaster as they had after 1914 and 1937.

Power politics could still get in the way of cooperation. Experts and policymakers were frequently divided over the details of specific measures, and bitter political disputes among China, the Soviet Union and the United States in the 1950s and early 1960s limited cooperation on some questions. It also generated rival attempts to address common dilemmas, with capitalism and communist powers competing to support the modernization aspirations of parts of Africa and Asia, for example. The history of mutual independence in the face of crises during these two postwar eras reveals that cooperation on specific initiatives was rarely the product of collective will. Rather, as in the 1940s, individual people and groups with big ideas promoted cooperation in ways that gave people hope in the world's darkest hours. The international organizations and practices they developed recognized that societies and markets were mutually interdependent. The institutionalized world order created after 1945 was not the product of consensus or the end of argument. Instead, it reflected agreed rules and understandings of the terms under which conflict took place.[12]

NOTES

1. Bogart 1920.
2. Zhvanko and Gatrell 2017.
3. Eichengreen 1992.
4. Barry 2004.
5. Prinzing 1916.
6. Lake and Reynolds 2008.; Zieger 1969.
7. Overy 2021.
8. League of Nations 1939.
9. League of Nations 1939.
10. Staples 2006.
11. Clavin 2013.
12. Hurrell 2008.

Managing global interdependence to advance human development

Humans are relational beings.[1] Social, economic and environmental relations shape values, opportunities and choices, implying that human development is a function not only of what people have or can do but also of how they relate to others, to the society they live in and to nature. Throughout the lifecycle people are embedded in social networks where they are at times dependent on and at times interdependent with others who influence opportunities, constraints and wellbeing[2] (box S2.2.1). Social contexts and relations also shape preferences and can lead to behaviours and practices that perpetuate social norms, including harmful ones.[3] For example, strong gender norms and biases against gender equality can influence women's aspirations and discourage them from pursuing certain types of careers or occupations.[4] Social norms can also greatly influence attitudes and behaviours in relation to nature and the planet (chapter 4).[5]

The spillovers between social contexts and human development outcomes can create vicious or virtuous cycles.[6] For example, positive family relations and supportive parents are key for early childhood development,[7] which can later contribute to stronger education achievements that translate into higher earnings in adulthood.[8] Positive family and work relations also contribute to better mental health and wellbeing and "provide the conditions for the same positive relations to be perpetuated in an individual's own parenting and other future relationships."[9] By contrast, human development inequalities and deprivations can compound over one's lifecycle and into future generations.[10] Scrutinizing these social externalities in a systematic way may help unveil new mechanisms for harnessing interdependence that goes beyond correcting for market failures[11] (chapter 4). For example, leveraging parental altruistic instincts can extend solidarity and prosocial behaviour beyond one's immediate family.[12] Even the existence and influence of social norms on behaviour suggest that these can be harnessed in ways that enhance human development and the stewardship of nature.[13]

Relational wellbeing extends to the group, society and even planetary levels—the focus of this chapter. Leveraging humans' hypersociability[14] and ability to form bonds with each other has played a pivotal role in facilitating cooperation and exchange even between strangers, enabling the formation of large-scale societies and complex economic systems. Insights from evolutionary theory and cultural and social psychology shed light on this trajectory (chapter 4).[15]

This does not imply that cooperation is inevitable, as countless examples of conflict and power struggles demonstrate. Different societies, facing different constraints and contexts, have developed a variety of mechanisms for cooperation,[16] through social norms or codified in formal laws and regulations (chapter 4). The insights do, however, reveal that drawing on humans' relational capacities to cooperate and leveraging a "collective brain"[17] have been important in fostering progress. Indeed, throughout human history larger and more interconnected societies have been able to "sustain more complex technologies, languages, institutions and behavioural repertoires."[18]

Knowledge and innovation have been powerful, perhaps fundamental, drivers of human development. Ideas build on each other and are combined in processes that require people to work together.[19] Engaging with other people can facilitate the direct sharing of ideas and enable indirect spillovers of knowledge, particularly when it is concentrated geographically, explaining why cities provide fertile ground for new ventures and technological advances.[20] At the same time global trade and long-distance connections enable local economies to overcome production constraints and natural endowment limitations, to support the flow of ideas[21] and to tap into powerful forces of economies of scale and specialization. These connections

Box S2.2.1 Relational and interdependent wellbeing

By taking relationships as morally significant, relational approaches shape our way of understanding wellbeing and recognize the need for richer wellbeing tools and methods.[1] They do this by taking wellbeing as contingent on the quality of our relationships with other people and with nature. More than this, relational wellbeing acknowledges the way relationships feature within and across connected communities, including globally connected and intergenerational relationships. In so doing, relational approaches provide a starting point for confronting global, ecological and intergenerational challenges while also providing community perspectives to generate new solutions.

Relational frameworks extend the capabilities approach by highlighting how an individual's wellbeing is constituted through the interplay of personal, social and environmental processes.[2] Relationships become critical for living well—as means to or constraints on flourishing. Taking individuals as parts of a diverse network of social, cultural, ecological and intergenerational connections, relationships are understood as not just means to living well but vital for our identities too.

The wellbeing of humans, as relational subjects,[3] is not merely bound up with others, but informed by our vulnerabilities, social needs and environmental dependency. By recognizing that our wellbeing is intimately bound up with the health of the natural environment, we can come to understand how climate change affects not only our physical health but also our mental health, social cohesion and cultural identity.[4]

Such approaches can be found in Indigenous communities worldwide. Relationships often provide a vastly inclusive and multidimensional way of grounding and structuring the conceptual framework and territory for Indigenous philosophies to take shape and evolve. Indigenous communities enact relationality under stewardship notions, such as *kaitiakitanga* in New Zealand,[5] *sumac kawsay* and *allin kawsay* in South America,[6] *Aloha* and *Mālama ʻĀina* in Hawaiʻi[7] and *Mabu liyan* (and other notions that incorporate caring for country for Aboriginal and Torres Strait Islanders) in Australia.[8] For many Indigenous communities these relationships are so profound that their loss may present existential threats to their way of life (chapter 1). In Jonathan Lear's *Radical Hope,* Crow Tribe Chief Plenty Coups describes a sense of loss, identity and purpose felt across Indigenous groups in the face of disappearing landscapes and biodiversity: "When the buffalo went away, the hearts of my people fell to the ground, and they could not lift them up again. After this nothing happened."[9]

Relationality is found in various feminist approaches across and between communities and disciplines,[10] in health and ecological system thinking[11] and in local communities themselves too. By emphasizing the interconnectedness and interdependence of human beings across borders and boundaries, these approaches provide different perspectives and innovations. They also foster a sense of global solidarity and help us cope with the uncertainty and complexity of a changing world by fostering adaptability through learning, social support and relationship building.

Notes
1. This box greatly benefited from the contributions of Krushil Watene. **2.** White and Jha 2023. **3.** White and Jha 2023. **4.** Allen and others 2023; Grix and Watene 2022. **5.** Grix and Watene 2022. **6.** Watene and Merino 2018. **7.** Ingersoll 2016. **8.** Yap and Yu 2019. **9.** Lear 2006, p. 3 **10.** Murdock 2018; Teaiwa 2021; Underhill-Sem 2011; Yap and Watene 2024; Whyte 2016. **11.** Jones 2019; Matheson 2022; Matheson and others 2020.

also foster learning, innovation and knowledge transfers that can enable companies and places to up-skill and increase productivity and income.[22]

Harnessing global cross-border connections and leaning into cooperative capacities have brought a lot of prosperity. Global cross-border flows expanded economic opportunities and productivity growth, with unprecedented increases in living standards for millions of people.[23] International migration has contributed to cross-cultural connections,[24] enriching the world's art, musical and cultural landscape.[25] Knowledge exchanges and international scientific collaborations have driven critical breakthroughs and advances in human health. For example, the discovery of the human immunodeficiency virus (HIV) and its treatments,[26] the recent development of Covid-19 vaccines[27] and the mapping of the human genome—all relied heavily on cross-border collaboration.[28]

To continue harnessing the benefits of interdependence, we need to manage interdependence better and to find ways of doing it without reverting exclusively to barriers at national borders. Even though they may be justified in some cases to manage the risks of hyperglobalization, they will not suffice to deal with the ways in which global interdependence is being reshaped by humans' planetary pressures and the digital transformations under way. Furthermore, the inward-looking and protectionist actions advocated by many supporting or leading populist positions are also costly[29]—and potentially dangerous (spotlight 2.1). Trade fragmentation can increase price volatility and heighten uncertainty in global markets.[30] Low-income economies, highly dependent on international commodity trade, may incur the largest welfare losses with the fragmentation of global markets.[31] But even large high-income economies and regions are susceptible to welfare losses under different geoeconomic fragmentation scenarios.[32] In contrast, place-based policies that complement, rather than replace, international cooperation can spur economic development and support firms and regions in harnessing the benefits of global interdependence.[33] This might entail shifting local and regional economic development policy approaches from a logic of up-scaling of primary goods to manufacturing to service exports, to investing in skills that allow for moving from low- to high-value added activities within global value chains.[34]

Going forward, the Anthropocene reality of a changing planet, in combination with large-scale economic transformations and technological innovation, will reshape and propel new patterns of interdependence. In this sense our choice is not between global interdependence and complete national self-reliance. It is between continuing business as usual or taking seriously the challenge of building systems and institutions that are resilient and adaptable to an evolving context.

The globalization of discontent calls for shifting the approach to managing global interdependence. Reduced global exchange and cooperation in favour of isolated nationalism are unlikely to help us face the challenges that arise from the current drivers of interdependence. But neither is unregulated globalization or hoping for a pure technological solution to challenges that span borders.[35] In a globally interdependent world we need to identify and pursue our shared problems and how to address them (chapter 3).

NOTES

1. Diverse knowledge traditions and philosophical schools of thought emphasize the relational aspect of humans. For example, the South African concept of Ubuntu—"I am because we are"—highlights the importance of community in defining the individual (Chowdhury and others 2021). Confucian ethics stresses the importance of fulfilling one's roles and responsibilities in relation to others (Shun and Wong 2004). In western philosophy Aristotle, for example, argued that that humans are political animals whose ability to cooperate through speech and reason is a defining feature (Arnhart 1994) Much later, feminist scholars have stressed the importance of relational and reproductive work to maintain the conditions of human life, such as caring for infants (see, among others, the work of Nancy Folbre, including Folbre 2008, 2012; Folbre and Bittman 2004; and the work of Julie A. Nelson, including Ferber and Nelson 2009).
2. Settersten 2018.
3. Hoff and Stiglitz 2016.
4. Tabassum and Nayak 2021.
5. UNDP 2020b.
6. Fleurbaey, Kanbur and Viney 2021.
7. Jeong and others 2021.
8. In Gertler and others (2021) a home-based intervention that improved both nutrition and the quality of mother-child interactions (to foster cognitive, language and psycho-social skills) led to approximately 40 percent higher earnings at age 31 among the children who had received the interventions, compared with a control group.
9. Fleurbaey, Kanbur and Viney 2021, p. 18.
10. UNDP 2019.
11. Fleurbaey, Kanbur and Viney 2021.
12. Fleurbaey, Kanbur and Viney 2021.
13. UNDP 2020b.
14. Henrich and Muthukrishna 2021.
15. Henrich 2023; Henrich and Muthukrishna 2021; Henrich and others 2016; Tomasello and others 2012.
16. Henrich and Muthukrishna 2021.
17. Henrich 2023; Henrich and Muthukrishna 2021.
18. Henrich 2023, p. 407.
19. Romer 1994.
20. Bettencourt and others 2007; Fujita, Krugman and Venables 2001.
21. The Ricardo and Heckscher–Ohlin models provide the foundations of the international effects on income; see, for example, Leamer (1995).
22. Crescenzi and Harman 2023. See also Stiglitz (2007) and Stiglitz and Greenwald (2014), as well as Grossman and Helpman (1991), Hoekman, Maskus and Saggi (2005) and Sturgeon (2008).
23. Bartley Johns and others 2015; Dollar and Kraay 2004; Winters, McCulloch and McKay 2004.
24. Leblang and Peters 2022.
25. Martiniello 2022.
26. National Academy of Medicine 2022; Schwetz and Fauci 2019.
27. Lee and Haupt 2021; UNESCO 2023.
28. International Human Genome Sequencing Consortium 2004; Maxson Jones, Ankeny and Cook-Deegan 2018.
29. Funke, Schularick and Trebesch 2023.
30. Alvarez and others 2023.
31. Bolhuis, Chen and Kett 2023.
32. Baba and others 2023.
33. Goldberg 2023.
34. Crescenzi and Harman 2023.
35. As seen in chapters 3, 5, and 6, in many cases technologies such as low-carbon energy sources already exist and could be scaled, but polarization and distrust can put up barriers to action.

CHAPTER

3

Providing global public goods to manage interdependence

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Mismanaged interdependence imposes costs, or even setbacks, to human development. But managing it can be enhanced by framing it as providing global public goods, such as global peace and climate change mitigation, as explicit goals.

Applying a global public goods lens to the Covid-19 pandemic yields three key insights about enabling better responses in the future. First, is for a range of different types of global public goods, mechanisms can be designed to address the bottlenecks for each type. Second, what constitutes global public goods is often a matter of choice, and providing them can bring countries together. Third, institutions can be created to enhance the provision of global public goods.

A global public goods lens helps in better managing global interdependence. It shifts us out of zero-sum tribalism that the Report recognizes as a problem and into a frame of mind that rightly matches shared action to shared problems, without assuming that all disputes will dissipate or that diverging interests will not persist. It shifts our thinking from a defensive fatalism or endless problematizing to recognizing human agency, thus enriching clear-eyed, practical conversations about and action on shared futures. In mobilizing shared action, we not only stand a better chance of doing better overall; we also stand a better chance of not leaving people behind. The shift in frame also opens our imaginations to lots of other potential ways forward, and we can sift through those options better and more systematically using what we know about global public goods and what we have learned about them—in research and in practice—over many years. We save time, energy and resources to get to better, more equal outcomes. And then—success can breed success.[1]

A global public goods lens helps in understanding features and patterns that may be shared across a wide range of global challenges, and it can better prepare the world to anticipate new challenges. It does so by enabling a more systematic approach to identifying and addressing emerging challenges characterized by interdependence, even ones we cannot anticipate today.

“Managing interdependence can be enhanced by framing it as reflecting the need to provide global public goods, such as global peace and climate change mitigation, as an explicit goal

The horrifying human toll of violent conflict, the ravages of climate change, the reconfiguring of global trade, a new cycle of debt distress, the lives lost to Covid-19—all make it clear that we live in a highly interdependent world where physical and digital things, from viruses to misinformation, quickly spill across national borders. As we move further into the Anthropocene, where humans drive planetary change in unprecedented ways, we will have to respond to economic, social and environmental challenges that are planetary in scale. As the previous two chapters demonstrate, global interdependence is being reconfigured, and mismanaging it imposes costs, or even setbacks, to human development. Managing interdependence can be enhanced by framing it as reflecting the need to provide global public goods, such as global peace and climate change mitigation, as an explicit goal. This is already being taken up through proposals to reform multilateral governance[2] and multilateral development banks in order to broaden their mandates to support national contributions to global public goods.[3]

What are global public goods?

We begin with a concrete example that schoolchildren around the world learn about every year: knowledge of triangles. Determining the length of the sides of triangles has long been of concern to mathematicians and philosophers, not to mention engineers and builders. For instance, if we know the lengths of two sides of a triangle, what can we know about the length of the third side? It turns out that for specific kinds of triangles, quite a lot. The Pythagorean theorem[4]—a classic of geometry—gives us a rule to calculate the length of the third side for right triangles. This rule helps us understand other basic shapes, such as circles, and underpins much of what we can build in our minds and in the real world.

The Pythagorean theorem, like much knowledge, exhibits the distinguishing features of global public goods. When someone applies the theorem, it does not detract from anyone else in the world doing the same. The theorem is used, and has been used, by many people at the same time in construction, navigation, mapmaking and numerous other activities.[5] And it is very hard, if not impossible, to prevent anyone from using the theorem[6] because it is not held exclusively by a firm that controls the conditions for its use. Nor is it circumscribed by the borders of a country with the sovereign power to decide how people living in other countries can use it.[7]

These two characteristics—that use by one person does not prevent someone else from using it at the same time and that it is hard to exclude anyone from using it—make the Pythagorean theorem a global public good.[8] So are all mathematical theorems in the public domain, and so are other insights about the natural world and about how economies and societies function and change. In short, ideas and knowledge in the public domain are global public goods.[9]

Other global public goods include identifying and containing diseases with global reach, mitigating climate change, preventing and containing the spread of international financial crises, maintaining international peace and fostering cybersecurity.[10] Some global public goods cannot be envisioned now because we simply lack the knowledge to identify them—in the same way that science and detection technologies only recently made it possible to document the depletion of the ozone layer or establish the human cause of climate change.

> “A global public goods lens is useful in managing challenges or opportunities that spill across borders. It is also useful in confronting and redressing dangerous planetary change

Global public goods can also be created; they are not always simply given. For example, through the Montreal Protocol, the world is providing the global public good of avoiding depleting the stratosphere's ozone layer, which shields all life from the sun's harmful ultraviolet radiation. Both technology and social choice shape the conditions of production or consumption that can determine whether someone can be excluded.[11] For example, broadcast television channels have the potential to reach anyone with a receiving device, whereas cable television (an alternative technology) channels are available only to those who subscribe to a cable television service (access was made excludable as a result of a new technology and social choices on how to deploy it).

There is often some discretion, given the state of technology and the inherent characteristics of the good in question, to determine through social choices what is, or is not, a global public good. And some technologies—such as those that sustain our digitally connected world, allowing for the instantaneous sharing of information by practically all 8 billion people living on Earth today—create conditions of interdependence that can call for new global public goods.[12] In the context of the Digital Revolution, this includes what have been described as digital public goods (box 3.1). Thus, providing global public goods, often rightly framed as a problem to be solved, can also be purposefully deployed to mobilize action towards addressing shared challenges.[13]

A global public goods lens is useful in managing challenges or opportunities that spill across borders. It is also useful in confronting and redressing dangerous planetary change.[14]

Cross-border challenges and opportunities as global public goods

The outbreak of a communicable disease that moves across borders has negative spillovers that can be managed through the global public good of communicable disease control. Global public goods always involve international spillovers that reflect uncompensated interdependence among countries (meaning that one country makes decisions without regard to the impacts that those decisions might have on other countries).[15]

In recent decades spillovers with global reach have been driven by policy choices (how much countries allow for the flow of people, goods, services, finance and information), by technologies (which determine the cost, speed and ease of cross-border flows) and by the way the two interact (see chapter 2). Even though policies can constrain cross-border flows, technology may make that hard (many people can easily catch an airplane flight and share information globally over digital networks). But there are some global public goods for which stopping flows at the border—and managing them in that way—is not feasible: this includes what can be considered planetary public goods.

Planetary public goods: An emerging and enduring class of global public goods

The reality that humans share a single planet with one another and other forms of life, today and well into the future, implies that processes of dangerous planetary change can be framed through a global public goods lens.[16] Consider managing the global commons, such as open-seas fisheries (spotlight 3.1). The global commons are widely accessible resources but are not global public goods[17] because their use by someone implies that the resources extracted from them are not available at the same time to someone else, as with fishing on the open seas.[18] But restricting

Box 3.1 **Digital public infrastructure and digital public goods**

Diane Coyle, University of Cambridge

As this chapter has noted, technologies are among the sources of promise and peril for the world in the years and decades ahead. On the one hand digital public goods—open-source software, artificial intelligence (AI), standards and content—offer opportunities for economics and social development, particularly for low-income countries.[1] On the other hand the rapid development of generative AI in particular has led to concerns ranging from the proliferation of deep fakes and misinformation to a potential destabilizing geopolitical arms race to advance and deploy AI. With the technology continuing to develop rapidly, this is the moment when the future path for the world will be decisively shaped by actions taken now.

One of the areas in which the positive potential has begun to emerge clearly is in identity and payments systems, a technology stack that has come to be known as digital public infrastructure. This consists of a system of identification (which can be biometric), payments structures and data; a digital public infrastructure can be used not only for mobile payments but also for delivering welfare benefits and other public and private services. The best-known examples are the India Stack, founded on the identification platform Aadhar,[2] and Estonia's X-road.[3] Several other countries have begun to adopt these platforms or to digitize identity and public services using other solutions, and under India's leadership the Group of 20 (G20) recently affirmed a commitment to using digital public infrastructure for development.[4]

The initiatives are not without problems, including concerns about access for marginalized groups and errors or procurement delays.[5] Digital public infrastructure should not be seen as a panacea; it is important to avoid techno-hype and to learn from early failures. Nevertheless, digital technologies do offer new opportunities for development, just as the mobile and broadband revolutions from the mid-2000s created economic possibilities for people and businesses in low- and high-income countries alike. While the United Nations Development Programme has emphasized the importance of digital public goods for moving towards the Sustainable Development Goals, the time has come to consider what aspects of digital technology should become development goals in themselves and to engage in granular debate about appropriate policy environments.[6]

At the same time there is a need to ensure that future developments in AI, and in the supporting infrastructure of data centres, undersea cables, chips and data, do not lead to a zero-sum arms race. In the current global environment generative AI and advanced chip manufacture are too often seen only through a national security lens, an essential perspective but only part of the global picture. There have been many international codes of AI principles in recent years—for example, by the G20 and the Organisation for Economic Co-operation and Development (OECD)—but too little substantive, detailed debate about effective global governance given the characteristics and affordances of the technology and the existing structures of market and political power.[7]

Notes

1. For definitions and examples of applications to advance development, see https://www.un.org/techenvoy/content/digital-public-goods (accessed 17 February 2024). **2.** https://indiastack.org/ (accessed 17 February 2024). **3.** https://e-estonia.com/solutions/interoperability-services/x-road/ (accessed 17 February 2024). **4.** G20 2023b. **5.** Howson and Partridge 2022. **6.** UNDP 2023c. **7.** On the G20, see https://www.mofa.go.jp/policy/economy/g20_summit/osaka19/pdf/documents/en/annex_08.pdf; on the OECD, see: https://www.oecd.org/science/forty-two-countries-adopt-new-oecd-principles-on-artificial-intelligence.htm (both accessed 17 February 2024).

the depletion of the global commons—for example, avoiding depleting the ozone layer—can be framed as a global public good.[19] Some negative environmental externalities such as cross-border air pollution cannot be stopped at borders. Migratory birds fly across countries and sometimes continents, interweaving nature from different territorial demarcations.[20] These examples of interdependence justify the long-standing international management of environmental challenges, as reflected in the growing number of multilateral environmental agreements, which have accelerated since the 1980s.[21]

Knowledge and awareness of some of these global environmental externalities are increasing—enabled in part by technologies for monitoring biophysical flows and in part by scientific advances in understanding their interactions. For example, recent advances in hydrology have determined that water cycles depend on what happens not only with surface water (including rivers and lakes, with well-known transboundary challenges) or groundwater (including aquifers) but also with terrestrial moisture recycling (moisture that enters the atmosphere via evaporation or plant transpiration and travels with the wind across countries and even continents, eventually falling as rain).[22] Terrestrial moisture recycling accounts for 40 percent of annual precipitation on land—and as much as 75 percent in some places.[23] So these are very important global processes in determining local rainfall patterns, which can be crucial for supporting agriculture or predicting floods and droughts. As an example of the global interdependence associated with moisture recycling, consider how tropical forests contribute substantially to land evaporation globally.[24] Deforestation in one region can reduce rainfall in regions far away, with particularly serious implications for rainfed agriculture.[25]

> "A planetary public goods lens, as part of a broader global public goods lens, provides an analytical framework that brings structure to a wide range of challenges and opportunities associated with global interdependence and can be leveraged to mobilize action at multiple levels

Patterns of disruption of planetary biophysical processes, including on global terrestrial moisture recycling, are reaching an unprecedented speed and scale.[26] This suggests that we are living in an entirely new geological epoch: the Anthropocene.[27] There are, of course, better known manifestations of these disruptions—including, most prominently, the depletion of the ozone layer, climate change and threats to the integrity of ecosystems and biodiversity, all of which have been analysed through a global public goods lens.[28] At-the-border policies can do little or nothing to manage or restrict the spillovers associated with these disruptions, given that they emanate from the reality of all humans living on a shared planet. Planetary public goods are thus a special category of global public goods, and the reality of the Anthropocene will persist well into the future.[29] So providing planetary public goods is not only of crucial importance today but also a challenge that will persist for future generations.[30] That includes considering the biosphere (the thin layer of life that surrounds the planet and in which we and our development are embedded) a planetary public good. The provision of this specific planetary public good could be assessed by the extent to which the biosphere's global integrity is preserved. The biosphere and its global integrity mediate large-scale responses in the Earth system that could affect its suitability for complex human societies.[31]

A planetary public goods lens, as part of a broader global public goods lens, provides an analytical framework that brings structure to a wide range of challenges and opportunities associated with global interdependence and can be leveraged to mobilize action at multiple levels.[32] Doing so requires adding more structure to what is required to provide global public goods beyond simply defining them.

What does it take to provide global public goods? They are not created equal

Recall the Pythagorean theorem. How did this global public good come about? Although attributed to Pythagoras, it was known hundreds, even thousands, of years before Pythagoras to people living in Babylon, Egypt and the Indian subcontinent.[33] Once it became known, as with ideas more generally,[34] it took the form of a global public good. This simple example shows that global public goods are ubiquitous and plentiful, shaping how economic activity as well as political and social life is organized.[35] It also shows that, despite being available for everyone, global public goods do not benefit everyone equally.[36] For ideas,[37] such as the Pythagorean theorem, emanating once in one country would be enough for the global public good to be provided.[38] Many global public goods are of this type, but there are other types of global public goods for which the level of provision is determined by the aggregation of country contributions in other ways.[39]

How country contributions aggregate to determine the level of provision of global public goods

Global public goods can be classified as different types, including by how the aggregation of individual country contributions affects the level of provision. There are many different methods of aggregation.[40] Three key types of global public goods are considered here, distinguished by their aggregation method: best-shot, summation and weakest-link (table 3.1). Different global challenges fit within each of these three types, so by bringing a framework that finds commonalities across issues that seem widely disparate, a global public goods lens can tailor management of these issues without reinventing the wheel every time. Learning from successful efforts in managing global challenges in one area can inspire responses in other areas that share similar features,

Table 3.1 Recommendations for how to improve the provision of different types of global public goods

Aggregation	Provision prognosis	Recommendations
Best-shot (for example, scientific breakthrough)	Likely to be provided if incentives are strong enough for the best shooter to contribute	Rich or dominant country fosters provision, but multilateral institutions can pool actions or coordinate among multiple potential best shooters
Summation (for example, climate change mitigation)	Tendency for underprovision due to free or easy riding because contributions are perfectly substitutable	Grants and loans are needed to foster fairness, and multilateral institutions are needed to monitor and track contributions
Weakest link (for example, disease control)	More likely to be provided if interests and capacities are similar; if there is a need to shore up poor countries, free riding concerns may emerge if support is to be pooled across high countries; risk of a "spoiler" blocking provision	Capacity building is essential to enhance the contributions of those least able to contribute; income redistribution makes provision more likely

Source: Human Development Report Office based on Buchholz and Sandler (2021).

in terms of how the aggregation of country contributions determines the level of provision of global public goods.

Best-shot global public goods. When the contribution of the country that contributes the most determines the level of provision, we are in presence of a best-shot global public good. Potentially only one country is enough to fully provide a best-shot global public good. Consider an Earth-destroying asteroid. It needs to be diverted or destroyed only once to protect everyone on the planet.[41] Though a seemingly far-fetched scenario, one country, the United States, is investing in the global public good of protecting the planet from this threat—and successfully diverted the orbit of an asteroid, in a test of the capabilities that might be required.[42] The test was done unilaterally, and if the world were to ever confront an incoming asteroid, presumably the country would act alone in providing the global public good of diverting it.[43] In a scenario where multiple countries have the interest and ability to contribute, the country that contributes the most single-handedly determines the level of provision of a best-shot global public good.[44]

Summation global public goods. Even if one country were to unilaterally stop emitting greenhouse gases, the atmospheric concentration of those gases would still be determined by what all the others emit.[45] Thus, stabilizing the concentration of greenhouse gases (critical for climate stability) is a summation global public good. Each ton of greenhouse gas emissions is perfectly substitutable by the emissions from any other country—that is, from the atmosphere's perspective it does not matter where emissions reductions come from.[46] Unlike best-shot global public goods, the sum of the contributions from countries—often, as in stabilizing the concentration of greenhouse gases, from most if not all countries—determines the level of provision of summation global public goods.

Weakest-link global public goods. Many more types of global public goods associated with different ways of aggregating country contributions could be explored, but a third one merits special attention: when the level of provision is determined by the country least able to contribute. This is the case for communicable disease control: even if all countries but one are able to control the spread of the disease, the world as a whole is left vulnerable to the threat, because a disease outbreak can occur in the country with the least ability to control the disease.[47] This type of aggregation corresponds to a weakest-link global public good, since the country that contributes the least determines the level of provision of the global public good for the world as a whole. Other examples include the surveillance of a financial crisis that could spread across countries.[48]

When the country that contributes the most determines the level of provision: Best-shot global public goods

For best-shot global public goods, if at least one country sees that provision is in its interest and can contribute what is required (making it the best shooter), it will likely (but not inevitably) provide the global public good when it has the resources to do so.[49] Before the creation of multilateral financial institutions after World War II, the provision of international liquidity of last resort was a best-shot global public good: it took only one country to be able and willing.[50]

If several countries are pursuing the provision of the same best-shot global public good, coordinating efforts to enable the best shooter or pooling efforts to seek complementarities (through multilateral organizations, for instance) enhances efficiency and often the prospect of success.[51]

Best-shot global public goods are a double-edged sword. They are likely to be provided when resources are aligned with the interests of the best shooter, but they leave the world vulnerable to a situation where the best shooter is able but unwilling to contribute. Thus, countries may be motivated to pool resources[52] for multilateral approaches that make the world less vulnerable to a misalignment between the ability and the willingness to contribute to a best-shot global public good. Even then, higher income countries with more resources and capacities are essential in providing best-shot global public goods, given the need for concentrated action.

> "Best-shot global public goods are a double-edged sword. They are likely to be provided when resources are aligned with the interests of the best shooter, but they leave the world vulnerable to a situation where the best shooter is able but unwilling to contribute

It is possible to think of other ways of solving the misalignment of ability and willingness to provide best-shot global public goods. For example, a country with enough resources to provide a best-shot global public good might be compelled to contribute as a demonstration of leadership or by being responsive to an appeal to conform with international norms. And agents other than states—for instance, civil society organizations and philanthropic foundations—can play a key role in shaping those norms, both across and within countries, so that countries with resources do provide best-shot global public goods.[53]

When every country's contribution adds cumulatively: Providing summation global public goods

Countries pursuing exclusively their self-interest typically face incentives to contribute little, or not at all, to summation global public goods, because of the possibility that some countries may free ride (not contribute) or easy ride (contribute few resources).[54] Thus, countries will tend not to contribute enough to reach what would be collectively desirable for the world.[55] Since countries vary in both interests and resources, these differences further exacerbate the challenge of providing summation global public goods.

Diverse interests must be reconciled, and agreement reached on how much countries will voluntarily contribute. Fairness becomes paramount in shaping agreement.[56] Addressing fairness may require international transfers or resources from countries that have larger endowments or that have contributed most to the problems, as with greenhouse gases in the atmosphere, determined by current and past emissions.[57] Many negative impacts of climate change will happen faster and with greater intensity in the regions that have contributed the least to climate change.[58] And international transfers may be motivated not by altruism but by a desire to redress injustices, which may be required to enhance the prospects of widespread contributions to a summation global public good.[59] Global public goods often require new and additional resources, and it is crucial that these are not siphoned off from flows provided with a different motivation, such as official development assistance.[60]

When it all boils down to the country that contributes the least: Providing weakest-link global public goods

In contrast to summation global public goods, the incentives look very different for weakest-link global public goods. If all countries share similar interests and resources, there is no incentive for any country not to contribute.[61] Of course, countries' endowments and interests differ, so when interests are shared, prospects for providing weakest-link global public goods improve as resource inequality declines across countries,[62] providing a strong rationale for international transfers of resources or capacities[63] from those that have them to those that do not.[64] But which better-endowed countries make the transfers (box 3.2)? Richer countries may find themselves facing free-riding concerns—and thus incentives to not contribute to these transfers. And perhaps counterintuitively, the higher the number of rich countries, the larger these free-riding concerns may be.[65]

As with best-shot global public goods, weakest-link global public goods are also somewhat of a

Box 3.2 What drives countries to contribute to global public goods?

Assumptions about human behaviour and their implications for how countries act in the international context shape perspectives on prospects for the provision of global public goods, as well as proposed measures that could be put in place to enhance their provision when those prospects are dim.[1] For example, some have argued that a hegemonic country was needed to provide the global public good of an international lender of last resort during global economic crises prior to the establishment of the Bretton Woods institutions.[2]

Given that countries generally act independently to preserve their autonomy (particularly with respect to security concerns),[3] it is reasonable to assume that prospects for providing global public goods will have to be explored in a context where the global community remains a system of politically autonomous states with diverse interests, preferences, resources and power, and thus heterogeneous willingness and ability to contribute to global public goods. It is also reasonable to assume that countries try to anticipate and strategically react to other countries' actions.[4]

To take a first pass at considering prospects for providing global public goods and ways to improve them when needed, one can start from the assumption that countries will consider contributing to global public goods based on the extent to which that contribution advances either their interests or preferences, constrained by the resources available to them.[5] This narrow premise is relaxed later in the Report.

Notes

1. As argued for the behaviour of states more broadly in Kirshner (2022). **2.** This is the argument put forward by Kindleberger (1986, p. 11), who was sceptical of relying on rules during those periods: "Let me conclude by emphasizing once again my concern that politicians, economists, and political scientists may come to believe that the system should be run at all times by rules, including regimes, not people. Rules are desirable on trend. In crisis the need is for decision." For arguments in the same vein, see Keohane (1984) and Axelrod and Keohane (1985). **3.** Kirshner 2022. **4.** This is what is assumed in most of the literature (Buchholz and Sandler 2021), including in Barrett (2003a), which is a rare case where economic analysis and international relations theory are marshalled to explore the provision of global public goods. **5.** This is what Ruggie (1998) described (critically) as a neo-utilitarian premise.

double-edged sword. Imagine a country that decides not, or is unable, to contribute to a weakest-link global public good (not curbing the spread of invasive species, not eliminating transnational terrorism or criminal networks or not stopping nuclear arms from proliferating). Then, the whole world is at risk. A country that decides not to contribute to a weakest-link global public good can act as a spoiler, impeding provision for everyone.[66]

Applying a global public goods lens to the response to Covid-19

Control of the transmission of the virus that causes Covid-19 (SARS-CoV-2) can be viewed through the prism of a weakest-link global public good: control cannot be achieved until it occurs in every country.[67] So the country with the least ability to control the virus's transmission determines the level of provision of this global public good for everyone else. The prognosis for providing weakest-link global public goods is favourable when countries have similar interests and resources, but the situation becomes more muddled in a world beset by disparities in both. Applying a global public goods lens early in the pandemic highlighted those challenges and potential remedies, including the crucial importance of transferring resources and capacity to countries less able to control virus transmission.[68]

Multiple global public goods are at play in addressing a pandemic. Several are not weakest-link global public goods, leading to some of the challenges in provision that can be expected with other types of global public goods.[69] Since Covid-19 was caused by a novel virus, these challenges were exacerbated by scientific uncertainty, as well as policy ambiguity and inconsistency.[70] The pandemic response involved providing weakest-link global public goods (controlling virus transmission), summation global public goods (pooling resources to shore up weak links) and best-shot global public goods (the science behind developing the vaccines, sequencing the genome of the virus). Multiple challenges at multiple scales with different agents made for a longer pandemic, with highly unequal access to the vaccines and the lasting human development effects documented in chapter 1 that burdened low- and middle-income countries in particular.[71] Explaining the challenges of providing different types of global public goods may enable better responses in the future.

Thus, the underprovision of global public goods, very costly globally, can also drive inequalities (spotlight 3.2). The impact of the Covid-19 pandemic should not have come as a surprise, given that the failure to control the transmission of some global communicable diseases results in the loss of lives, the inability of people to lead healthy lives and huge global economic costs.[72] In contrast, the returns to communicable disease control are very high, particularly for the weakest-link global public good of disease eradication. For the eradication of smallpox (certified in 1979),[73] the benefit-cost ratio was estimated to be more than 100 to 1,[74] and the benefits accrue in perpetuity to future generations.[75] Not all communicable diseases are eradicable,[76] but those that are (such as polio) continue to inspire efforts by the international community, precisely because the net benefits are so high.[77] Still, the weakest-link nature of disease eradication can be cruel. Although two of the three wild polio viruses have been eradicated (type 2 in 2015 and type 3 in 2019),[78] polio eradication efforts have not yet succeeded—and have missed several target dates—because the third strain (wild polio type 1) persists in only a few small areas in Afghanistan and Pakistan and vaccine-derived type 2 continues to circulate.[79]

“The underprovision of global public goods, very costly globally, can also drive inequalities

Three key insights emerge from the ensuing analysis. First is the need to consider a range of different types of global public goods with different aggregations and to design mechanisms that increase the chances of addressing the bottlenecks for each type of global public goods.[80] Second is that what constitutes a global public good is often a matter of choice, and the need for the provision of global public goods can be harnessed to bring countries together. Third is that institutions can be designed and created to enhance the provision of global public goods.

Too little disease surveillance

A key global public good for communicable disease control is disease surveillance, which itself can be considered a weakest-link global public good.[81] Underprovision may result from countries lacking the capacity to undertake surveillance. As of late March 2020, the World Health Organization (WHO) reported that 30 percent of countries lacked a Covid-19 national preparedness and response plan, and only half had national infection prevention and control programmes, as well as water, sanitation and hygiene standards for health care providers.[82]

But countries may face incentives that work against full disclosure of disease outbreaks to the international community, which can be exacerbated for a novel pathogen for which pharmaceutical solutions are not yet adequate.[83] Such incentives include fear of punitive actions by others in the form of trade and travel restrictions.[84] These unilateral measures were taken during the Covid-19 pandemic. For instance, South Africa reported to the world the new Omicron variant in November 2021, only to have several high-income countries ban flights from South Africa.[85] So, inequality in both resources and capacities—and in preferences to disclose outbreaks—worked against providing the global public good of Covid-19 surveillance. And measures that might have enhanced provision—contributing resources and capacities to countries in need and coordinating responses to the disclosure of new variants in a predictable way—were often lacking.

Lack of equitable access to vaccines

To deliver equitable access to future pandemic vaccines in 100 days[86] requires efficiently providing best-shot global public goods associated with science and technology and shoring up potential weak links in surveillance and vaccine production capacity.[87] That potentially includes creating vaccine manufacturing hubs, such as the Partnership for African Vaccine Manufacturing under the auspices of the African Union’s African Centres for Disease Control and Prevention,[88] and establishing a global treaty on pandemic prevention, preparedness and response under the World Health Assembly.[89]

A global public goods account about how the inequity in access to Covid-19 vaccines unfolded can help prepare better in the future (spotlight 6.3). For example, the complex prognosis for providing weakest-link global public goods helps in understanding what happened. To shore up countries with little surveillance capacity and access to vaccines, the goal of achieving global disease control[90] was invoked ("No one is safe, until everyone is safe" is the headline on the homepage of the COVID-19 Vaccines Global Access, or COVAX, initiative[91]). This argument could have provided incentives for high-income countries to financially support potential weakest links, but then these countries confronted the free-riding challenge about who should contribute and how much.[92] Thus, although each country had an incentive to contribute to advance its self-interest, the need to pool resources turned the challenge into one with the characteristics of a summation global public good—because each country could free ride on the contribution of others.[93]

There was a manifest lack of coordination in implementing predictable responses to reports of disease outbreaks or new variants—not for lack of effort by the WHO on several fronts, from guidance on travel to support for disease surveillance. Much of this guidance was ignored.[94] Ethical and moral arguments, some proposed with exceptional precision, failed to influence country behaviour.[95] The implications of these actions by high-income countries still run deep in the perception that many middle- and low-income countries felt left behind and treated unfairly.[96]

The science enabling the Covid-19 response: Best-shot global public goods were provided

Development of the Covid-19 vaccines was possible only because key best-shot global public goods could be provided. The most direct best-shot global public good was provided by the scientists who sequenced and published the genomic makeup of the SARS-CoV-2 virus that causes Covid-19.[97] The other best-shot global public goods were the scientific findings published in journals over at least two decades that, among other things, demonstrated how the spike protein in coronaviruses was a prime target for at least some types of vaccines—including the first to be licensed for Covid-19.[98] Public funding for science underpinned these best-shot global public goods, with the US National Institutes of Health alone allocating $17.2 billion to vaccine technologies between 2000 and 2019.[99] But both ex ante and ex post coordination challenges impeded the provision of Covid-19 vaccines as a global public good,[100] despite advocacy to do so.[101] Some countries even actively attempted to attract efforts in other countries to develop a vaccine for their own camp.[102]

> "Development of the Covid-19 vaccines was possible only because key best-shot global public goods could be provided

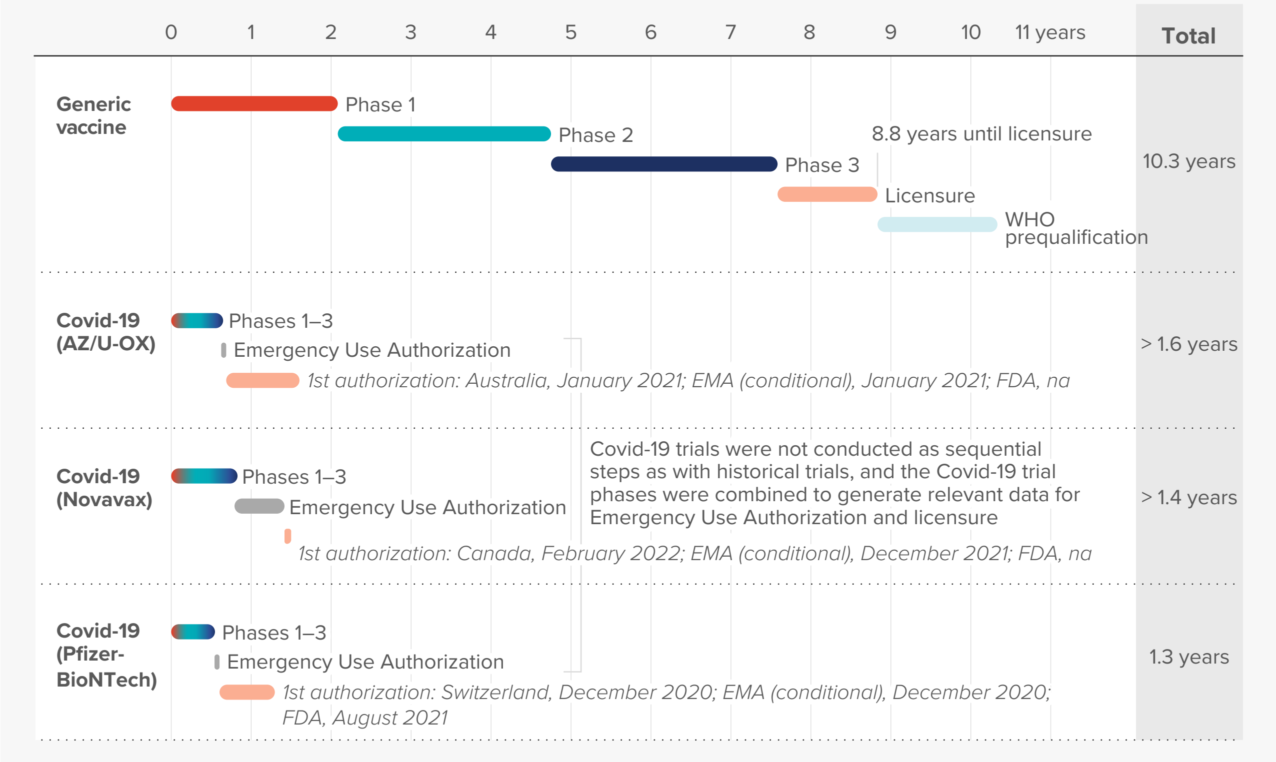
The development of Covid-19 vaccines was a remarkable achievement—as the prognosis for providing best-shot global public goods should have led one to expect. The capacities were concentrated in high-income countries, home to almost two-thirds of the Covid-19 developers as of April 2020, one month after the declaration of the pandemic on 11 March 2020,[103] most based in North America and Europe.[104] The capacities were aligned with interests, as well as a large mobilization of public financing and widespread agreement on the need to prioritize vaccine efforts.[105] Clinical development and approval of vaccines typically takes 5–10 years, with only 10 percent of vaccine candidates receiving approval.[106] But as a result of the massive public resources mobilized,[107] the first emergency use authorization for a Covid-19 vaccine by a stringent regulatory authority (the US Food and Drug Administration, FDA) was issued on 11 December 2020, less than a year after the pandemic was declared (figure 3.1).[108]

Much of the public finance took the form of advanced purchase agreements by high-income countries that far exceeded those countries' needs.[109] For instance, the United States provided $29.2 billion in public funds to purchase vaccines (from the start of the pandemic up to March 2022), $2.2 billion to support clinical trials and $108 million to support manufacturing and basic and translational science.[110] This "advanced market commitment" has long been advocated as a potentially powerful incentive for vaccine and drug discovery and for technological innovation more broadly.[111] This appears to have been the key driver for private sector engagement in Covid-19 vaccine development, given the substantial de-risking produced by the advanced purchase agreements.[112]

Institutions to facilitate global public goods

The response to Covid-19 involved pursuing best-shot global public goods (understanding the science

Figure 3.1 Authorization for Covid-19 vaccines was unprecedently fast



EMA is European Medicines Agency. FDA is US Food and Drug Administration. na is not applicable. WHO is World Health Organization.
Source: Wellcome Trust 2022.

behind vaccines, sequencing the genome of the SARS-CoV-2 virus), summation global public goods (pooling resources to shore up weak links) and weakest-link global public goods (controlling the spread of the virus). Multiple challenges at multiple scales with different agents made for a longer pandemic with highly unequal access to vaccines and with lasting economic effects that burdened low- and middle-income countries in particular. Understanding the challenges of providing different types of global public goods with different aggregations might enable better responses in the future.

In fact, a global public goods lens opens the possibility of enhancing the provision of global public goods through institutions that reshape incentives, provide information and transfer resources.[113] Many different types of institutions—and even agents such as civil society organizations and processes such as social movements—can play these roles, at multiple scales,[114] but four types of international institutions have a bearing on the provision of global public goods:[115]

- *Multilateral organizations.*[116] By pooling resources from countries, creating economies of scope and reducing transaction costs, these organizations efficiently support the provision of multiple global public goods. They include the United Nations and its specialized agencies, funds and programmes (including the nternational Labor Organization, the United Nations Environment Programme and the WHO), as well as international financial institutions such as the IMF and the World Bank (which are formally UN specialized agencies with autonomous governance). Multilateral organizations can directly fund global public goods (the IMF providing liquidity during a balance of payment crisis) or coordinate actions among countries (the WHO during health emergencies, the International Criminal Police Organization—better known as INTERPOL—in the case of transnational crime).
- *International treaties.*[117] Often negotiated under the auspices of multilateral organizations, international treaties bring multiple services that support global public good provision: disseminating

scientific information (to reduce uncertainty during negotiations), convening negotiating parties, and monitoring and fostering compliance after treaties are ratified. Such treaties frequently support global public goods associated with managing environmental spillovers.[118] Examples include the United Nations Framework Convention on Climate Change, the Montreal Protocol on Substances that Deplete the Ozone Layer and the Convention on International Trade in Endangered Species. Effective treaties often must jointly provide more than one global public good. For instance, an effective climate treaty might need to provide at least two global public goods: climate change mitigation as well as new ideas and technologies that lower mitigation costs.[119] A treaty on pandemic prevention, preparedness and response might also need to provide several global public goods, as is currently being considered.[120]

- *Clubs.* Countries can form clubs when it is possible to exclude nonparticipants from the benefits of global public goods.[121] The incentive structures of clubs—given the enhanced prognosis for provision associated with them: excludability implies that free riding is not a concern—make them relevant for enhancing global public good provision.[122]
- *International regimes.* Global transport and communication regimes provide global public goods that enable maritime trade and electronic telecommunications, often under the jurisdiction of multilateral institutions, such as the International Maritime Organization or the International Telecommunication Union.

These institutions are being mobilized to draw lessons from the Covid-19 pandemic and enhance the response to future pandemics. The lessons from the pandemic point to the need for very high ambition: the global resources needed for pandemic preparedness and response over 5–10 years are estimated to be in the hundreds of billions of dollars.[123] But the benefits would also be extremely high,[124] as the loss of lives and livelihoods and the economic toll of the pandemic made clear (chapter 1). The benefits from pandemic vaccines go well beyond health alone.[125]

The analysis in this chapter emphasizes how institutions that reshape incentives, information and resources can enhance the provision of global public goods when countries are assumed to be advancing their interests. As we move into part II of the Report, chapter 4 explores further insights continuing with this premise but also presents a wider vista on potential determinants of collective action. That enlarges the scope for potential interventions to enhance collective action. It also reveals the crucial importance of looking within countries to the emerging patterns of political polarization.

SPOTLIGHT 3.1

The global commons of ocean fisheries

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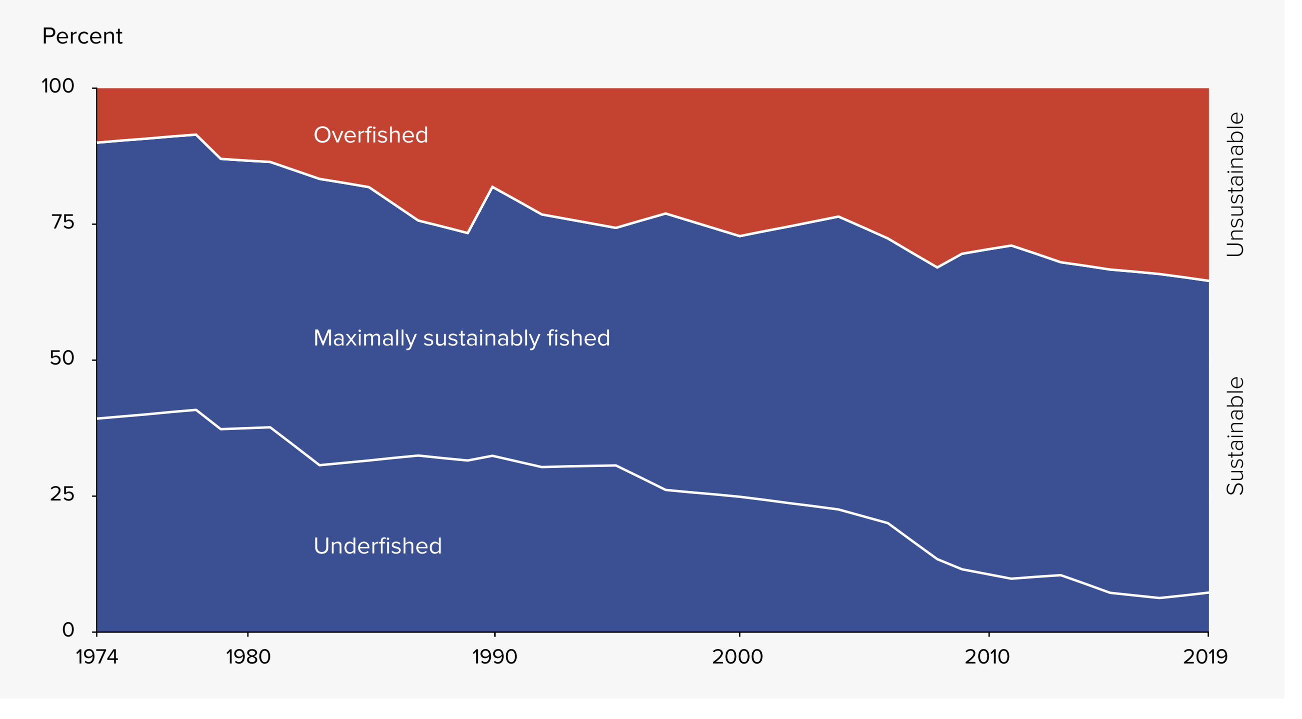
About one-third of the world's ocean fisheries are overfished (figure S3.1.1). A major reason for this is the underlying property rights regime: under international law all countries may exploit these resources on the high seas.[1] As Garrett Hardin says in his classic article, "The Tragedy of the Commons," if a resource is held in common, all potential users have an incentive to exploit it without regard to the effects on the others. "Freedom in a commons," he says, "brings ruin to all."[2]

A clear example of ruin is collapse of the formerly superabundant cod fishery in the northwest Atlantic Ocean. However, overexploitation short of collapse also results in big losses. If exploitation were reduced in the short run, stocks would rebuild. Annual net benefits in the long run could increase from $3 billion to $86 billion.[3]

What to do? If overexploitation is caused by the resource being held in common, the obvious remedy is to change the access rules. In the 1970s the world took a major step in this direction by establishing an entirely new property right, Exclusive Economic Zones (EEZs). EEZs extended every coastal state's exclusive right to manage fishery resources from 3 miles from shore (the old territorial sea) to 200 miles (at the same time EEZs were established, the territorial sea was extended from 3 miles to 12 miles). Because most fisheries are found in this zone, the creation of EEZs eased overfishing at a stroke.

Unfortunately, EEZs, by themselves, cannot eliminate overfishing. Some fisheries overlap different EEZs. Some straddle EEZs and the high seas. Some are highly migratory. Finally, some fisheries are exploited only in the high seas. Another problem is that

Figure S3.1.1 About one-third of the world's fishery stocks are overfished



Source: FAO 2022.

some coastal states lack the capacity to regulate access to fisheries within their EEZs.

Two radical proposals

What more can be done? The Global Oceans Commission (GOC 2014), inspired by research by White and Costello (2014), has proposed closing the high seas to fishing. Fisheries economist Rögnvaldur Hannesson has proposed extending today's EEZs to their maximum extent, eliminating the high seas entirely.[4] These are radical proposals. Will they help?

The first thing to note is that neither proposal is ideal. Neither would have any effect on fisheries found only within existing EEZs, where 96 percent of the commercial catch is taken.[5] Also, neither is suited to addressing exploitation of the only species caught exclusively in the high seas, the Antarctic toothfish (also known as the Chilean sea bass). Territorial claims to Antarctica are disputed, making extension of such claims contentious. Moreover, and rather obviously, closing these waters to fishing would mean zero profits, not higher profits.

Though neither proposal could sustain an ideal outcome, either or both might improve the status quo. Both would likely reduce harvests of highly migratory and straddling fisheries by blocking exploitation by distant water states (except through access agreements with coastal states). However, neither proposal would eliminate the common property problem that exists among coastal states. In addition, both proposals would restrict coastal states' access to at least parts of the existing high seas, raising fishing costs. It is possible, and perhaps even likely, that both proposals would be worse than the status quo.[6]

Regional seas

Versions of the two proposals have already been implemented on a regional scale.

All six coastal states on the Black Sea claim an EEZ, fully enclosing this small regional sea.[7] Similarly, all nine states on the Baltic Sea claim an EEZ, fully enclosing it. Until recently, the Mediterranean Sea was mainly open. For example, though France claimed an EEZ in the Atlantic Ocean in 1972, it did not claim one in the Mediterranean until 2012. Similarly, Spain claimed an EEZ in the Atlantic in 1978 and in the Mediterranean in 2013. Italy claimed an EEZ in 2021. Many claims in the eastern Mediterranean are motivated by an interest in developing natural gas resources. Several areas are disputed. Not long ago, states on the Mediterranean refrained from claiming an EEZ out of concern that it would only stimulate others to do so, restricting where the fleets of all states on this regional sea could fish. The equilibrium has now been broken. As the breadth of the Mediterranean is less than 400 miles in every direction, this regional sea is now fully enclosed. The effect of this change in property rights on fisheries conservation and rents has yet to be determined.

In 2010 in the Western and Central Pacific Ocean the eight Parties to the Nauru Agreement blocked access by purse seiners to high seas areas surrounded by their EEZs by making access to their EEZs contingent on states not fishing in the high seas pockets.[8] Because the surrounding EEZs are much larger than the high seas pockets and fishing exclusively in the high seas pockets is uneconomic, this move proved an effective deterrent. However, closing high seas areas only increased fishing in the adjacent EEZs and did not demonstrably help fisheries conservation.[9]

Closing these high seas pockets was made possible by an accident of geography: the leverage enjoyed by mainly small island states having adjacent EEZs. By contrast, the two radical proposals noted above would require a change in international law. A question not addressed by Hannesson or the Global Oceans Commission is how their proposals would come to be accepted in law.

Property rights established in customary law

We are used to grand ideas such as enclosure of the seas and closure of the high seas being achieved by international negotiations leading to adoption of a new treaty. But even though EEZs emerged as the United Nations Convention on the Law of the Sea was being negotiated and are codified in that agreement, this new property right was recognized as applying in customary law long before the Law of the Sea entered into force. The two radical ideas for changing existing property rights arrangements would also need to be established in customary law. The reason is simple: treaties apply only to the countries that consent to be bound by them. A country can thus easily avoid being bound by a new rule established in a treaty by choosing not to participate in the treaty. By contrast, customary law applies universally. Though the United States has not ratified the Law of the Sea, it accepts that EEZs apply in customary law.

However, compared with treaties, customary law is an inscrutable institution. Custom is not negotiated explicitly. Nor does it require the explicit consent of individual countries. A customary law exists if states behave in accordance with the law—and do so in the belief that they are legally obligated to.[10]

Because custom is founded on beliefs, some scholars of international law have questioned whether it exists, let alone whether it has had any effect.[11] Does custom really shape behaviour, or is custom just a name given to behaviours that reflect national self-interests?

One way to know whether custom exists and has real effects is to identify situations in which a country would be better off deviating from a customary rule yet refrains from doing so (again, because it believes doing so would violate international law). The Grand Banks, a famously rich fishing ground off Canada's eastern shore, protrudes beyond the country's 200-mile EEZ in two places, the "Nose" and the "Tail" (a nearby third area, the Flemish Cap, lies entirely outside the EEZ). If custom merely codified actions that reflected national self-interest, Canada would have claimed an extended EEZ in these areas. We know this because, Canada and the European Union, especially Spain, previously clashed over fishing in them. In 2002, after years of overfishing by foreign fleets, a Canadian parliamentary committee investigated whether Canada should assert unilateral control over these areas. Despite its obvious self-interest motive for doing so, the committee recommended against the change, reckoning that other countries would oppose it.[12] Canada's adherence to the 200-mile limit is thus strong evidence of customary law's sway over state behaviour.

More broadly, globally, unauthorized fishing is 80 percent lower just inside EEZs than just outside them.[13] This strongly implies both that coastal states are enforcing their existing EEZs (presumably, because the EEZs are valuable to them) and that they could profit by extending their EEZs even further. But under customary law, a state can legally extend its EEZ only if others agree with the change, which is likely to cause others to extend their EEZs. Though a state would clearly gain by extending its EEZ unilaterally, it might ultimately lose when others extended their EEZs as well. Custom has a restraining influence on behaviour.[14]

So far, countries have shown little interest in asserting either of the radical proposals at the global level. But they have deviated from the rule of freedom on the high seas in one special case.

Under the Law of the Sea, "states of origin" of anadromous species—salmon, which spawn in inland waters—are recognized as having a "primary interest in and responsibility for such stocks." States may fish for salmon but "only in waters landward of the outer limits of the exclusive economic zones." Because this provision is accepted by consensus and reinforced by state practice, "the customary international law of freedom of fishing no longer affords any right to harvest [anadromous species] without the agreement of the state of origin," effectively banning directed fishing for salmon in the high seas.[15]

Salmon are found in both the North Pacific and North Atlantic Oceans but are harvested in the high seas only in the North Pacific.[16] Because salmon move through the EEZs of different states of origin in the North Pacific, the ban transforms what would have been an open access resource into a resource owned in common by states of origin only. By limiting the number of countries with access to the fishery, the ban likely lessens overexploitation. It also likely aids efficiency because efficient management requires targeting "specific species, specific age groups, and individual runs," which is possible only "at the time the fish approach the state of origin and segregate themselves for the return to their rivers of origin."[17] Also, the fish at this point are of maximum size and congregate in large numbers. Finally, to ensure sustainability, inland waters must be protected for spawning. By giving states of origin special rights to fish for these species, the high seas ban also gives these states an incentive to safeguard access by salmon to their spawning grounds. For salmon, a prohibition on high seas fishing clearly enhances efficiency.

Why was this exception allowed? When the Law of the Sea was being negotiated, the only states to make proposals for anadromous species were Canada, Ireland, Japan, the Soviet Union and the United States—all states of origin. Moreover, no states protested states of origin having a special claim to anadromous stocks,[18] even the states with the most to gain from high seas fishing (Japan in the Pacific Ocean and Denmark, custodian for Greenland and the Faroe Islands, in the Atlantic Ocean). This situation did not apply to fisheries in general.

Nothing stops countries from enclosing the high seas or from closing them to fishing under customary law. Indeed, theory suggests that states will do so when it enhances efficiency.[19] States might not have embraced either radical proposal because they remain unconvinced that it would solve the overfishing problem.

Cooperative agreements established in treaty law

How to overcome overfishing? To Garret Hardin, there is only one solution: "mutual coercion, mutually agreed upon by the majority of the people affected."[20] This solution, however, presupposes that a democratic institution exists with the power to impose and enforce an outcome. Such institutions exist at the national level—but not at the global level. Moreover, it is hard to see how such an institution could emerge. After all, the territorial sea is an extension of a coastal state's land-based territory, and an EEZ is an extension of that state's territorial sea. A more limited proposal would give the exclusive right to fish on the high seas to a single party, a global high seas fisheries organization. However, most high seas fisheries overlap with EEZs, and there are good reasons for managing fisheries as coherent units—the logic of regional fisheries management organizations.

Elinor Ostrom agrees with Hardin's diagnosis of the reasons for the tragedy of the commons but disagrees strongly with his conclusion of the need for a centralized solution.[21] To Ostrom, if users of a common property resource lose from overexploitation, they have an incentive to cooperate to avoid overexploitation. Indeed, Ostrom provides numerous examples where cooperation has succeeded, but they are all at the local level. In a later paper, Ostrom and co-authors recognize that cooperation at the international level is harder.[22] They give several reasons for this, but one stands out: the rule of "voluntary assent to negotiated treaties."[23] As noted previously, under international law countries are free to enter into cooperative agreements or not as they please. Treaties, including treaties that establish regional fisheries management organizations, must be self-enforcing.[24]

The most critical issue for successful treaty design is participation: how to get all countries wishing to exploit a fishery to join the agreement. The Law of the Sea tries to do this by requiring that states establish regional fisheries organizations for the purpose of managing a fishery. The UN Fish Stocks Agreement goes further. Article 7 says that "coastal States and States fishing on the high seas have a duty to cooperate," and Article 8 says that these states shall satisfy "their duty to cooperate by becoming members of [a regional fisheries management organization (RFMO)]." Critically, Article 8 also says, "Only those states which are members of such an organization…. Shall have access to the fishery resources to which those measures apply." In other words, if a country wishes to exploit a fishery, it must become a member of the cooperative enterprise established to manage the fishery. The problem here is that this requirement applies only to countries that choose to participate in the Fish Stocks Agreement. The Global Oceans Commission called for universal ratification of this agreement, but urging participation does not create an incentive for participation.[25] Selective trade measures can help in some instances, but the freedom to exploit a fishery should ideally be coupled in customary law with the obligation to participate in the organization that manages the fishery.

However, if too little participation is a problem, so is too much participation. If all the countries exploiting a resource participate in an agreement that sustains their full cooperation, their success will encourage entry, weakening their incentive to cooperate in the first place. The Fish Stocks Agreement says that states having a "real interest" in a fishery may become members of an RFMO, but who gets to decide which states have such an interest? The Law of the Sea answered this question for salmon but not for fisheries in general. A second need for customary law is thus to limit access. RFMOs could address equity concerns by charging a fee for access to high seas areas within their territories (such as the Nose and Tail of the Grand Banks, and the Flemish Cap, all three of which are situated within the territory of the Northwest Atlantic Fisheries Organization) and distributing the revenue to all countries, including nonparticipating countries, according to an agreed formula. The high seas were determined to be free at a time when fisheries were believed to be available in limitless supply.

Conclusion

Overfishing is a persistent and growing problem for which there is no simple remedy. Property rights solutions, established in customary law, and regional fishery management organizations, established in treaty law, both help. But each on its own falls short of sustaining an efficient outcome. Further progress will likely come from advancing both approaches in combination.

NOTES

1. FAO 2022.
2. Hardin 1968, p. 1244.
3. World Bank 2017.
4. Hannesson 2011.
5. Schiller and others 2018; http://www.seaaroundus.org.
6. Barrett forthcoming.
7. A portion of this is now disputed due to Russia's invasion of Ukraine.
8. The members of the Parties to the Nauru Agreement are the Federated States of Micronesia, Kiribati, the Marshall Islands, Nauru, Palau, Papua New Guinea, the Solomon Islands, Tokelau and Tuvalu.
9. Sibert and others 2012.
10. Bodansky 1995.
11. Goldsmith and Posner 1999.
12. Standing Committee on Fisheries and Oceans 2002.
13. Englander 2019.
14. Barrett forthcoming.
15. Burke 1991, p. 118.
16. Burke 1991.
17. Burke 1991, p. 103.
18. Copes 1977.
19. Barrett forthcoming.
20. Hardin 1968, p. 1247.
21. Ostrom 1990.
22. Ostrom and others 1999.
23. Ostrom and others 1999, p. 282.
24. Barrett 2003a.
25. The Global Ocean Commission (GOC 2014) lists 30 states that are members of RFMOs and have not ratified the UN Fish Stocks Agreement. Since 2014, when the commission's report was published, six countries on the list have ratified the Fish Stocks Agreement, raising the total to 93 participating countries.

Assessing the net benefits from global public goods and their distribution

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A six-step framework can be used to assess the net benefits from providing global public goods, as well as the distribution of those benefits.[1] Identifying the social, economic and other benefits (or costs) of adequate global public good provision can improve understanding of whether and to what extent different countries might support stronger international cooperation around certain global public goods.

Methodology

Step 1: Characterize current provision

Setting a clear benchmark for adequate provision is the first step in assessing a global public good. For example, in eradicating a communicable disease, the global public good can be deemed adequately provided when the disease is completely eliminated from nature. Given measures of disease exposure in a population (ranging from 0 percent to 100 percent, for example), one can then assess the extent to which this global public good has been provided. Other global public goods may require an alternative approach. For example, for trade facilitation in the context of a multilateral trade regime, bringing all countries that are below a certain benchmark (say, the median) up to that benchmark might be a practical target for adequate provision.

Step 2: Establish the global costs (or benefits) of current provision

Assessing the full range of costs associated with underprovided global public goods may not always be possible, particularly if data on certain aspects of these costs have not yet been developed. Nevertheless, it is usually possible to estimate at least some of the largest costs to provide a basis for policy action. For example, disease eradication could reduce social and economic costs too myriad to map in their entirety, but existing health data could be used to estimate the years of healthy and productive life lost due to disability and early death stemming from a disease. Reducing a disease burden by some amount could then be associated with an estimate of the benefits gained.

Step 3: Assess the global costs of corrective actions

Different global public goods have varying provision technologies. Adequately providing some global public goods may depend on the success of the least capable contributor (often called the weakest link). Countering international terrorism is an example, as it depends on the efforts of the country facing the most challenges in controlling its borders. But some global public goods such as vaccine development and discovery depend on the country or stakeholder with access to the right technology and the strongest scientific capabilities (called the best-shot). The cost of corrective action can then be estimated based on the required inputs and the nature of the provision technology for a global public good, as well as the benchmark for adequate provision.[2]

Step 4: Evaluate the global benefits from corrective actions

As noted earlier, estimating the costs of underproviding some global public goods offers an intuitive estimate of the potential benefits (from costs avoided) from adequate provision. But other global public goods offer completely new benefits that can be enjoyed across borders. For example, the multilateral trade regime could be expanded to allow for new value creation and facilitate new sources of global economic growth. Such institutional developments might also have social and economic costs due to their disruptive side effects (hence the next steps in assessing the net benefits as well as their distribution across countries and stakeholders).

Step 5: Indicate the likely global net benefits from enhanced provision

Based on the previous steps, it should be possible to juxtapose the benefits from adequate provision of a global public good against the costs. In some cases adequate provision of a global public good averts costly outcomes, whereas in others the result is enhanced human welfare and new sources of economic growth. Both count on the benefits side of adequate provision of global public goods as described earlier, and in many cases indirect benefits are not yet factored in. For many global public goods these figures of new benefits or benefits expressed as averted costs easily outweigh the costs of adequate provision, hence motivating—at least on the whole—the rationale to cooperate across countries.

Step 6: Describe the cross-country distribution of net benefits from enhanced provision

A final step in the methodology clarifies the interests of each country involved in providing the global public good. When the net benefits to a country are high, it will likely support the adequate provision of the global public good, but it could decide to free ride from other countries attempting to provide the global public good. This is possible if inputs across countries are interchangeable (such as reductions in carbon emissions). For some global public goods with noninterchangeable inputs, each country's inputs are needed for adequate provision, so expected net benefits should be positive. And when the net benefits are low or even negative for countries whose cooperation is needed for adequate provision, this step helps clarify how international cooperation mechanisms could arrive at fair and stable outcomes—such as by introducing compensation and capacity-building mechanisms to finance and support participation. These burdens could be shouldered by the countries that stand to gain the most and that can pay for adequate global public good provision. Such a financing mechanism is not necessarily the same as foreign aid—rather it facilitates compensation to enhance international cooperation.[3]

Applications

Applying the methodology to five global public goods—eradicating smallpox, eradicating polio, adequately providing the multilateral trade regime, promoting climate stability and promoting faster recovery from pandemics—highlights not only the global nature of net benefits to be derived from their provision but also the underlying distribution of net benefits, which might motivate international cooperation to provide these or other global public goods.

Eradicating smallpox

Smallpox has been completely eradicated, with no reported infections worldwide. The World Health Assembly officially declared the eradication of smallpox in 1980. Retrospective measurements suggest that the global cost associated with eradicating smallpox was $300 million (in 1967 US dollars). Developing countries contributed $200 million, industrial countries, $100 million.[4] Since 1980 the annual global benefits have been estimated at $1.42 billion, with $1.07 billion allocated to developing countries and $350 million to industrial countries.[5] Smallpox eradication has resulted in a substantial global net present value benefit of approximately $80 billion ($1.42 billion a year from 1966 to 2022). Developing countries have received about 75 percent of these net benefits, industrial countries, about 25 percent. The overall benefit-to-expenditure ratio for global smallpox eradication stands at 159:1.[6]

Eradicating polio

As of 2023, polio eradication efforts remain insufficient, with around 99.9 percent progress since the programme's inception in 1988.[7] In 2022 the primary poliovirus strain (WPV1) was identified in only three countries, Afghanistan, Mozambique and Pakistan, resulting in 30 cases that year.[8] According to the latest estimate from 2021, the direct global cost of eradicating polio from 1988 to 2018 is projected to exceed $34 billion (in 2019 US dollars).[9] Assuming successful eradication by 2023, the global net present value benefit is an estimated $61 billion, and the anticipated global net benefit from 1988 to 2029 is an estimated $28 billion. This figure is notably lower than previous estimates due to the delays encountered in eradication efforts. Low-income countries are expected to receive around $8 billion in benefits and lower middle-income countries around $21 billion, while other countries are projected to lose $1–$2 billion in costs.[10] Low- and lower middle-income countries would be the main beneficiaries of polio eradication, while most of the cost burden (approximately 60 percent) would fall on lower middle-income countries.[11]

Adequately providing the multilateral trade regime

Technology creation and diffusion have become central in international trade discussions, particularly given recent trade frictions on the technology front.[12] Góes and Bekkers (2022) explore the potential effects of increased and persistent large-scale geopolitical conflicts between different trade blocs on economic growth and technological innovation. Another way to view this type of study is to consider decoupling and economic dis-integration scenarios as de facto deliberate underprovision of the multilateral trade regime. So, the corrective action would be to (at least) avoid the decoupling and preserve the status quo welfare levels established in the baseline (no decoupling) scenario.

Using a multisector multiregion general equilibrium model with dynamic sector-specific diffusion, their modelling shows that decoupling the global trading system into two blocs would reduce global welfare in 2040 by about 5 percent (compared with the baseline scenario). The largest losses would be offset by positive technology spillovers from trade benefitting low-income regions. In scenarios with full decoupling and retaliatory tariff hikes across two main trade blocs (Eastern and Western), the welfare effects are asymmetric. Western bloc countries would experience losses of 1–8 percent compared with the baseline scenario, while Eastern bloc countries would experience losses of 8–12 percent. So, the distribution of net losses from decoupling—tantamount to a deliberate underprovision of the multilateral trade regime and a regression towards trading blocs—is skewed against low-income countries with lower productivity, which would likely belong to the Eastern bloc.

Promoting climate stability

Climate stability, which aims to stabilize greenhouse gas concentrations in the atmosphere to prevent dangerous human interference with the climate system, remains inadequately addressed. This global public good requires international cooperation to avert and mitigate the risks of climate change. In one example of how benefits significantly outweigh the costs of climate change mitigation, Yang, Meng and Suh (2023) examined stranded fossil fuel costs and the associated financial losses incurred by fossil fuel industries and related sectors due to the abandonment or devaluation of their assets. They estimated the cost of abandoning fossil fuels at $19 trillion, which presents a considerable economic challenge, primarily for fossil fuel–dependent countries. However, this cost is outweighed by the substantial benefits from climate change mitigation efforts, totalling $63 trillion globally by 2050.

The net benefit, calculated at $45 trillion globally, emphasizes the economic and environmental advantages of collective global efforts to lessen global dependence on fossil fuels and switch to cleaner energy sources. The distribution of the net benefit falls disproportionately to developing countries, even as many low-income countries are likely to need assistance managing the transition (see table S3.2.1 for a further breakdown).

Preparing for pandemics

SARS (first identified in November 2002), MERS (first identified in June 2012) and COVID-19 (first identified in December 2019) suggest that countries should indeed prepare in advance for pandemics that are likely to manifest. Recent calculations by Glennerster, Snyder and Tan (2022) reveal that global losses from pandemics could reach $700 billion a year, with losses based on mortality, output contractions and human capital losses. They also estimate that investing about $60 billion upfront to expand production capacity for vaccines and other supply chain inputs for pandemic response, with an additional $5 billion a year thereafter, could help ensure

Table S3.2.1 Summary of global public good assessments: Five cases

Global public good	Status	Estimated costs of corrective action: Overall	Estimated costs of corrective action: Disaggregated
Smallpox eradication (figures are in 1967 US dollars; see Barrett 2004)	Fully eradicated since 1980	→ $300 million (one-time cost)	→ Industrial countries: $100 million (one-time cost) → Developing countries: $200 million (one-time cost)
Polio eradication (figures are cumulative from 1988 to 2029 in 2019 US dollars; see Thompson and Kalkowska 2021)	99.9 percent eradicated as of 2023	→ $53.5 billion	→ Upper middle-income countries: $10.6 billion → Low- and lower middle-income countries: $42.9 billion
Multilateral trade regime (figures are based on a model analysing dynamic effects from trade, with a focus on technology, and the potential effects of increased and persistent large-scale geopolitical conflicts between different trade blocs on economic growth and technological innovation; see Góes and Bekkers 2022).	At risk of underprovision due to protectionist strategies and trade wars in recent years	na	na
Climate stability (figures refer to the results of addressing stranded fossil fuel costs; Yang, Meng and Suh 2023)	na	→ $19 trillion in stranded asset costs	→ High- and upper middle-income countries: $17.7 trillion → Low- and lower middle-income countries: $2 trillion
Pandemic recovery (figures refer to the results of investment in vaccine production capabilities and other preparedness measures; Glennerster, Snyder and Tan 2022)	na	→ $60 billion upfront to expand production capacity for vaccines, with an additional $5 billion a year thereafter	na

na is not applicable.
Source: Barrett 2004; Góes and Bekkers 2022; Glennerster, Snyder and Tan 2022; Hertel 2004; Thompson and Kalkowska 2021; Yang, Meng and Suh 2023.

the capability to vaccinate 70 percent of the population against any new disease within six months. This could be considered an estimate of the cost of adequately providing the global public good of disease control and pandemic response. The resulting global benefit could reach $800 billion (in terms of losses avoided), making the net present value of global public good provision about $400 billion. While Glennerster, Snyder and Tan (2022) do not elaborate fully on the distribution of these global net benefits, they outline how the expected net benefits for some "pivotal countries" could be high enough that they find reason to undertake unilateral investments in pandemic response preparedness. An investment programme in the United States could generate a net present value benefit of $61 billion (implying a gain of $47 billion over the counterfactual programme with lower preparedness investment). Similarly, advanced investment by Brazil could generate $19 billion (implying a gain of $15 billion).[13]

Estimated benefits (or costs) from global public good provision (or underprovision)		Estimated net benefits (or costs) from global public good provision (or underprovision)	
Overall	**Disaggregated**	**Overall**	**Disaggregated**
→ $1.42 billion in benefits (annual)	→ Industrial countries: $350 million (annual) → Developing countries: $1.07 billion (annual)	→ About $80 billion in benefits (cumulative from 1967 to 2022)	→ Industrial countries: $20 billion → Developing countries: $60 billion
→ $81.6 billion in benefits	→ Upper middle-income countries: $8.8 billion → Low- and lower middle-income countries: $72.8 billion	→ $28.1 billion in benefits	→ Upper middle-income countries: –$1.7 billion (cost) → Low- and lower middle-income countries: $29.8 billion
→ Decoupling the global trading system into two blocs would lead to a 5 percent loss in global welfare in 2040 relative to the baseline scenario	→ Western bloc countries: 1–8 percent loss in welfare relative to the baseline scenario → Eastern bloc countries: 8–12 percent loss in welfare relative to the baseline scenario	→ 5 percent loss in global welfare in 2040 relative to the baseline scenario	→ Western bloc countries: 1–8 percent loss in welfare relative to the baseline scenario → Eastern bloc countries: 8–12 percent loss in welfare relative to the baseline scenario
→ $63 trillion in benefits from climate change mitigation	→ High- and upper middle-income countries: $19.6 trillion → Low- and lower middle-income countries: $45.5 trillion	→ $45 trillion	→ High- and upper middle-income countries: $1.9 trillion → Low- and lower middle-income countries: $43.5 trillion
→ $800 billion in losses a year due to underprovision (based on mortality, output contractions and human capital losses)	na	→ $400 billion in net present value benefits to the world	→ US investment programme could generate a net present value benefit of $61 billion (implying a gain of $47 billion over the counterfactual programme) → Advanced investment by Brazil could generate a net present value benefit of $16 billion (implying a gain of $12 billion over the counterfactual programme)

NOTES

1. As proposed in Conceição and Mendoza (2006).
2. For further elaboration on these production technologies for global public goods, see Kaul and others (2003) and Sandler (1998).
3. See Kaul, Grunberg and Stern (1999) and Kaul and others (2003).
4. Barrett 2004.
5. Barrett 2004.
6. Barrett 2013b.
7. Lee and others 2023.
8. Lee and others 2023.
9. Thompson and Kalkowska 2021.
10. Thompson and Kalkowska 2021.
11. Thompson and Kalkowska 2021.
12. This section draws from Mendoza (2023).
13. Glennerster, Snyder and Tan 2022; Mendoza 2023.

SPOTLIGHT 3.3

How inequity in access to Covid-19 vaccines unfolded: An account using a global public goods lens

Controlling the transmission of the virus that causes Covid-19 (or achieving herd immunity through vaccines, which at times during the pandemic seemed feasible)[1] is a weakest-link global public good. Until pharmaceutical interventions (vaccines and treatment) were available, control of the virus's spread had to rely on nonpharmaceutical interventions (such as social distancing), which imply fully understanding the mechanisms of transmission, which took time to establish. Thus, measures emphasized reducing social interaction (in schools, economic activities that implied face-to-face contact, travel), which some countries were better able to shoulder than others.[2]

Nonpharmaceutical interventions can be effective in controlling disease spread (and have even been used as a basis to pursue disease eradication),[3] but they require that countries with fewer capabilities and resources be supported, which happened to only a limited extent with Covid-19. For instance, the International Monetary Fund (IMF) adopted a general allocation of $650 billion in special drawing rights (SDRs) only at the end of August 2021 and distributed it in proportion to existing country quotas in the IMF, implying that only $21 billion was allocated to low-income countries.[4] Even though the SDR allocation represented a larger share of gross domestic product (GDP) for low-income economies than for advanced economies,[5] 35 percent of IMF members in emerging markets and 50 percent in low-income countries considered the allocation insufficient.[6] Moreover, because interest rates have increased since the allocation, IMF members with negative SDR positions have had to shoulder higher financing costs. So, while the concessional (grant element) of the SDR allocation was 82 percent in August 2021, it had declined to 34 percent (just below the 35 percent concessionality threshold) in 2023.[7]

Once vaccines became available, the WHO and its partners, including philanthropic organizations, established an institutional framework to provide equitable access to vaccines (COVAX), which was initially and for some time underfinanced.[8] The availability of vaccines brought about two benefits. First, as with any vaccine, it provided a pharmaceutical intervention to control the virus's spread, contributing to controlling the disease within countries while reducing transmission risk to other countries. Second, where available and deployed at scale, vaccines enabled the relaxation of the strict social distancing measures that had curtailed social and economic life, but these benefits were concentrated within borders. Inequities in access to vaccines across countries hampered the provision of the weakest-link global public good of global disease control, ultimately extending the duration of the pandemic for all.[9] The economic toll of social distancing measures (not only in schooling but also in access to health and other services) deepened the asymmetries between countries able to restart their economies and reopen their schools and those less able to do so because they were deprived of the ability to deploy vaccines.[10]

The inequity in access to Covid-19 vaccines is a moral stain on the international community, contributing to a longer and deadlier pandemic than might have happened with more equitable access to vaccines.[11] More than 2 billion people were vaccinated within 8 months in 141 countries, averting 2.4 million excess deaths. But a counterfactual with equitable distribution of vaccines, with vaccination in each country proportional to its population, would have saved roughly 670,000 more lives.[12]

Starting more aggressively with public support for vaccine development in high-income countries might have put other countries at a disadvantage: as much as three-quarters of the delay in vaccine deliveries to low- and middle-income countries has been attributed to the signing of advanced purchase agreements in these countries later than in high-income countries.[13] In contrast to Covid-19, during the Ebola outbreak in

West Africa, most of the incidence and burden of the disease were in low-income countries, though there were concerns in high-income countries: there was little alignment between resources and country interests and preferences, and more than 70 months passed between the outbreak in December 2013 and the FDA approval of a vaccine in October 2019.[14]

In addition to differences in the timing of advanced purchase agreements, inequities in access to Covid-19 vaccines were also due to the fact that some key innovations remained under patent protection.[15] The vast majority of vaccine developers (72 percent) were private firms,[16] most of which entered purchase agreements on a commercial basis.[17] While firms played crucial roles in the development and deployment of vaccines, their commercial motivations might also have hindered faster deployment at scale in several low- and middle-income countries.

NOTES

1. The WHO advocated for vaccine use to move towards herd immunity (WHO 2020). Estimates on the threshold that would deliver herd immunity were hotly debated in the press (McNeil Jr. 2020), but more recent analysis suggests that herd immunity may not be feasible (Malinzi and others 2023; Morens, Folkers and Fauci 2022). Defining with precision what herd immunity means is also crucial, given that the concept is often interpreted differently (Bullen, Heriot and Jamrozik 2023).
2. UNDP 2020a.
3. This is the case for efforts to eradicate dracunculiasis (Guinea-worm disease), for which no treatment or vaccine exists. The disease spreads by drinking contaminated water, so efforts to provide safe drinking, along with early detection and surveillance, are key to controlling the disease (Biswas and others 2013). These measures have been very effective, sharply reducing cases (from around 3.5 million a year to only 13 in 2022) and nearly eliminating the disease in most of the world (with 199 countries, territories and areas certified by the WHO as free of dracunculiasis transmission; WHO 2023). Humans were thought to be the only reservoirs of the disease, which provided prospects for eradication using nonpharmaceutical interventions, but the recent detection of the disease in animal hosts, including domestic dogs, makes that prospect uncertain (WHO 2023).
4. IMF 2021a. The IMF encouraged countries with strong external positions to voluntarily channel resources to the countries most in need (IMF 2021b). And the G20 followed with pledges that slightly surpassed the target of channelling $100 billion by June 2023 (IMF 2023b).
5. About 2.39 percent of 2021 GDP, compared with 1.25 percent for advanced economies.
6. IMF 2023b.
7. IMF 2023b; Shenai and others 2023.
8. Still, by January 2022 COVAX had distributed about a billion vaccines to around 140 countries (Budish and others 2022). And despite an increase in international development assistance to health in 2020 and 2021 (Micah and others 2023).
9. Bollyky and Bown 2020.
10. There were also other intersecting precarities that shaped the ability of some countries and communities to respond, such as in many parts of Africa, as analysed in detail in MacGregor and others (2022).
11. As widely forewarned (see, for instance, Bollyky and Bown 2020). Until the first vaccines were authorized by a stringent regulatory authority, there had been 70 million Covid-19 cases and 1.6 million deaths worldwide (Saville and others 2022). As of the end of September 2023, there had been 762 million cases and 6.8 million deaths (see https://covid19.who.int/), so in the “vaccine era,” cases were multiplied by 10 and deaths by 4.
12. Agrawal, Sood and Whaley 2023.
13. Agarwal and Reed 2022.
14. Excler and others 2021.
15. Pilkington, Keestra and Hill 2022; Wouters and others 2021.
16. Le and others.
17. Sachs and others 2022.

PART

II

Reimagining cooperation by expanding agency and easing polarization

CHAPTER

4

Examining how to enhance collective action

Examining how to enhance collective action

Examining how to enhance collective action to manage interdependence can be explored through different assumptions about human behaviour's interactions with institutions. Different explanations for behaviour can inform ways of advancing collective action to provide global public goods.

Insights from recognizing how behaviour and institutions are contingent on the changing social context over time can help address shared challenges. A broader perspective on choice informed by these insights also shows how risks associated with domestic patterns of political polarization may harm collective action across countries.

“...the making of a treaty is the treaty. It doesn’t matter what the terms are, just that there are terms. It’s the goodwill that matters. When that runs out, the treaty is broken, whatever the terms say.”

—Hilary Mantel[1]

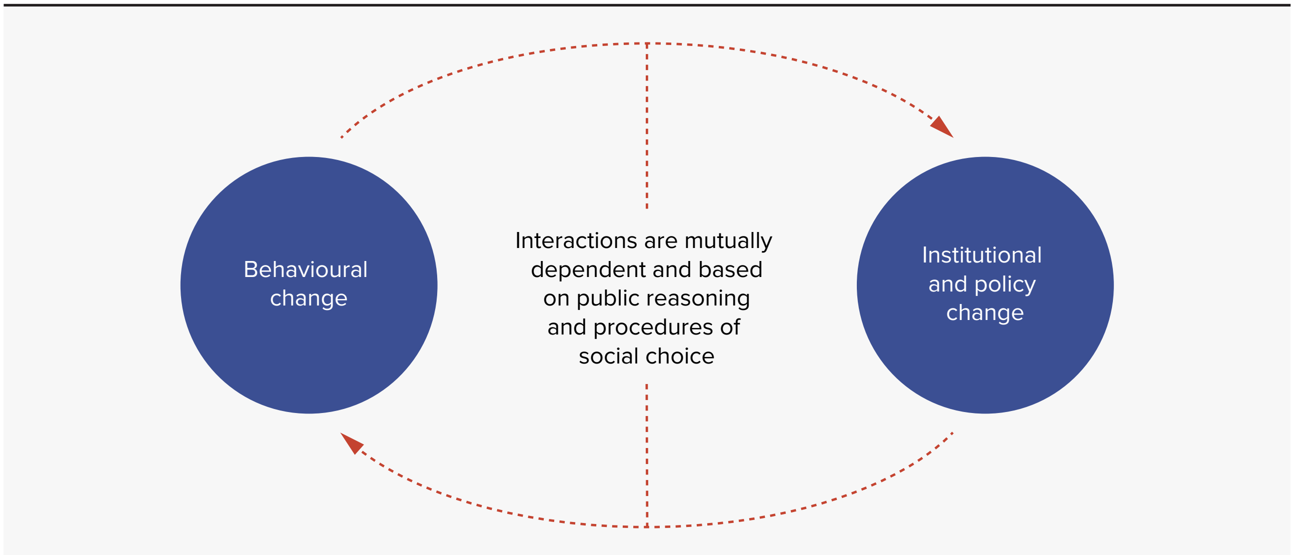
Examining how to enhance collective action to manage interdependence can be explored through different assumptions about human behaviour and its interactions with institutions.[2] This chapter considers how different explanations for behaviour can inform ways of advancing collective action[3] for the provision of global public goods.[4] It explores three perspectives on behaviour and the interventions to enhance collective action that emanate from these perspectives.[5]

- *Selfish choice.* Under a standard selfish choice model of behaviour, enhancing collective action depends on interventions that reshape incentives by providing information or resources to align narrow self-interest with improved collective outcomes. International treaties mobilize interventions that reshape incentives. For climate change, incentives can be altered by pricing carbon; applying information from scientific syntheses, such as those produced by the Intergovernmental Panel on Climate Change; and using resources from funds that support countries in mitigating climate change, such as the Green Climate Fund.
- *Behavioural choice.* Human behaviour often deviates from the assumptions of the standard selfish choice model, deviations that are sometimes described as behavioural biases. For instance, providing new information alone does not always lead people to update their beliefs.[6] And providing financial rewards to change incentives can undermine cooperation that is motivated by a social norm.[7] Even though large swathes of debate in the social sciences and humanities take issue with the emphasis of behavioural science, providing explanations for behaviour and institutions that explore culture, context and power,[8] insights from behavioural science yield a richer description of behaviour than the selfish choice model and thus suggest other ways of intervening that supplement incentives by also changing what people focus on and how they feel and think.[9] For example, changing social norms can enhance collective action by activating a social tipping point, as when reaching a threshold of enough solar panels flips the community norm to making solar panels the social standard.
- *Encultured choice.* Explicitly bringing in culture can explain how people’s beliefs result from experience and exposure to different social contexts, shaping their perceptions, self-image, aspirations and meanings.[10] This perspective accounts for why some behavioural biases, thought to be universal and hard wired under the behavioural choice perspective, are culturally contingent.[11] It also explains how behaviour is sometimes constrained by people’s inability to imagine more prosperous and fulfilling lives, curtailing their aspirations and their agency.[12] This perspective has implications for cooperation, too, as when people’s affiliation with a group is tied to a salient aspect of their identity—such as opposing vaccination as a marker of belonging to a group that is sceptical of government intervention, resulting in the less cooperative behaviour of not being vaccinated.[13] Understanding how these dynamics take hold and change points to recognizing the social context, including patterns of political polarization and mistrust within countries that may stand in the way of enabling collective action at higher scales.

“Changes in behaviour and in institutions can foster collective action that enhances the provision of global public goods

Fostering collective action for the provision of national public goods is one of the primary roles of governments, in part through centralized enforcement.[14] But since countries are sovereign,[15] they have to voluntarily agree to collective action without centralized enforcement.[16] So, the lens has to move towards an exploration of the processes of social choice that can enhance the provision of global public goods.[17] That implies changes in behaviour (countries shifting from not contributing to contributing to a global public good) and in institutions (establishing a treaty or a creating a multilateral organization that enhances the provision of a global public good), along with the interaction between the two (figure 4.1).[18] Behaviour and institutions are interdependent, as argued

Figure 4.1 **Behavioural change and institutional reform influence each other—jointly shaping and being shaped by social choice procedures**



Source: UNDP 2022a.

conceptually[19] (and demonstrated through models[20]) and experimentally.[21]

Where to start? The three sets of assumptions about behaviour discussed in this chapter point to three different answers.[22] The simplified set of assumptions of the standard selfish choice model begins by thinking about the design of institutions to enhance collective action. By contrast, a behavioural model of choice opens the possibility of directly changing behaviour to enhance individual and collective outcomes. While insights from both perspectives are useful, the recognition of how behaviour and institutions interact in different social and cultural settings supplements the first two sets of assumptions by emphasizing the contingent nature of both behaviour and institutions.

Start with a standard selfish choice model of behaviour

In a standard selfish choice model of behaviour, a decisionmaker seeks to do as well as possible to fulfil a fixed and stable set of preferences and assumes that everyone behaves the same way (box 4.1).[23] This behavioural model is the foundation for much economic and political science analysis associated with collective action. And it is implicit in the discussion in chapter 3 of the prospects for providing global public goods under different aggregations.[24] So, when can collective action without enforcement from above happen under these assumptions?

It is crucial to distinguish two different situations. One in which everyone desires the same thing, but some common standard needs to be set (such as deciding which side of the road to drive on or which language to communicate in).[25] The other in which there are different interests on what is desired and where the pursuit of those individual interests does not yield what is most desirable collectively, posing social dilemmas.

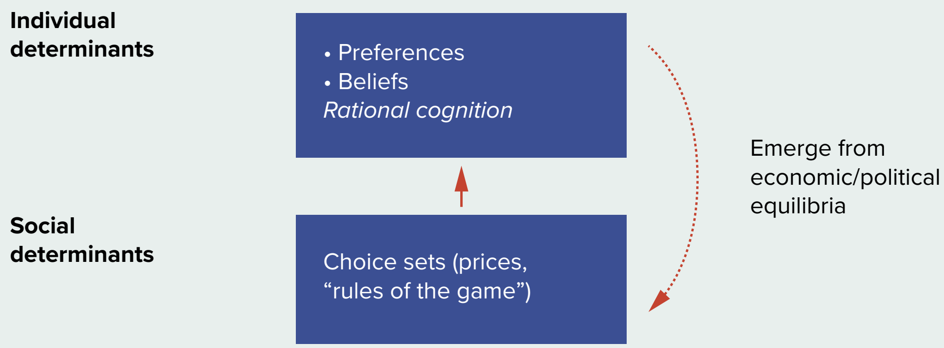
What matters in the first situation is that everyone adopts the same standard. While multiple standards may exist (driving on the left or on the right), all that matters is that everyone chooses the same side of the road.[26] Once a standard emerges, there is a strong incentive to comply with it—for instance, to comply with the standard of driving on the right rather than defecting and driving on the left. The difficult bit is setting the standard to begin with, a challenge of getting everyone in sync. Collective action in this situation needs to overcome a coordination problem.

The key obstacle to overcoming the coordination problem is not diverging interests—interests are aligned. Even though everyone wants the same thing, uncertainty about how others will act can lead to coordination failures that impede collective action.[27] Measures to enhance collective action associated

Box 4.1 A standard selfish choice model of behaviour

Preferences are exogenous and drive each decisionmaker (or agent) to pursue individual self-interest (box figure 1). The agent's beliefs, separate and independent from preferences, are based on information collected to help the agent make a specific decision. For instance, given a preference not to get drenched, an agent needs to form a belief about whether it is going to rain before choosing whether to take an umbrella when going out. The belief is based on the collection of information, such as by consulting a weather forecast in the evening. And the preference to not get drenched has no bearing on how the belief is formed (so things such as wishful thinking, where the preference not to get drenched shapes the belief that it is not going to rain, are not allowed in this model of behaviour). Beliefs are updated if the information changes—if the weather forecast consulted in the morning is different from the one consulted the previous evening. Rational cognition is defined by a set of axioms implying, among other things, that preferences can always be ordered in a consistent way.

Box figure 1 In a standard selfish choice model, behaviour is determined by the exclusive pursuit of self-interest



Scope of interventions to change choices

- Correct "market faliures" (externalities, information asymmetries and the like) through regulation/decentralized approaches
- Governance

- Preferences are stable
- Beliefs are informed by optimal (not too little, not too much) collection and processing of information, for any given preferences
- Rational cognition: doing as well as (she rationally believes) she can, assuming that everyone else is doing to the same

Source: Human Development Report Office elaboration based on Elster (2015a, 2020) and Hoff and Stiglitz (2016).

with coordination challenges include those directed towards ameliorating this uncertainty, through interventions that seek to get everyone on the same page (or side of the road).[28]

Transforming cooperation challenges into coordination problems can enhance global collective action

Coordination challenges related to transportation and communication have been successfully overcome at the global level, resulting in collective action for the adoption of regulatory practices and regimes that enable air travel, maritime shipping and digital communication.[29] The resulting standards yield very high benefits and very few constraints (a country is constrained in not opting out of the standard but would derive no benefits from doing so). And though these standards are sometimes derided as instances of shallow international cooperation,[30] their existence may suggest that global collective action that results from addressing coordination problems is something that sovereign countries can readily do.[31]

But a very different scenario emerges in the second situation, when the pursuit of varied selfish interests is not aligned with what would be more desirable collectively. When what most advances each decisionmaker's self-interest is not the best possible collective outcome, this situation creates a social dilemma between self-interest and collective action. Chapter 3 showed that this situation plagues many global public goods. Collective action in this case requires cooperation, so that decisionmakers choose an action that is suboptimal for their selfish interests but superior for the collective. Recognizing that countries find it relatively easy to coordinate their actions—even while struggling to voluntarily cooperate and sometimes enforcing agreements to do so[32]—opens the possibility of designing institutions (such as multilateral organizations or international treaties) that shape incentives so that a cooperation challenge becomes a coordination problem.[33]

> "Summation global public goods typically require cooperation, but institutions can be designed in a way that reshapes incentives to turn a social dilemma into a coordination problem, as with the Montreal Protocol

How can challenges of international cooperation be reshaped as problems of international coordination? It is possible to learn from multiple successful examples of such reshaping (spotlight 4.1). For weakest-link global public goods, such as eradicating a global (and eradicable) communicable disease, we are already close to a coordination problem. This gives insights into the kind of reshaping that could be pursued. In disease eradication all countries share the same objective, this objective can be defined with certainty and precision and each country has an incentive to contribute if it can be sure that other countries will do their part.[34] The key challenge is for countries to coordinate their actions in a way that sustains incentives to shore up the weakest links until the disease is eliminated.

Summation global public goods typically require cooperation, but institutions (for instance, international treaties) can be designed in a way that reshapes incentives to turn a social dilemma into a coordination problem, as with the Montreal Protocol.[35] Asking countries to contribute to the summation global public good of avoiding depletion of the ozone layer by limiting emissions of ozone-thinning chlorofluorocarbons (CFCs) is a call for international cooperation. But the treaty did not simply do that. It also banned trade in CFCs and products containing CFCs between countries that were parties to the treaty and countries that were not, effectively providing incentives for high-income countries to sign the treaty. This is because trade interactions between countries are bilateral and reciprocal, with compliance easier to monitor and enforce (spotlight 4.1).[36]

Stipulating a minimum number of ratifying countries for the Montreal Protocol to enter into force meant that a tipping point was eventually reached, aligning incentives to make (high-income) nonsignatory parties better off by signing the treaty—thus resolving a coordination problem.[37] To provide incentives for low- and middle-income countries to sign the treaty, a later amendment established a financial mechanism (the Montreal Fund) to compensate countries for the incremental cost of participation. These side payments induced virtually universal participation. Finally, technological alternatives to CFCs were widely shared and advertised, including by firms that stood to gain from adopting these alternatives.[38]

Uncertainty can harm international collective action

Setting thresholds can motivate collective action, as seen in disease eradication (where the threshold for full provision is eliminating the disease in the weakest-link country)[39] or in the Montreal Protocol (with the establishment of a minimum number of countries for the treaty to come into effect, plus the trade provisions). The underprovision of some global public goods, such as climate change mitigation or biodiversity preservation, is often framed as the need to stay within boundaries or limits[40] to avoid reaching tipping points in planetary systems that could result in catastrophic outcomes.[41] Presenting thresholds that, once crossed, can result in catastrophic societal collapse could galvanize collective action.[42] But there are two critical conditions.[43] First, the thresholds must be known with little uncertainty. Second, each country must share the burden of not passing the threshold.[44]

When there is uncertainty about where the thresholds lie, collective action becomes more difficult. For disease eradication, to achieve zero cases globally, each country has to achieve zero cases nationally. But when there is no unambiguous way of determining how much each country should contribute to ensure that the world stays under a threshold for catastrophe, that calls for some agreement about how to allocate effort across countries.[45] These two factors imply a very different set of incentives for countries.[46]

> "The standard selfish choice model can provide insights about how to enhance the provision of global public goods. Its behavioural assumptions emphasize the use of incentives, resources and information to make provision more likely

While much effort centres on estimates of damages from crossing climate thresholds or whether damages are overstated or understated,[47] uncertainty about these damages does not seem to matter as much for cooperation as uncertainty over the thresholds.[48] Because even though the decision on whether to cooperate has no influence on the scale of the damages (which depends only on whether the threshold is crossed), whether countries cooperate does bear on whether the threshold is surpassed.[49]

In the case of existential risks, these insights could inform ways to structure incentives through institutions to enable cooperation associated with providing global public goods that reduce those risks.[50] These insights also suggest that it is far more important to reduce threshold uncertainty than damages uncertainty, a challenging task given the underlying ambiguity in many of the thresholds of interest.[51]

The standard selfish choice model can thus provide insights about how to enhance the provision of global public goods. Its behavioural assumptions emphasize the use of incentives (trade provisions in the Montreal Protocol), resources (the Montreal Fund) and information (about the damage caused by CFCs and the availability of alternatives) to make provision more likely. But these assumptions also have limits, not only in not accounting for actual behaviour but also in lacking power to account for some of the obstacles to collective action that call for a broader understanding of the drivers of human behaviour.[52] Behavioural science provides an initial steppingstone towards a broader explanation of behaviour.

Apply insights from behavioural science, but handle with care

Insights from behavioural science reveal how decisions depart from the behaviour predicted by the standard selfish model of choice (box 4.2).[53] These departures give added insights in understanding when and why collective action takes place and provide opportunities to design interventions that make the provision of global public goods more likely.[54] At the same time, as the discussion will make clear, despite the enormous interest in designing interventions based on behavioural science, there are severe limitations as well, that range from the lack of replicability of some findings, questions about their validity beyond specific experiments and the assumption that the policymaker "knows better" than individuals—among others. That is why it is important to consider insights from behavioural science but to also handle them with care.

Beyond selfishness—recognizing social preferences

With social preferences decisionmakers consider the welfare of others, not just their self-interest, and are prosocial when that evaluation is positive.[55] Pure self-interest can motivate cooperation through reciprocity in repeated interactions (giving something today while expecting to get something in return tomorrow).[56] But people often reciprocate more generously when others behave in a friendly way and punish more harshly those who do not (even if at great cost), indicating that social preferences are likely at play.[57]

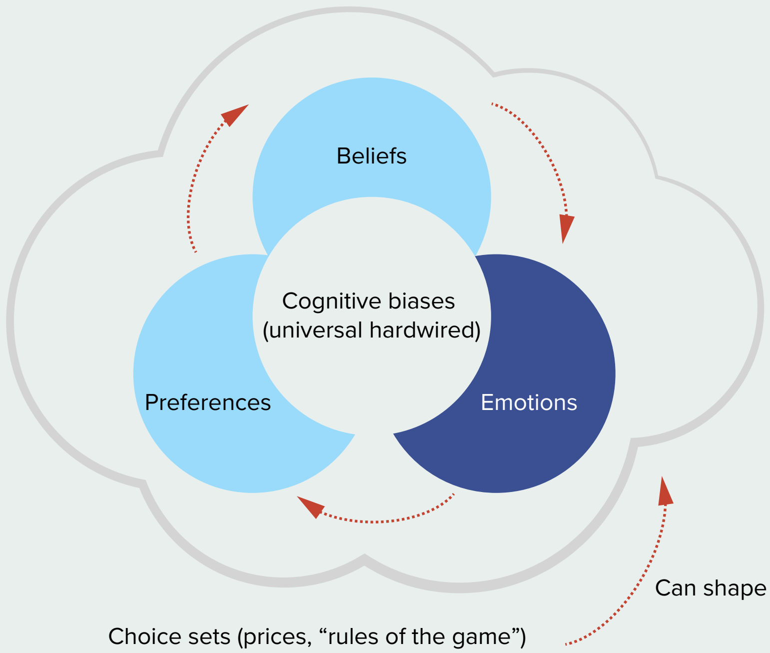
People vary in the extent to which they have either selfish or prosocial preferences and in how they express social preferences.[58] A recent comprehensive review of social preferences provides some key insights.[59] When, at the turn of the 20th century, researchers concluded based on systematic evidence from experiments that some people had social preferences, respondents who expressed these preferences were described as being "crazy."[60] Yet evidence from nationally representative samples suggests that in many countries people holding purely selfish preferences are in the minority (representing 5–20 percent of the population in countries with data).[61]

Box 4.2 A behavioural choice model of decisionmaking

Preferences, beliefs and cognition interact to shape how people make decisions (box figure 1). Preferences can be social, meaning that the individual takes account of other people's welfare. Preferences can be fickle and influenced by (sometimes transitory) emotions. Fear triggered by the belief that there is a threat tends to make people more risk averse, while anger tends to make them more risk seeking. Beliefs are driven not only by the processing of information but also by one's identity (perceptions of belonging to a particular group that holds a particular view) or preferences (for instance, motivated reasoning, as in wishful thinking, which makes people believe that a goal they are pursuing is more likely to be achieved). When beliefs are deeply held or linked to a salient aspect of a person's identity, they can trigger strong emotional responses (as when challenging deeply held religious or political beliefs triggers anger, disgust or hate). There are multiple deviations from rational cognition—for example, how a decision is framed affects choices, and how people discount the future is not consistent along different time horizons.

Box figure 1 Social context shapes what people think and do at the moment of choice

Individual determinants of choice



Social determinants of choice — Choice sets (prices, "rules of the game"); **Choice architecture, social norms**

Scope of interventions to shape choices
- Incentives, regulation, governance
- **Behavioural science (priming, nudging)**

- Preferences can be fickle (emotions "interfere")
- Beliefs can be motivated (by preferences)
- Cognitive biases and limitations (loss aversion, hyperbolic discounting, representative heuristics, ...) are hardwired and universal

Note: The text in bold to the right of "Social determinants of choice" and "Scope of interventions to shape choices" denotes the new elements that are added to the selfish choice model of behaviour (which remains relevant).
Source: Human Development Report Office elaboration based on Elster (2015a, 2020) and Hoff and Stiglitz (2016).

Some evidence suggests that holding prosocial preferences is a direct determinant of wellbeing, with a positive effect similar in size to the effects of parenthood, income and education.[62] In addition, there are very strong positive links between prosocial preferences and cooperation.[63] When social preferences take the form of aversion to inequality, more heterogeneous collectives (in either resources or benefits derived from public goods) are less likely to achieve and sustain cooperation, which provides a rationale for reducing inequalities to foster cooperation.[64]

Do these relationships between individual social preferences and cooperation scale from the individual to more aggregated levels? Particularly relevant for the provision of global public goods is whether the relationships scale up to countries. Some evidence suggests that they can (box 4.3). With the assumption of prosocial preferences, the prognosis for summation global public goods can change. For instance, in the standard selfish choice model a country's unilateral increase to a summation global public good (say, abatement of greenhouse gases to mitigate climate change) will not only not incentivize other countries to contribute but will also likely provoke a reduction in their efforts. But that expected outcome changes if the other countries behave as if having prosocial preferences: in that case contributions to summation global public goods are no longer pure substitutes but become complements.[65]

Harnessing social norms

Social norms set shared expectations of behavior, providing structure to people's beliefs and bearing on the decision to cooperate (box 4.4).[66] In many circumstances, they can be stronger determinants of behaviour than the individual pursuit of material wellbeing.[67] For instance, social norms can establish what may be required to earn a reputation as a cooperator.[68] Concerns with social image can also drive prosocial behaviour: because most people care about what they believe others will think of them, they tend to make more prosocial choices in public.[69] The effectiveness of social norms in shaping behaviour depends in part on norm enforceability (or beliefs about

Box 4.3 Social preferences can scale up

A complicating factor in addressing whether social preferences scale up is the great variation across people in every country. The outcome of cooperation at the group level depends on the number and intensity of individuals with prosocial preferences.[1] Another challenge is that while cooperation may be strong within groups in society (as for people sharing the same political beliefs), it may be difficult to get cooperation between groups. In fact, strong negative reciprocity (punishing, or threating to punish, another group harshly) may trigger retaliatory action (or even preemptive aggression)[2] by those who are punished or threatened with punishment.[3] And that can result in intergroup conflict.[4] Chapter 6 explores in more detail the implications of this type of intergroup dynamics, which are particularly challenging in polarized societies.

Still, recent advances in measuring differences in preferences at the global level are starting to provide some answers about what scales up to countries. In an experimentally validated survey[5] on the social preferences of 80,000 people in 76 countries, cross-country variation in charitable giving is correlated with prosocial preferences, after factors that could also explain charitable giving are controlled for.[6] In addition, after the same factors are controlled for, countries with a higher degree of negative reciprocity have suffered more violent conflicts.[7] A study of 40 countries found that people everywhere were more likely to return a wallet with money than what a standard selfish choice model would predict,[8] with prosocial preferences (in this case, measured by the extent to which concerns for welfare extend beyond one's ingroup) playing a role.[9] And in another study of 31 countries, prosocial preferences were associated with better environmental performance—a proxy for cooperation to manage environmental externalities—and material interests mattered less than appeals to everyday cooperative behaviour.[10]

Notes

1. In an experiment Fehr and Fischbacher (2003) show that a minority of altruists can force a majority of selfish individuals to cooperate but that a few egoists can induce a large number of altruists to defect—and that the context matters in both cases. Hauser and others (2014) show that mechanisms can be designed to ensure that those with prosocial preferences can restrain defectors in an intergenerational public goods game. And Gächter, Kölle and Quercia (2017) show that it matters whether the challenge is to provide or maintain a public good. **2.** Böhm, Rusch and Gürerk 2016. **3.** Nikiforakis 2008. **4.** For a broader review of the psychological foundations of intergroup conflict, see Böhm, Rusch and Baron (2020) and De Dreu and others (2022). There is growing evidence of differences between dispositions to defend or to attack. For instance, consistent with loss aversion, experiments suggest that people invest more resources to protect against losses than to achieve victory (Chowdhury and Topolyan 2016; De Dreu and Gross 2019). **5.** See Falk and others (2023) for details. **6.** Falk and others 2018. **7.** This variation in preferences appears to be deeply rooted in history and to be path dependent (Becker, Enke and Falk 2020). **8.** Whether the interaction was in person or mediated through computers made a difference. Interaction through computers increased cheating threefold compared with in-person interactions (Cohn, Gesche and Maréchal 2022). **9.** Cohn and others 2019. **10.** Van Doesum and others 2021. The findings were contested (Komatsu, Rappleye and Silova 2022) but appear to hold after scrutiny (Van Doesum and others 2022).

Box 4.4 **"It's not a lie if you believe it"—Beliefs, social norms and collective action**

The formation of beliefs and their interaction with preferences and emotions has implications for collective action.[1] For beliefs about how others will behave during social interactions, the standard selfish choice approach assumes that everyone behaves the same way.[2] The behavioural approach allows for more nuance and variability in how we expect others to behave, which can be influenced by factors ranging from the ability of agents to communicate[3] to perceptions of trust among agents[4] and assumptions about the preferences of others (whether they are conditional cooperators).[5]

Mechanisms of controlling and selecting those with whom to cooperate are key to sustaining cooperation,[6] with reputation a key driver of beliefs about whether counterparties are likely to cooperate (or reciprocate in the future).[7] These mechanisms can also support cooperation across groups (including countries) in what has been termed "universal cooperation."[8]

People differ in how much they are influenced by the decisions and behaviours of others.[9] There is substantial evidence that social comparison is a powerful driver of changes in individual behaviour, including changes aimed at addressing climate change.[10] Shifts in social norms can also drive changes towards more cooperative behaviour[11] in the face of threats.[12] In addition, social contagion appears to be a strong mechanism leading to proactive cooperative behaviour not only when responding to threats but also as evidenced when behaviour by neighbours is replicated, as in the adoption of solar panels.[13] People are more driven to change their behaviour when they observe others acting than when they simply receive information on the benefits of the cooperative action.[14] Policy interventions have the potential to tip social norms towards more desirable outcomes (including more cooperation).[15] And this potential has been studied across a wide range of challenges, from handling misinformation to advancing public health and fostering collective action for sustainability.[16]

Notes

1. Isler and others 2021. The quote in the title of the box is a line by the character George Costanza in the television series "Seinfeld," as used in Bicchieri, Dimant and Sonderegger (2019). **2.** This also includes subjective beliefs, for instance, about whether countries are optimistic or pessimistic, as explored in Im, İriş and Ko (2022). Fehr and Charness (forthcoming) discuss belief-dependent social preferences (where beliefs about the intentions of other players matter) using models of reciprocity and guilt aversion (related to theories that include emotions as part of social preferences). **3.** Barbieri 2023; Crawford 2019; Ellingsen, Östling and Wengström 2018. **4.** Bose and Camerer 2021; Schilke, Reimann and Cook 2021. Emotions affect how trust beliefs are formulated, with angry people typically being seen as less trustworthy (Kausel and Connolly 2014). Some evidence suggests that people who have a preference both for being honest and for being seen as honest are more likely to be truthful (Abeler, Nosenzo and Raymond 2019). **5.** Engelmann and others (2019) show the neural signals when beliefs about conditional cooperation are violated. **6.** Reviewing the experimental literature on infinitely repeated games, Dal Bó and Fréchette (2018) find that while cooperation can be supported in equilibria, it does not imply that most subjects will cooperate to begin with—cooperation will emerge only when the structure of the game is robust to strategic uncertainty. **7.** Balliet and Van Lange 2013; Gross and De Dreu 2019; Jordan and Kteily 2023; Rand and Nowak 2013; Roberts and others 2021. **8.** Gross and others 2023. **9.** Kendal and others 2018; Mesoudi and others 2016. In part because that much social information is "wasted," in that it is not used in individual decisionmaking (Morin and others 2021), leading to heterogeneity across the population. **10.** In a second-order meta-analysis of 10 meta-analyses of 430 primary studies, Bergquist and others (2023) found that social comparison was one of the most important mechanisms in driving changes in behaviour, such as towards sustainable transportation or circular consumption to mitigate climate change. **11.** For a review of evidence, mechanisms and potential to inspire interventions to harness social norms, see Frank (2021). See also UNDP (2020b). For the social dimensions of fertility choices and consumption patterns, see Barrett and others (2020). **12.** Szekely and others 2021. **13.** Allcott 2011; Barnes, Krishen and Chan 2022; Bollinger and Gillingham 2012. **14.** Kraft-Todd and others 2018. **15.** Andreoni, Nikiforakis and Siegenthaler 2021. **16.** Nyborg and others 2016. See the review in Efferson, Vogt and von Flüe (forthcoming).

its enforceability),[70] on how strict the norms are[71] and on the balance between rewards for compliance with norms and punishments for deviations from them.[72]

Emotions play a central role in compliance with social norms, with people complying to avoid shame or guilt and people motivated to enforce norms out of anger or disgust for norm violators.[73] A social norm of conditional cooperation—full cooperation as long as others also fully cooperate and reduced cooperation as others' contributions go down—can account for a large set of regularly documented cooperation-related behaviours.[74] In repeated interactions the observed behaviour of others can inform the decision on whether to cooperate and by how much. But in one-shot interactions or when the behaviour of others is not observed, beliefs about how others will behave are determinant. This insight is crucial to the discussion in chapter 6 on the potential of misperceptions about what others believe to hinder collective action.[75]

Social norms can be harnessed to change collective action at scale[76] (see box 4.4) and have distinctive characteristics that aggregate to countries, which accounts for differences in cooperative behaviour.[77] One such characteristic is the tightness of social norms (as measured by the harshness of punishment of behaviour that deviates from the norm), which appears to vary systematically across countries[78] and change over time.[79] When facing a collective threat,[80] countries with tighter norms may cooperate better internally because of the cohesive glue of strong social norms.[81] But extreme tightness can make cooperation across groups or countries more challenging (or can even trigger conflict).[82] Tighter social norms can also make adaptations to a changing context more difficult, potentially resulting in a mismatch between internal and international cooperative arrangements in the face of new threats and challenges, with implications for the provision of new global public goods.[83]

> “Leadership can propel and sustain social norms that are supportive of international cooperation: that can shift norms and trigger reciprocal actions from other countries that further entrench the norm of contributing to the global public good

Moreover, global norms often influence countries' decisions.[84] For instance, norms against gender inequality spread globally.[85] But as with any social norm, progress cannot be taken for granted. And it can be subject to contestation, particularly when polarization fuels backlash against more inclusive norms, as discussed in chapter 6.[86] But leadership can propel and sustain social norms that are supportive of international cooperation, for instance, when a country takes the lead on providing a summation global public good such as mitigating climate change: that can shift norms and trigger reciprocal actions from other countries that further entrench the norm of contributing to the global public good.[87]

Drawing on cognitive biases

Almost 200 cognitive biases have been identified to explain several puzzles in the social sciences,[88] opening windows for new policy interventions and motivating a wide range of organizations[89] and initiatives around the world that seek to enrich public policy with these insights (figure 4.2 and spotlight 4.2).[90] For instance, loss aversion (people caring more about a loss than an equivalent gain) has been empirically documented in a wide range of studies.[91] This insight has explained behaviours where the framing as a loss or gain influences decisions ranging from how much to work[92] to political choices[93] to why people tend to hold on to their beliefs[94] and to the design of strategies to foster learning.[95] More generally, behavioural insights have informed policy[96] through new policy tools (such as nudges), enabling better predictions about the impact of policies and generating new implications for how to enhance welfare[97] and its distribution.[98]

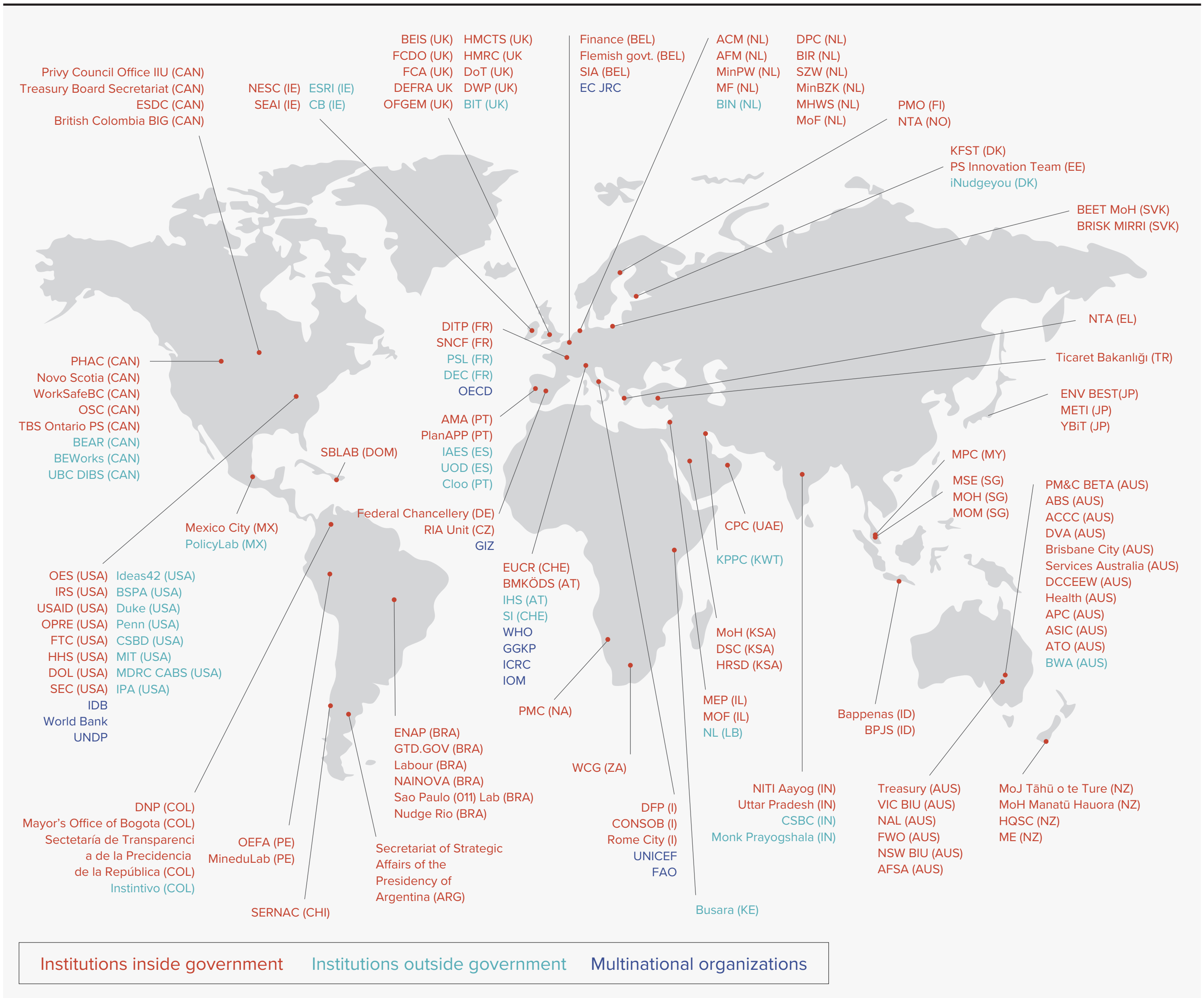
Some interventions informed by recognizing cognitive biases seek to directly change individual behaviour, many of them through nudges, which have had encouraging results in some domains.[99] Despite advocacy, including to support the response to the Covid-19 pandemic,[100] the uptake of insights derived from identifying cognitive biases has been mixed (box 4.5).

In fact, insights from behavioural science not only have to confront challenges associated with the replicability of several studies, but they also face a problem in the lack of an overarching theory that can account for the multiplicity of biases that are being documented (spotlight 4.2).[101] The relevance of behavioural science findings may lie less in providing descriptions of behaviour that is empirically more realistic, or a catalogue of ills to be addressed by nudges, and more as a guide to help decisionmakers achieve desired collective outcomes.[102] But that requires a framework to interpret how these biases interact with institutions and broader determinants of human behaviour (discussed thus far as if they were universal and hardwired, an assumption that will be relaxed in the next section).[103]

Recognize how culture shapes behaviour and institutions

Behaviour during the Covid-19 pandemic illustrates the importance of having a broader understanding of behaviour that goes beyond selfish choice and behavioural insights and extends to an explicit consideration of the role of culture and its change over time (box 4.6).[104] There are many approaches to doing this, from sociologists interested in structuration to anthropologists interested in cultural economy and

Figure 4.2 Widespread efforts draw on behavioural insights to inform public policy



Source: Organisation for Economic Co-operation and Development, Observatory of Public Sector Innovation (https://oecd-opsi.org/blog/mapping-behavioural-insights/).

politics to approaches drawing attention to structural political economy.[105] Cultural evolution (spotlight 4.3) is one such approach among many that consider historical, social and relational perspectives that have been pursued across many disciplines. It is one way of accounting for how behaviour and culture interact in different societies and create packages adapted to address cooperative challenges at scale, with distinct cultural and behavioural traits.[106]

Insights from recognizing how behaviour and institutions are contingent on the social context and its change over time can be mobilized to address shared challenges, including the provision of such global public goods as climate change mitigation. These insights suggest that people can be expected to react differently to different interventions, as opposed to assuming that all people behave according to the standard selfish choice model or that they are all constrained by universal and hard-wired cognitive and other biases.[107] Another insight is that it is important to understand the interplay between social norm psychology and social identity to understand drivers of cooperation.[108] To see why and how, consider first the perils of interventions that start from either end of the behaviour–institution interaction (see figure 4.1).

Box 4.5 The promise and peril of nudges in changing behaviour

Nudges attempt to change the choice context to increase the likelihood of people making decisions that contribute to meeting a policy goal without precluding any other choices or relying on economic incentives (for instance, changing default options on organ donations or retirement savings or framing incentives as losses instead of gains, given loss aversion).[1] Nudges not only seek to improve individual welfare but also tackle collective challenges, including green nudges to change behaviour towards climate and environmentally friendly choices.[2] They have the potential to increase the effectiveness of price-based interventions to mitigate climate change, such as carbon taxes, including by enhancing the public acceptance of taxes.[3] Thus, insights from behavioural science linked to cognitive biases are now regularly considered in the design and implementation of environmental policy[4] and in the provision of global public goods such as climate stability[5] and biodiversity conservation.[6] The potential to derive insights from behavioural sciences has been explored for enhancing the provision of global public goods within international law[7] and international relations.[8]

Once again, the question is the extent to which individual behaviour aggregates into biased aggregate outcomes. For instance, people may self-select or be sorted into groups with similar degrees of cognitive bias. If this is the case, some groups might deviate less, in the aggregate, from the selfish choice behaviour than others. Even with this type of sorting, whether biases matter depends on the decision being considered for accomplishing a certain task. For some tasks a group that gathers individuals who behave more according to the selfish choice model does not produce biased aggregate outcomes. But for other tasks biases can be amplified in the aggregate even when selfish choice and biased people are sorted into different groups.[9]

Understanding how and why this sorting matters for some tasks and not others is an important area for research. It is particularly relevant in the international context, where decisions on behalf of countries negotiating treaties are made by individuals empowered to represent those countries. In negotiations for climate change, negotiating peers perceive the credibility of country commitments to mitigate climate change to be determined by the quality of institutions in that country—with economic factors such as economic benefits and costs of those commitments bearing less on credibility.[10]

Whether decisionmakers are subject to biases is thus particularly important. It has been argued that decisionmakers among the elite may be less prone to biases and act more in line with the selfish choice model.[11] But this does not mean that they are not influenced at all by biases,[12] particularly when their decisions touch on issues salient in people's lives (such as climate change or management of a pandemic). Public opinion[13]—or, at a minimum, elites' perceptions of public opinion[14]—matters and is often conditioned by cognitive biases.[15]

There is an ongoing debate on the extent to which nudges and other behavioural interventions are effective.[16] In a study of 73 randomized controlled trials in 67 US cities implemented in collaboration with a national nudge unit, fewer than a third of the nudges were adopted in policy.[17] There are several barriers in translating insights from behavioural science into policy,[18] but recent debates on the size of the effects of interventions reported in the literature have further moderated policymakers' enthusiasm.[19] Information gathered from more than 200 studies reporting 440 effect sizes remains inconclusive.[20] There is also a difference between effects reported in small samples and effects realized when interventions are taken to scale. In 126 randomized controlled trials covering 23 million people, the average impact of interventions (that, is, at scale given the number of people covered) was 1.4 percentage points, compared with 8.7 percentage points in literature that typically relies on small samples.[21]

Notes

1. Thaler 2018; Thaler and Sunstein 2003. **2.** Carlsson and others 2021. Some green nudges are reportedly very effective. For instance, in China green nudges increased individuals' share of food orders with no cutlery (thus reducing plastic waste) more than sixfold (He and others 2023). **3.** Gravert and Shreedhar 2022. **4.** For a general review, see Carlsson and Johansson-Stenman (2012). **5.** See Brekke and Johansson-Stenman (2008) for a framework and early review. **6.** Travers and others 2021. **7.** van Aaken 2018. Although attention has also been drawn to some potential limitations. See the introduction to a symposium on this theme in van der Zee, Fikfak and Peat (2021) as well as Yildiz and Yüksel (2022). **8.** Davis 2023; Davis and McDermott 2021. **9.** Enke, Graeber and Oprea 2023. **10.** Victor, Lumkowsky and Dannenberg 2022. **11.** Hafner-Burton, Hughes and Victor 2013. There is also evidence that some elites appear to have weaker social preferences (Fisman and others 2015). **12.** As found in Mildenberger and Tingley (2019). **13.** Anderson, Böhmelt and Ward 2017; Oehl, Schaffer and Bernauer 2017. **14.** Hertel-Fernandez, Mildenberger and Stokes 2019. **15.** Webster and Albertson 2022. **16.** See, for instance, Dimant, van Kleef and Shalvi (2020), Guttman-Kenney and others (2023) and Bicchieri and Dimant (2022). **17.** DellaVigna, Kim and Linos 2022. **18.** As reviewed in Linos (2023). For a set of proposals on how to address some of the challenges, see Mažar and Soman (2022). **19.** And behavioural interventions have been unable to address some major challenges, such as how to reduce economic inequality (Ruggeri and others 2022). **20.** The original study by Mertens and others (2022a) reports a Cohen's *d* (a standardized measure of the difference between the mean of the untreated group and the treated group) of 0.43, but after reanalysing the data and correcting for publication bias (that only statistically significant results are published; more surprising results are more likely to be published) and heterogeneity (whether the findings extend beyond the sample used for the study), Szaszi and others (2022) find an effect of 0 (in a response, Mertens and others (2022b) agree with the importance of addressing issues associated with publication bias and heterogeneity). **21.** With respect to two nudge units in the United States: DellaVigna and Linos (2022) and Webster and Albertson (2022).

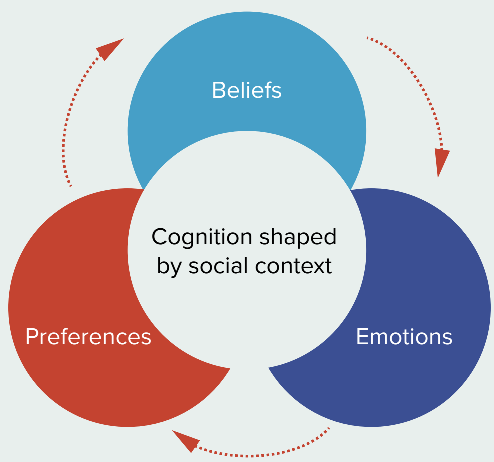
Box 4.6 Social context shapes what people do and how they see themselves

Taking account of the interplay between behaviour and culture suggests that human choices need to be understood within the social context that shapes not only individual preferences and the architecture of choice but also how people see themselves and how they see others (box figure 1).[1] That is, who they are.[2] The entanglement of behaviour and culture opens the possibility of understanding the processes of social choice and the potential scope for interventions—in ways that recognize when and how they can be mutually reinforcing, as opposed to pinning all hopes on either institutions or behaviour to enhance collective action. This approach also implies recognizing that some processes of social choice change endogenously, so the interventions may have unintended consequences. Even if these are not possible to predict with precision, being aware of this possibility and understanding the mechanisms for them to emerge can enhance policy design and implementation.[3] This implies that criteria for the design of interventions (either behavioural or institutional) should consider efficiency and equity as well as efficiently evolving institutions to account for both a changing world and the endogenous dynamics of change between behaviours and institutions.[4]

Box figure 1 Social context shapes who people are

Culturally embedded

Individual determinants of choice



Social determinants of choice	Choice sets (prices, "rules of the game"), social norms, cognitive biases/limitations, **culture**
Scope of interventions to shape choices	- Incentives, regulation, governance - Behavioural science (priming, nudging, boosting) - Social norms **- Social identities, worldviews, narratives, frames**

Note: The text in bold to the right of "Social determinants of choice" and "Scope of interventions to shape choices" denotes the new elements that are added to the selfish choice model and to the behavioural choice model (which remains relevant).
Source: Human Development Report Office elaboration based on Hoff and Stiglitz (2016).

Notes
1. Lamont 2023. **2.** This is where the discussion arrived, but it is the point of departure for sociology (Lamont 2019). This makes insights from sociology also relevant, particularly recent developments on understanding culture as a toolkit from which people draw cultural resources to navigate their life (Swidler 1986). These have been inspired in part by insights from the cognitive and behavioural sciences (DiMaggio 1997; Dimaggio and Markus 2010; Lamont and others 2017). These insights have already been incorporated into models and accounts of institutional change by economists (Acemoglu and Robinson 2022, 2023). **3.** Hébert-Dufresne and others (2022) present a model of this endogenous process of social choice. **4.** Schimmelpfennig and Muthukrishna 2023.

Ignoring the interaction between behaviour and institutions is perilous

The perils of starting with institutions is perhaps more widely understood. Transplanting institutions[109] from the context in which they emerged to settings with different behavioural, social and economic contexts has been widely documented. Institutions, including legal institutions and mechanisms to enforce formal law, typically work in shaping behaviour if there is already an equilibrium resulting from an underlying set of beliefs that sustains cooperation.[110] This may very well be the case in an international context, except perhaps outside interactions where direct reciprocity fosters cooperation; some evidence suggests that the effectiveness of international agreements sometimes does not depend on whether there is an enforcement mechanism.[111]

Formal institutions set very important structural features of contemporary societies, so understanding flaws in those structural features (which can exacerbate inequalities in human development, perpetuate exclusion or impede collective action) and how to change them is crucial.[112] The contribution of the discussion in this section towards this goal is not to assume politics away or to minimize the importance of formal institutions but rather to probe how assumptions about behaviour also shape how those flaws are identified and what to do to correct them (box 4.7).[113]

But there also are perils in attempting to start from the other end, towards changing behaviour to foster collective outcomes, without taking into account the institutional and broad cultural context in which the changes are pursued. As noted, changes in behaviour can be pursued directly (creating nudges, for instance) or indirectly (making people change choices voluntarily based on their observation of others, particularly when social norms reach tipping points that make individual and social beneficial behaviours ubiquitous).[114] These processes can be mobilized to support the provision of global public goods.[115] Imitative adoption played a crucial role in the spread of solar panels in Germany around the 2000s, advancing from an initial slow adoption to a rapid spread that led the country to generate more solar power per capita than any other country by 2009.[116]

Enhancing collective action requires understanding differences in preferences and beliefs shaped by social contexts

Interventions can trigger rapid shifts in social norms,[117] but identifying when and how tipping occurs requires understanding how preferences and beliefs are distributed across the population. Both preferences and beliefs can be shaped by cultural and social contexts, and ignoring differences can result in ineffective or, worse, misguided interventions (box 4.8).[118] Often, experimental studies draw on university students or segments of the population that may be more prosperous than average. There is also variation in the strength of behavioural effects across the population according to education and income (figure 4.3).

Variation also occurs across countries when effects based on one intervention were not observed when the intervention was implemented in an alternative way[119] or when interventions were explored across countries. These different outcomes point to the importance of recognizing how behaviours and institutions interact with culture.[120] It has long been recognized that signature findings of behavioural insights from experiments in high-income countries in Europe and North America are not generalizable, as shown by a failure to replicate the results in different contexts.[121] Moreover, over the course of human history and even today, most people have not lived in such settings,[122] implying the need for caution in generalizing claims from results based on samples from these settings.[123]

> “Both preferences and beliefs can be shaped by cultural and social contexts, and ignoring differences can result in ineffective or, worse, misguided interventions

Recent work uncovered substantial cultural differences in preferences and beliefs associated with economic inequality, supporting the notion that cultural processes are at play in shaping this diversity across and within countries.[124] For preferences on how much inequality people accept or are averse to, much depends on the kinds of inequality that people consider to be unfair.[125] Representative surveys in 60 countries documented variation across countries in the extent to which people subscribe to one of three views

Box 4.7 Where are the politics?

One simplified way of identifying where the politics lie is to assume that there are two types of interactions relevant for collective action within countries.[1] One pertains to setting up the rules of the game—the conditions under which society is governed. This can be considered the realm of politics, which determines who holds power to do what and how.[2] These rules are codified in documents, from constitutions to civil and penal codes to jurisprudence (in short, the law). The creation, execution and enforcement of the law are ensured by formal institutions. Interactions of the other type then unfold within the law—the social and economic decisions undertaken by people and other formal institutions (those with legal status, such as firms or civil society organizations). Each of these realms is the subject of entire disciplines, including political science for the first, and much of economics for the second.

The two sets of interactions are mutually constitutive. For instance, rules can enable the accumulation of wealth and resources by certain agents that, in turn, can mobilize those resources to further advance their economic advantage in the domain of political interactions, through direct capture of political office, lobbying or the use of the media.

Still, as important as the law and rules are, there is a growing appreciation that contracts are notoriously incomplete (and externalities are pervasive), with the irreducible incompleteness of the law and formal institutions particularly relevant in contexts of uncertainty.[3] So, economic and social behaviour is also regulated in part by social norms in which the formation of beliefs and preferences and how they change over time and across people and countries have crucial importance.[4]

But behavioural assumptions, and the role of beliefs, matter even without assuming the irreducible incompleteness of the law. Why do people comply with the law, and how can social order be maintained in diverse societies? The selfish choice model suggests that people are motivated to seek individual gains and avoid losses, so these assumptions would suggest the use of strategies that deter law violators.[5] While these strategies matter, so do beliefs about the legitimacy of formal institutions: “Legitimacy is a concept meant to capture the beliefs that bolster willing obedience.”[6]

Under this perspective people obey the law due in part to a common commitment to obey formal institutions, sustained by the belief that there is an obligation to obey (value-based legitimacy) that is then reflected in actual compliance (behavioural legitimacy). Within this framework antecedents to value-based legitimacy include components of how the formal institutions are perceived (motivations of leaders, administrative competence and the performance of formal institutions in delivering on their public purposes, including the provision of public goods) and views about procedural justice (whether the exercise of authority is perceived as fair). Within views about procedural justice, the perception that government procedures are unfair often motivates disobedience, evasion and resistance to legal demands, with deterrence motives overwhelmed and ineffective in these cases.[7]

The role of beliefs also comes to the fore when formal institutions undergo change. Fundamental institutional change often takes place during critical junctures when there is uncertainty about the shape that future institutions will take. A recent strand of literature shows that the dispersion of beliefs about future institutions can help identify these critical junctures. How these beliefs diffuse and get consolidated around particular views shapes in part the rules of the game that societies end up with.[8] Some of the evidence comes from contexts where people can choose to rely on formal state institutions or on nonstate entities (for instance, in dispute resolution) or where there are competing claims to the formal governance institutions, which shows that beliefs (about which arrangement is more effective or more enduring) not the formal institutions themselves causally determine behaviour.[9]

In sum, there is growing recognition of the importance of beliefs in shaping the two set of interactions and a recognition that they are shaped by the dynamic interaction between behaviour and institutions. Political scientist Margaret Levi titled a recent account of her intellectual journey “The Power of Beliefs.”[10] And economist Kaushik Basu titled a deep reflection on the relationship between law and economics “The Republic of Beliefs” because “The might of the law, even though it may be backed by handcuffs, jails, and guns, is, in its elemental form, rooted in beliefs carried in the heads of people in society [...], creating enormous edifices of force and power, at times so strong that they seem to transcend all individuals, and create the illusion of some mysterious diktat enforced from above. In truth, the most important ingredients of a republic, including its power and might, reside in nothing more than the beliefs and expectations of ordinary people.”[11]

Notes

1. Inspired by Hurwicz (1996), as described in Powers, van Schaik and Lehmann (2016), who distinguish the political game from the economic game. Above the political game Ostrom (2009b) posited a constitutional game. To simplify the discussion, the constitutional game is subsumed under the political game. **2.** See Powers, Perret and Currie (2023) for a discussion of how playing the political game in societies of increasing size leads to the emergence of political inequality. **3.** We are grateful to Charles Efferson for emphasizing these points. **4.** For discussions of how differences within countries on cooperative versus conformist preferences relate to differences in political ideology and how these differences may have emerged, see Claessens and others (2020) and Claessens and others (2023). For an account of the diversity across 99 countries in the (lack of) correlation between cultural and economic conservatism, see Lelkes, Malka and Soto (2019). **5.** The framing and discussion in this paragraph draw from Tyler (2023). Deterrence is typically understood to mean punishing violators as a means to enhance compliance, but rewarding a commitment to cooperate could also be effective (Han 2022). **6.** Levi, Sacks and Tyler 2009, p. 354. **7.** Levi, Sacks and Tyler 2009, p. 360), with numerous examples, including several related to tax avoidance and evasion. For further elaborations related to the need to raise fiscal revenue to provide for public goods, see Levi (1988, 1999). For a debate on the relevance of procedural justice, see, for instance, Hagan and Hans (2017). **8.** Reviewed in Callen, Weigel and Yuchtman (2023). **9.** Acemoglu and others 2020. **10.** Levi 2022. **11.** Basu 2018, p. 40.

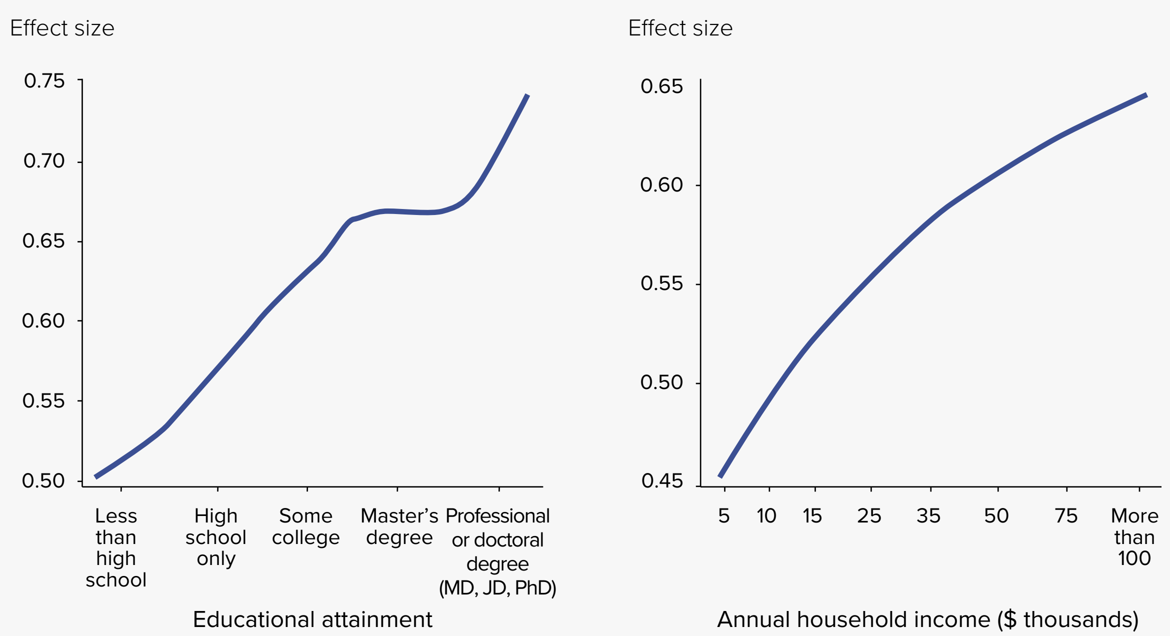
Box 4.8 It seemed such a good idea at the time: The dangers of ignoring heterogeneity when pursuing social tipping

An intervention heralded as very successful in harnessing the potential of social norms to change behaviour was the firm Opower's provision of information about how each customer's energy use compares with that of its neighbour, along with messaging that signalled that conserving energy was a desirable goal.[1] An initial evaluation of 600,000 households that compared the behaviour of households that received the information with that of households that did not found that this nonprice intervention had a substantial effect in encouraging energy conservation.[2] However, when the intervention was scaled to more than 8 million people, the average effect—and its practical importance—turned out to be much lower than in the initial evaluation.[3]

This was not a replication failure, since both evaluations were rigorous and stood up to independent analysis.[4] But the initial evaluation was based on the communities that were the first to adopt the measure. They were already inclined to value energy conservation, had large homes and were relatively prosperous, thus they had many opportunities to conserve energy. The effect of the intervention declined substantially when it was expanded to include people with a broader set of beliefs and much wider range of incomes. Even when studies are carefully conducted, the choice of convenience samples seems to be particularly problematic in behavioural interventions.[5]

Notes
1. Featured, for instance, in Chetty (2015). Thus, the intervention relied on both descriptive and injunctive social norms. See Constantino and others (2022) for a discussion and Bhanot (2021) for the role of injunctive social norms in promoting conservation. **2.** Allcott 2011. An initial smaller expansion beyond the 600,000 also suggested that the effects persisted (Allcott and Rogers 2014). **3.** Allcott 2015. **4.** As reported in Bryan, Tipton and Yeager (2021), which inspires the analysis in this paragraph. **5.** Sometimes simply because there is not enough contextual information, as Vivalt (2020) showed in an analysis of 635 studies of impact evaluations of development interventions, posing challenges to the generalizability of results.

Figure 4.3 Effects of several behavioural phenomena are stronger in more educated and wealthier segments of the population



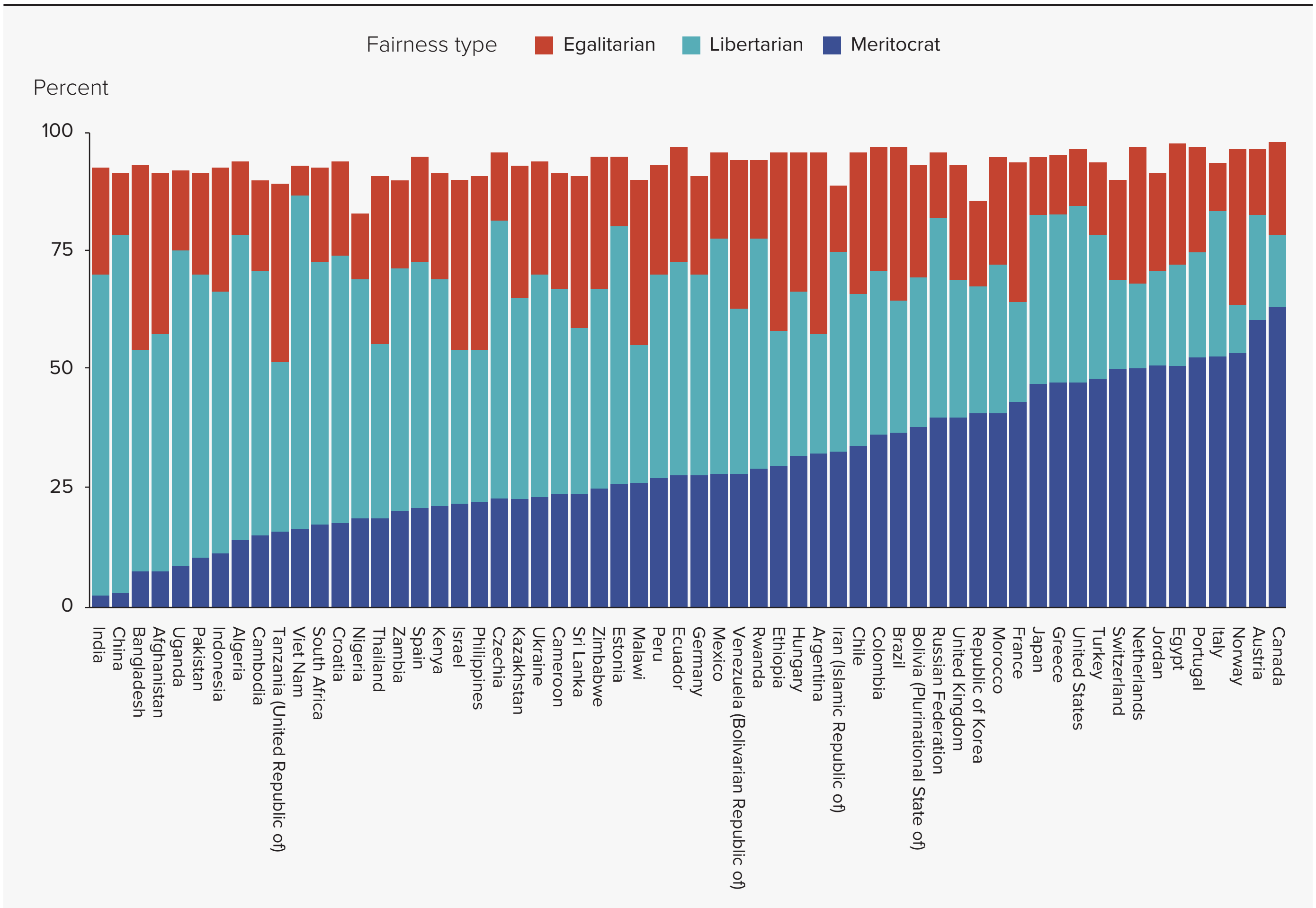
Note: The figures show the effects from seven classical studies in behaviourial science (conformity with a descriptive social norm, impact of argument quality on persuasion, base rate underutilization, conjunction fallacy, underappreciation of the law of large numbers, false consensus and ease of retrieval) according to educational attainment and annual household income in a representative sample of the US population. The vertical axis reports Cohen's *d* effect sizes (the standardized difference between the means of the treatment and control groups; Cohen 1988).
Source: Yeager and others 2019.

on fairness: egalitarians (find all inequalities unfair), meritocratic individuals (accept inequalities due to differences in performance as fair but those due to luck unfair) and libertarians (accept all inequalities as fair). A large share of the population in several high-income countries adhere to the meritocratic view—which is also the foundation for some normative theories of distribution—holding that people should not be considered responsible for outcomes beyond their control (figure 4.4).[126]

But this view is not well represented in many other countries. And even among countries with similar shares of people holding a meritocratic view, there are large differences in the other two categories. For instance, although Norway and the United States have similar shares of meritocratic individuals, the United States has a much larger share of libertarians, and Norway has a much larger share of egalitarians.[127] Moreover, there are differences within societies. In Norway the share of egalitarians is much higher among 15-year-olds from low socioeconomic households than among those from high socioeconomic households,[128] and while most grade 5 children are egalitarians, the meritocratic share increases in higher grades and is largest by grade 13.[129]

So, experience and social context shape people's views of fairness, again pointing to cultural processes in shaping preferences over the lifecycle. Separately from preferences, what people believe about the sources of inequality also matters. A meritocratic individual who believes that inequality is driven by luck, not effort, would find inequality unfair. As with preferences, there is a wide disparity across and within countries on beliefs about the drivers of inequality.[130]

Figure 4.4 There are widespread differences in fairness preferences around the world



Note: Egalitarians find all inequalities unfair, meritocratic individuals accept inequalities due to differences in performance as fair but those due to luck as unfair and libertarians accept all inequalities as fair.
Source: Almas and others 2022.

Beliefs about the extent to which inequality is unfair matter more for attitudes towards redistribution than the actual level of income inequality, so beliefs have a direct bearing on support for different types of redistribution policy.[131]

Thus, recognizing that populations can be heterogeneous in preferences and beliefs and how these differences emerge from cultural processes is crucial to the design of institutions and policies, including, for instance, on tax compliance (spotlight 6.4).[132] In particular, it is essential in assessing what kind of interventions are more likely to trigger social tipping.[133]

Understanding how enhancing agency and redressing polarization within countries can improve collective action across countries

A broader perspective on choice informed by these insights opens new vistas on how to advance cooperation and the provision of global public goods. And it helps show how risks associated with domestic patterns of political polarization may harm collective action across countries.

Interventions to enhance the provision of global public goods that are informed by the recognition that people are products of culture include the consideration of perceptions and aspirations when implementing policies or designing institutions. Different perceptions about how to interpret a noncooperative choice can result in cultural impediments to cooperation: when the choice is perceived as a mistake, it can lead to collective action in future interactions, but when it is perceived as an insult, it can result in the collapse of collective action.[134] Perceptions also matter when people infer the motives of others to make moral judgements,[135] and on perceptions about how (and in what ways) they are interdependent with others.[136] Breakdowns of cooperation in conflict are also shaped by this type of perception. There is evidence that the mental representation of payoffs that potential conflicting parties face rather than the actual payoffs determine not only how people think but also how they behave.[137] These perceptions are malleable to some extent and can be changed in ways that increase the propensity of players to pursue cooperation.[138]

Aspirations also matter because people act on what they believe is possible and desirable, and these beliefs are in part the result of social processes, shaped by narratives widely shared across society or within groups.[139] Aspirations, and the institutions and social norms associated with them, may have emerged as a result of cultural processes that made them suitable for some time in some contexts, but they may no longer be suitable for new contexts.[140] This mismatch acquires a novel dimension as we face the unprecedented challenges of the Anthropocene, in which it is unclear how processes of cultural variation and selection across societies that shaped in part how adaptive institutions and norms emerged would work when confronting planetary-scale challenges: they have to be addressed collectively and at a global scale because the relevant group is all of humanity.[141]

Such a mismatch can be characterized somewhat as reflecting what Karla Hoff and Allison Demeritt called an agency gap, which can be fuelled in part from a divergence between what societies believe is possible or probable and what is objectively possible.[142] To the extent that an agency gap is the result of widely shared beliefs, closing the gap will require more than providing information; it will also require mobilizing insights about the cultural determinants of the formation of shared beliefs.[143]

> “Interventions to enhance the provision of global public goods that are informed by the recognition that people are products of culture include the consideration of perceptions and aspirations when implementing policies or designing institutions

Narrowing the agency gap is constrained by what is objectively possible but is malleable with respect to what people aspire to, which is sometimes articulated through narratives that have “political and psychological agency and can reinforce or challenge existing power relations and trajectories.”[144] This can take the form of what has been called the pursuit of emancipatory transformations,[145] which affirms the importance of enhancing not only people’s welfare but also their empowerment as agents of change.[146]

But it is one thing to recognize that perceptions and aspirations matter, and that broad recommendations such as reframing narratives can help close the agency gap, and quite another to see how to mobilize these insights. Here is where the concreteness of providing global public goods can help, because global public goods correspond to a very specific way of addressing shared challenges when countries face interdependence. Global public goods, by their nature, correspond to non-zero-sum interactions and can thus be mobilized to overcome the psychology of zero-sum beliefs (one party's gain comes at the expense of the other party's losses). To be sure, many interactions across countries are zero sum, but pursuit of the provision of global public goods has the potential to open spaces for countries to interact that are not zero-sum.[147] Emphasizing the provision of global public goods can overcome three of the channels shown to elicit zero-sum beliefs (even in situations where the actual payoffs are not zero-sum): perceptions of threat, real or imagined resource scarcity and inhibited deliberation.[148] Zero-sum beliefs exacerbate conflict,[149] discourage cooperation[150] and suppress effort and economic development.[151]

"While diversity of beliefs and preferences can be harnessed for creativity and innovation, patterns of political polarization represent a major challenge for collective action

The provision of global public goods can mobilize the human ability of shared intentionality: "an understanding that individuals are solving a problem together and are committed to supporting each other."[152] In fact, understanding and sharing intentions have been argued to have evolved to account not only for joint actions and shared beliefs but also for the emergence of coordination on the need for giving reasons to justify those actions and beliefs.[153] Some evidence suggests that the pursuit of self-reliance (seeking to reduce interdependence) in confronting shared problems crowds out cooperation and exacerbates inequalities.[154] People are also able "to see the world from another individual's perspective and, specifically, to understand and formally represent another individual's knowledge states, beliefs and goals"[155] and even their emotional states, which is involved in empathy.[156] This can engender a proclivity for the pursuit of justice that, along with shared intentionally, can be a powerful driver for cooperation to enhance the provision of global public goods.[157]

The flip side is that these powerful potential drivers of cooperation often act within groups.[158] One manifestation of this "groupy" behaviour is the virtually universal higher levels of parochial (meaning within countries) cooperation than of universal cooperation.[159] While diversity of beliefs and preferences is not just a fact but something that can be harnessed for creativity and innovation,[160] patterns of political polarization (where no common factual foundation exists to undertake reasoned discussions and where groups alienate and even dehumanize each other) represent a major challenge for collective action (chapter 6).[161] How political polarization plays out domestically can be a central determinant of providing global public goods such as climate change mitigation and pandemic response.[162]

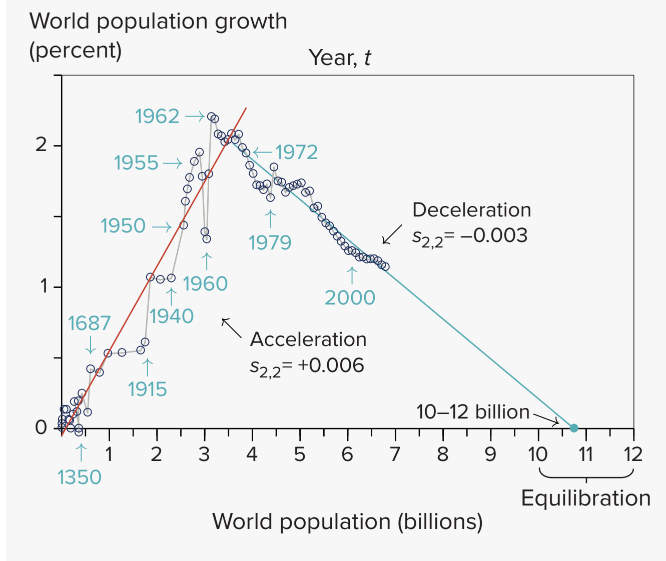
Zero-sum beliefs have been associated with political polarization in some countries.[163] For instance, along with international inequity in vaccine access, domestic attitudes towards vaccines determined the path of the Covid-19 pandemic, including in high-income countries.[164] Even when vaccines were free and plentiful, patterns of trust and political polarization shaped the course of the pandemic in many countries.[165] In some countries people's vaccine status identification is as polarizing as their other group identifications. More polarized attitudes towards vaccine status have been linked to greater resistance to vaccine uptake.[166]

Political polarization matters also because the heterogeneity of preferences and beliefs and their cultural underpinning may prevent the mobilization of social norms towards more cooperative outcomes.[167] As the discussion above illustrates, and as demonstrated theoretically,[168] the distribution of social preferences (towards caring for the environment or aversion to inequality) can activate tipping, have no effect or even produce a backlash, depending on the effects that interventions have in different population groups and the reasons people within those groups adhere to social norms.

When behaviour conforming with a norm interacts with other motives, such as group identities, social tipping may not occur at all.[169] When belonging to a group is linked with salient identities, that can exaggerate the "othering" of other groups and blind members to the realization that everyone has multiple identities with different expressions and relevance at different times—people can lose sight of our shared humanity.[170] This is how in these situations behavioural markers that people rely on to signal group affiliations may prevent social norms from tipping.[171] For example, if not being vaccinated against Covid-19 is a marker of belonging to a group, not only will behaviour not change when some members of the group are vaccinated, their being vaccinated can turn behaviours against vaccination to signal commitment and loyalty to the group.[172] A crucial aspect to consider, particularly in politically polarized contexts, is not only people's private beliefs but also their beliefs about what others think about certain issues, the perceptions they have about threats and how they believe that others think about them and how they will behave.[173]

The next two chapters consider these two challenges (narrowing the agency gap and redressing polarization) in more detail. It may seem that the current context of turbulence around the world is not conducive to meeting either challenge. Yet, as we move deeper into the Anthropocene, we may already be experiencing a major ecological discontinuity[174] characterized by a shift from uncontrolled population growth to controlled fertility (figure 4.5).[175] The transition to low fertility is complex and multifaceted and has recently been analysed from the perspective of cultural evolution (to consider factors that demographers designate as ideation).[176] Determinants of this transition include innovations in medicine and sanitation, empowerment of women, advances in education, shifts in social norms about the size of successful families, increasing attention to population growth, consciousness of planetary challenges and many other potential factors, all of them expressions at least in part of cultural factors.[177] Recognizing that we are in the new planetary context of the Anthropocene and in a novel ecological phase suggests a possibilist agenda: not optimism or pessimism but the possibility of consciously managing the self-inflicted problems that we are confronting on a global scale.[178] The provision of global public goods, which depends only on us, would be a way of acting on that possibilist agenda.

Figure 4.5 The world is undergoing a major transition from accelerating to decelerating population growth



Note: The graph plots per capita growth of the population as a percentage against the population level. The gray line connects data points in different years. The red line fits an ecological model of mutualistic interactions between humans and plants and animals in which the ecological parameter ($s_{2,2}$) is positive, signifying very rapid population growth. The blue line fits a model where the parameter has turned negative, signifying a deceleration in population growth, with a projected equilibrium in population at around 10–12 billion people some time in the next century.
Source: Lehman and others 2021.

SPOTLIGHT 4.1

A technology-centred approach to climate change negotiations

Scott Barrett, *Columbia University and London School of Economics*

The world has been trying to limit climate change for more than 30 years. The first agreement, the United Nations Framework Convention on Climate Change (UNFCCC), was adopted in 1992. Under this framework, parties agree to cooperate to limit concentrations of greenhouse gases in the atmosphere to a level that would avoid "dangerous" climate change. Every country is a party to this agreement. All countries agree that they need to cooperate.

Since then, two other treaties have been adopted. The Kyoto Protocol of 1998 set binding emissions limits for Annex I countries[1] for 2008–2012, but these could not be enforced. The United States declined to participate. Canada participated initially but took no steps to meet its emissions limits and later withdrew in order to avoid a legal obligation to comply. In 2009 countries met in Copenhagen to broaden and deepen the Kyoto Protocol. More countries were expected to be bound by emissions limits, and previously negotiated emissions limits were to be tightened. However, countries were unable to agree on how to do this. Instead, they pivoted. First, they put a number on the UNFCCC's goal of avoiding dangerous climate change, specifying a 2°C target for mean global temperature rise. Second, they asked parties to pledge contributions towards meeting this common goal. Ultimately, this approach was codified in the Paris Agreement of 2015. That treaty strengthened the previous goal: countries are now to hold "the increase in the global average temperature to well below 2°C above preindustrial levels and [to pursue] efforts to limit the temperature increase to 1.5°C." The Paris Agreement also situated pledges in the context of naming and shaming, to encourage greater ambition. Unlike the Kyoto Protocol, all countries participate in the Paris Agreement. However, also unlike the Kyoto Protocol, pledge-making and achievement of pledges are explicitly voluntary.

Where has this approach gotten us? Concentrations of carbon dioxide have risen every year since negotiations began. More carbon dioxide has been emitted since the UNFCCC was adopted than in the previous 250 years. Carbon dioxide emissions reached an all-time high in 2022. The world is not on course to meet the goal countries have said they must meet.

Why? No phenomenon of this complexity has a single explanation, but one stands out, and it is surprisingly simple: countries are caught in a prisoner's dilemma. All countries recognize that they would all be better off if they all reduced their emissions, eventually to net zero. But each country fears that doing this would put its economy at risk. Each might be willing to reduce its emissions substantially if assured that others will reduce their emissions substantially and thus avoid dangerous climate change. However, when contributions cannot be enforced or are voluntary, this assurance eludes every country. The problem is not that every country does nothing; it is that every country does too little.[2]

How to do better? It is instructive to consider some things that have gone well.

Successes

One success is the 99 percent drop in the price of solar photovoltaic cells since 1976. Public and private research and development account for 59 percent of the drop, economies of scale for 22 percent and learning by doing for 7 percent.[3] Research and development were particularly important early in the process; economies of scale became important later. The history of solar research and development can be traced from the first solar cell developed at Bell Labs in the United States in 1954 to further developments spurred by the Space Race; the US response (beginning with President Richard Nixon's Project Independence, a programme to make the United States energy independent by 1980) and Japan's response (especially its Sunshine Program) to the energy crises of the 1970s; research in Australia in the 1980s; and the solar boom in Germany in the 2000s, helped by generous feed-in tariffs.[4] It took the combined efforts of multiple countries to get to today's situation, where costs are so low that, according to the International Energy Agency, solar photovoltaics are "becoming the lowest-cost option for electricity generation in most of the world."[5]

Another success is the decline in the price of lithium-ion batteries. Since commercialization began in 1991, the cost of this form of energy storage has fallen 97 percent. Public and private research and development account for 54 percent of the drop, economies of scale for 30 percent and learning by doing for 2 percent.[6] Most of these activities have been undertaken by the electronics industry (mobile phones, notebook computers, power tools and so on).[7] Advances in this technology, combined with policies to promote demand, have propelled a rapid increase in electric vehicle sales, particularly in China, the European Union and the United States. Globally, lithium-ion battery demand for electric vehicles increased 65 percent between 2021 and 2022.[8] Thanks to this technology, an increasing number of countries and vehicle manufacturers plan to phase out sales of internal combustion engines by 2035.

These developments (and others, such as the falling costs of wind turbines and light-emitting diode bulbs) took place outside the UNFCCC process and arguably had little to do with the climate negotiations. Negotiators have asked countries to reduce their emissions, an approach that falls into the trap of the prisoner's dilemma. Had countries focused more on changing the economics of new technologies, the outcome might have been different. Rather than ask countries to reduce their use of fossil fuels, why not focus on making alternative fuel sources cheaper than fossil fuels? Doing this practically guarantees the global spread of new technologies, reducing emissions everywhere.

Tipping

Solar photovoltaics and battery-powered electric vehicles have spread (so far) without the help of a treaty. They are examples of cascade effects.[9] Once enough research and development have been undertaken to encourage uptake of a technology by one country, that country's production lowers costs for all, mainly through economies of scale, encouraging uptake by other countries. Their uptake in turn lowers costs further, encouraging even more countries to adopt the technology, and so on. Cascades generate positive feedback.

In some cases a single country may be unable to kick-start a cascade, but a critical mass of countries may be able exert the "big push" required for tipping. Network externalities often drive universal adoption. An example is ocean shipping of oil. Historically, most oil pollution in the seas resulted from the way oil was transported. After completing an oil delivery, a tanker would take on ballast water for the return journey. Before picking up its next load, the tanker would release its ballast water, mixed with oil residue, into the sea. This process, repeated over and over, was a major source of ocean pollution. To limit this pollution, the 1954 International Convention for the Prevention of Pollution of the Seas by Oil (OILPOL) required tankers to limit their release of ballast water to an area at least 50 miles from shore. Being a prisoner's dilemma, however, OILPOL like the Kyoto Protocol, was difficult to enforce.

In the 1970s a different approach was tried. The International Convention for the Prevention of Pollution from Ships (MARPOL) required that oil tankers separate the tanks that hold oil from the tanks that hold ballast water, necessitating tanker redesign. MARPOL's approach was more costly than OILPOL but easier to enforce.[10] Once enough ports denied entry to tankers of the old design, more tanker operators met the new standard, and as more tankers met the new standard, more ports allowed entry only to tankers that met the new standard to protect their coastlines. In this situation there was a tipping point for participation that guaranteed universal adherence.[11] Intuitively, the tipping point would need to be at least 50 percent of all shipping, and in practice, this turned out to be the threshold adopted for entry into force of the agreement mandating the new technology standard. According to the International Maritime Organization, "MARPOL has greatly contributed to a significant decrease in pollution from international shipping and applies to 99% of the world's merchant tonnage."[12]

The Kyoto Protocol wisely exempted emissions from international aviation and shipping, believing that these sources ought to be controlled through the International Civil Aviation Organization and the International Maritime Organization. These are essentially standards organizations, the appropriate bodies to negotiate emission reductions in their spheres of influence. By focusing on standards rather than emissions limits (which are, in any event, difficult to assign to individual countries), these organizations can stimulate positive feedback, causing a new standard to tip.

Suppose that the best alternative to bunker fuel turned out to be green ammonia, a fuel produced by combining nitrogen extracted from the air with hydrogen extracted from water, both processes powered by renewable energy. How to proceed? Ammonia would likely cost several times as much as heavy fuel oil. A switch to ammonia would also present technical challenges. It would require new engines, new onboard storage tanks (necessitating new ship designs) and new port facilities: in short, a new technology–fuel standard. A switch to ammonia clearly would not happen one country at a time. Vessel owners would not want to run their ships on ammonia unless a network of refuelling infrastructure were available, just as no country would want to build an ammonia fuel network unless assured that lots of ships would run on ammonia. Lock-in would be a barrier to switching if only one or a small number of countries switched. But as more ports switched to ammonia, more ship owners would want their vessels to run on ammonia, and as more ships ran on ammonia, more ports would want to switch. Tipping of a standard for green ammonia would resemble the experience with MARPOL.

Mission Innovation, a coalition of 22 countries working outside the UNFCCC process, has a plan to reduce emissions in shipping that obeys the logic sketched out above. A first goal is to undertake research and development to identify the best alternative to heavy fuel oil. A second goal is to facilitate the spread of this new technology–fuel standard. Again, suppose that the research and development undertaken in the first stage revealed ammonia to be the "winner." How to achieve the second goal of ensuring global spread of the new standard? Mission Innovation would aim to establish a fleet of at least 200 ships able to run on the new fuel; to build a "global port infrastructure to support vessels operating on zero-emission fuels so that by 2030, 10 large trade ports covering at least three continents supply zero-emission fuels";[13] and, finally, to scale up production of the new fuel so that it supplied at least 5 percent of the total market. It is unlikely that 200 ships, 10 large ports and a 5 percent share of the fuel market would suffice to tip the global market, but at least this initiative sees the logic of needing to change the system. Changing the system is the essence of a strategy that seeks to transform the prisoner's dilemma into a tipping game.[14] Once critical mass gets past the tipping point, such an approach generates positive feedback, leading to a global switch, as we saw with MARPOL.

Trade

The approach pursued by the UNFCCC, focusing on emissions reductions, generates negative feedback. If one country (or group of countries) reduces its emissions unilaterally, comparative advantage in greenhouse gas–intensive sectors shifts to other countries, causing their emissions to increase—a phenomenon known as trade leakage. Also, if the emissions reductions are achieved by lowering fossil fuel use, global prices for these fuels will fall, causing other countries to increase their consumption and, thus, emissions. This negative feedback intensifies the incentive to free ride, which is inherent in the prisoner's dilemma.

Because of these trade-related concerns, domestic climate policies often exclude greenhouse gas–intensive industries from having to reduce their emissions—undermining unilateral efforts to reduce emissions. The European Union is planning to extend its emissions trading arrangements to previously protected industries in order to reduce emissions further. However, due to concerns about leakage, it is planning to replace the exclusions with industry-specific carbon border adjustment mechanisms—a move that may stimulate conflict. As happened previously when the European Union tried to extend its emissions trading system to international aviation, other powerful states may retaliate. Also, developing countries may protest that, by treating domestic production and imports alike in terms of emissions, border tax adjustments violate the principle of common but differentiated responsibilities enshrined in the UNFCCC. Finally, correcting for leakage will not correct for free riding.

However, linking climate agreements to trade cooperation can help prevent free riding—and, in the process, prevent leakage. Trade agreements are easier to enforce than climate agreements. This is because trade is bilateral, whereas emissions reductions are a global public good. If a country violates a trade agreement, the countries harmed by the reduction in trade have a strong—almost built-in—incentive to retaliate. The fear of retaliation motivates countries to abide by their trade agreements. By contrast, if a country emits more than allowed by a climate treaty, other parties to the agreement harm only themselves by reciprocating—and so will not retaliate. Because trade agreements are easier to enforce, linking trade cooperation to cooperation in supplying a global public good may overcome free riding incentives.[15]

The prime example is the Montreal Protocol, which protects the stratospheric ozone layer. The treaty bans trade between parties and nonparties in chlorofluorocarbons (CFCs) and products containing CFCs and works as follows. If no other countries participated in the agreement, no country would want to participate because doing so would mean losing all gains from trade in CFCs in addition to losing out from free riding. However, if all other countries participated, any country would want to participate so long as the gains from trading with the rest of the world exceeded the gains from free riding. Intuitively, every country would have an incentive to participate provided enough others participated. Trade measures thus imply the same kind of tipping point as with MARPOL—a result that makes sense when considering that denying a vessel access to a port is equivalent to a trade ban. Thanks partly to the trade measure, the Montreal Protocol has been remarkably effective, preventing both leakage and free riding.[16]

In Kigali in 2016, the Montreal Protocol was amended to control hydrofluorocarbons (HFCs), a cousin of CFCs. Since HFCs are a powerful greenhouse gas and do not deplete the ozone layer, the Kigali Amendment is a climate treaty negotiated outside the UNFCCC process. Further, because Kigali incorporates the same trade measure as the Montreal Protocol, it represents the first climate treaty to incorporate a trade measure. The Kyoto Protocol was unable to control HFCs, but the Kigali Amendment will very likely do so, especially after its trade measure enters into force in 2029. Also, unlike unilateral policies to control for trade leakage, the Kigali Amendment incorporates a side payment mechanism to cover the incremental costs of developing countries' compliance with the treaty's control measures. The Kigali Amendment promotes cooperation in the same spirit as the UNFCCC, only by a different means.

Way forward

For all its efforts the UNFCCC approach to limiting climate change has so far fallen short of achieving its goals. Fortunately, the Paris Agreement can be complemented by other agreements aimed at reducing emissions in particular sectors. Indeed, this has already happened. The Kigali Amendment was adopted less than a year after the Paris Agreement. Other developments, including the falling prices of solar photovoltaics and lithium-ion batteries and the aspirations of Mission Innovation, hint that more progress is possible. The key feature shared by all these efforts is their focus on interventions (technical standards, research and development, and trade measures) that can transform systems by achieving critical mass.[17] Surely, many more such possibilities remain to be discovered.

NOTES

1. Annex I countries include the industrialized countries that were members of the Organisation for Economic Co-operation and Development in 1992, plus countries with economies in transition, including the Russian Federation, the Baltic states and several Central and Eastern European states.
2. See Barrett and Dannenberg (2016) for a laboratory experiment of the Paris Agreement showing that the process of "pledge and review" changes what players say (meaning their collective target and individual pledges) but not what they do (meaning their actual contributions to achieving their pledges and target).
3. Kavlak, McNerney and Trancik 2018.
4. Nemet 2019.
5. https://www.iea.org/reports/solar-pv.

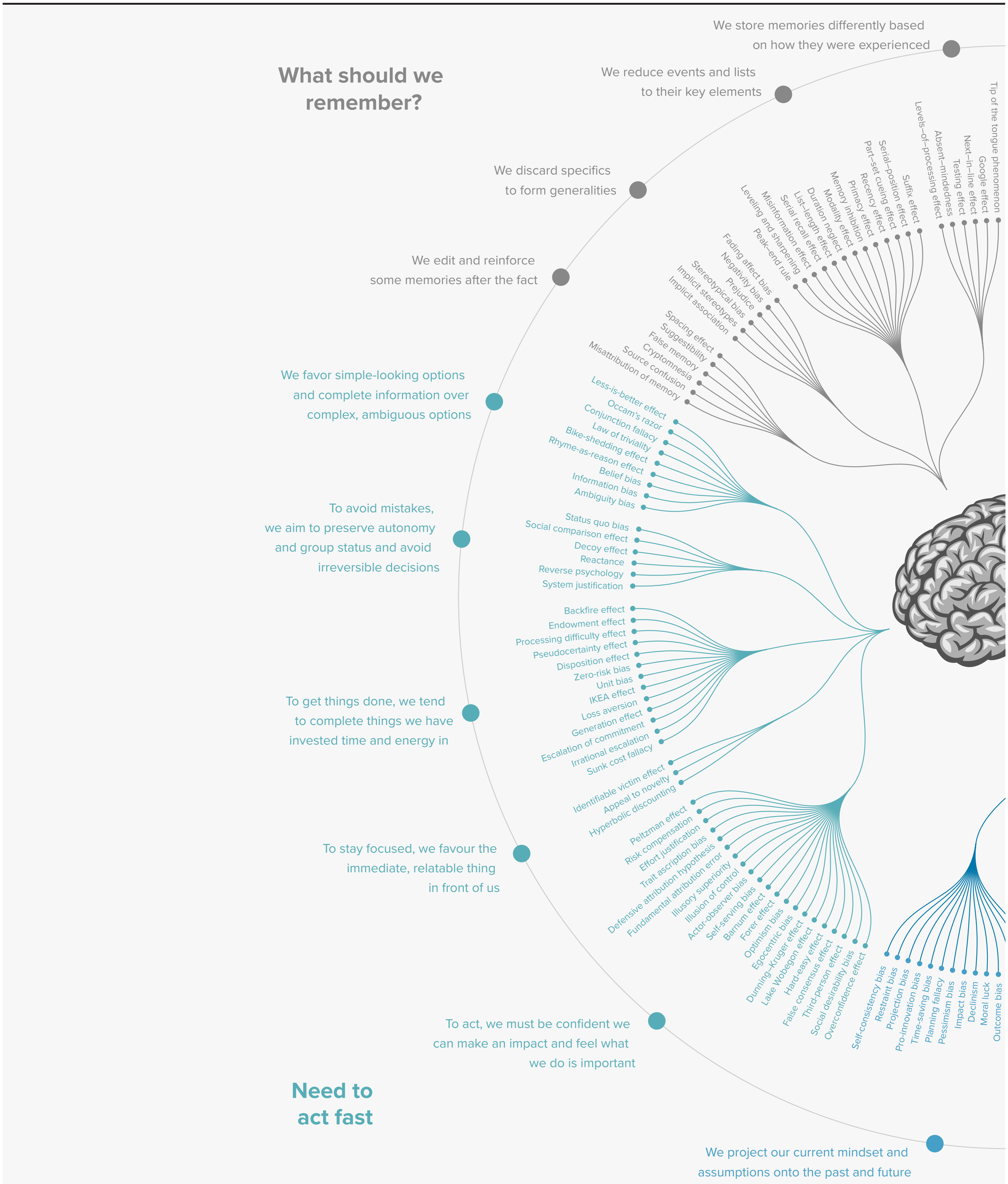
6. Ziegler, Song and Trancik 2021.
7. Dugoua and Dumas 2023.
8. IEA 2023b.
9. Dixit 2003; Heal and Kunreuther 2010.
10. Mitchell 1994.
11. Barrett 2003a.
12. https://www.imo.org/en/ourwork/environment/pages/pollution-prevention.aspx.
13. https://explore.mission-innovation.net/mission/zero-emissions-shipping/.
14. Of the world's 10 biggest ports by volume, 7 are in China. China's participation in a strategy to change shipping is essential.
15. Barrett and Dannenberg 2022.
16. Barrett 2003a.
17. Barrett 2016.

Using insights from behavioural science: Watch out!

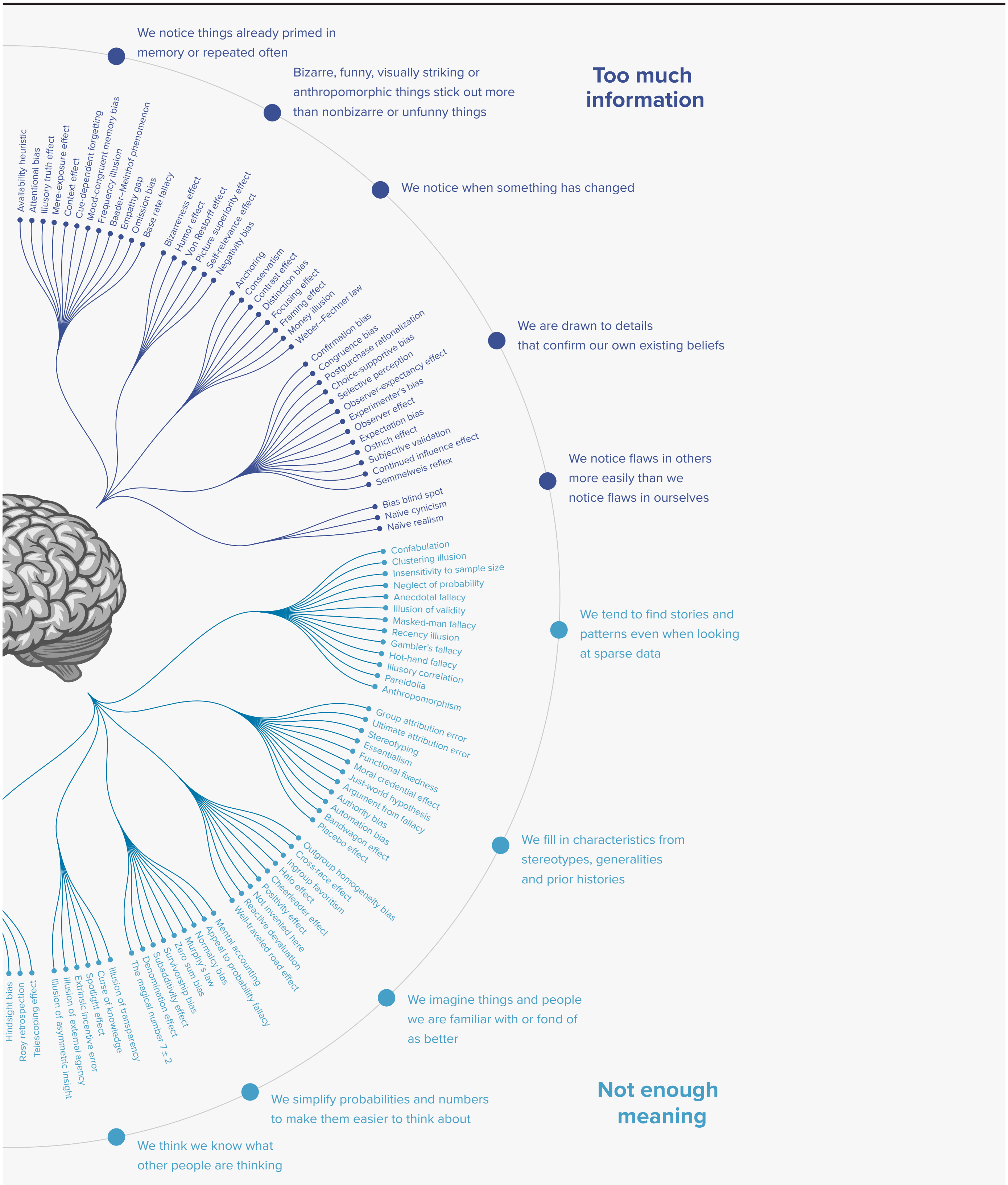
Caution in the use of behavioural insights is associated with challenges in replicating some findings.[1] Such concerns follow on the crisis of replicability that affected some psychology research in the 2010s, when several high-profile findings that garnered media and policy attention failed to be replicated in subsequent attempts.[2] In particular, studies over the past 20 years based on experiments failed to replicate at higher rates than nonexperimental studies.[3] A recent review found that only two-thirds of social science experiments reported in two top journals were replicated, and the average effect size was about half of that reported in the original studies.[4] One of the signature nudge interventions—making organ donations the default—failed to replicate and could even be counterproductive.[5] Several efforts have documented not only failures to replicate but also potential scientific misconduct.[6] Learning from these challenges, there is awareness that behavioural science will likely evolve to deliver more robust findings, be more cautious on claims based on statistical inference and address issues of more direct policy relevance.[7]

But insights from behavioural science confront another challenge. Given the proliferation of cognitive biases identified in the literature, even if findings are robust, it is challenging for interventions to address them all or to ensure that addressing one bias does not exacerbate some other bias. The cognitive bias codex (figure S4.2.1) may appear as little more than "a trove of plausible ad hoc modifications to rational choice models."[8] This challenge has motivated efforts to find a set of restricted causal mechanisms that could account for a large set of cognitive biases.[9] A better understanding of cognitive processes (and the limits of human cognition)[10] has inspired hypotheses about mechanisms that could account for several cognitive biases.[11] These include cognitive uncertainty[12] or an understanding of how people estimate probabilities through the selective recall of memories.[13] But even theories that held together different biases that have received strong empirical support[14] sometimes fail to be replicated.[15]

Figure S4.2.1 **The identification of 180 cognitive biases makes it hard to derive insights about how to change behaviour to enhance collective action**



Source: "The Cognitive Bias Codex - 180+ biases," designed by John Manoogian III based on categories and descriptions by Buster Benson, licensed with CC-by-SA-4.0 (https://commons.wikimedia.org/wiki/File:Cognitive_bias_codex_en.svg).


Too much information
We notice things already primed in memory or repeated often
Availability heuristic
Attentional bias
Illusory truth effect
Mere-exposure effect
Context effect
Cue-dependent forgetting
Mood-congruent memory bias
Frequency illusion
Baader–Meinhof phenomenon
Empathy gap
Omission bias
Base rate fallacy
Bizarre, funny, visually striking or anthropomorphic things stick out more than nonbizarre or unfunny things
Bizarreness effect
Humor effect
Von Restorff effect
Picture superiority effect
Self-relevance effect
Negativity bias
We notice when something has changed
Anchoring
Conservatism
Contrast effect
Distinction bias
Focusing effect
Framing effect
Money illusion
Weber–Fechner law
We are drawn to details that confirm our own existing beliefs
Confirmation bias
Congruence bias
Postpurchase rationalization
Choice-supportive bias
Selective perception
Observer-expectancy effect
Experimenter's bias
Observer effect
Expectation bias
Ostrich effect
Subjective validation
Continued influence effect
Semmelweis reflex
We notice flaws in others more easily than we notice flaws in ourselves
Bias blind spot
Naïve cynicism
Naïve realism
Not enough meaning
We tend to find stories and patterns even when looking at sparse data
Confabulation
Clustering illusion
Insensitivity to sample size
Neglect of probability
Anecdotal fallacy
Illusion of validity
Masked-man fallacy
Recency illusion
Gambler's fallacy
Hot-hand fallacy
Illusory correlation
Pareidolia
Anthropomorphism
We fill in characteristics from stereotypes, generalities and prior histories
Group attribution error
Ultimate attribution error
Stereotyping
Essentialism
Functional fixedness
Moral credential effect
Just-world hypothesis
Argument from fallacy
Authority bias
Automation bias
Bandwagon effect
Placebo effect
We imagine things and people we are familiar with or fond of as better
Outgroup homogeneity bias
Cross-race effect
Ingroup favoritism
Halo effect
Cheerleader effect
Positivity effect
Not invented here
Reactive devaluation
Well-traveled road effect
We simplify probabilities and numbers to make them easier to think about
Mental accounting
Appeal to probability fallacy
Normalcy bias
Murphy's law
Zero sum bias
Survivorship bias
Subadditivity effect
Denomination effect
The magical number 7 ± 2
We think we know what other people are thinking
Illusion of transparency
Curse of knowledge
Spotlight effect
Extrinsic incentive error
Illusion of external agency
Illusion of asymmetric insight
Hindsight bias
Rosy retrospection
Telescoping effect

NOTES

1. Ijzerman and others 2020.
2. An early expression of concern was Simmons, Nelson and Simonsohn (2011). For reviews, see Nelson, Simmons and Simonsohn (2018) and Nosek and others (2022).
3. Youyou, Yang and Uzzi 2023.
4. Camerer and others 2016;' Camerer and others 2018; Yarkoni 2022. A recent review of multiple studies recommending interventions to increase happiness reveals very little support for several widely recommended policies (Folk and Dunn 2023).
5. Etheredge 2021.
6. Websites include http://datacolada.org/ and http://bps.stanford.edu/. The challenge has been widely reported in the media (see, for instance, Schelber 2023).
7. Hallsworth (2023) proposes a manifesto on how behavioural science needs to evolve to strengthen its empirical foundations and policy relevance. Duckworth and Milkman (2022) propose improvements in the conduct of meta-studies to enhance the validity of findings. Clark, Connor and Isch (2023) show that studies that fail to replicate are associated with declines in citations, thus the proposal by Zwaan and others (2018) that replication should become mainstream could enhance the validity and robustness of results. Box-Steffensmeier and others (2022) argue for the importance of cross-disciplinary learning. van Roekel and others (2023) propose improvements in the design of nudges so that they preserve autonomy, given that a strand of criticism of nudges is that they are paternalistic and curb people's ability to reason when making choices (these criticisms were reviewed in UNDP 2022a). Korbmacher and others (2023) document a series of positive structural, procedural and community changes in which the replicability crisis is turning to a credibility revolution.
8. Davis 2023, p. 476.
9. For instance, Stango and Zinman (2022) reduce 20 biases to 4 behavioural common factors. Goeree and Louis (2021) developed a model to integrate several findings from behavioural game theory.
10. Lieder and Griffiths 2020.
11. As explored, for instance, in behavioural game theory (Camerer, Ho and Chong 2015). Dube, MacArthur and Shah (2023) show how cognitive demands on policing can undermine officer decisionmaking. Enke (2020b) shows how people confronting complex decisions focus on what they see. Bordalo, Gennaioli and Shleifer (2022) draw the implication of the outsized influence of salient information on decisionmaking.
12. Enke and Graeber 2023.
13. Bordalo and others 2022.
14. Dean and Ortoleva 2019.
15. Chapman and others 2023.

SPOTLIGHT 4.3

Cultural evolution and development policy

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All approaches to policy design and economic development require assumptions about human nature, though these are often implicit, typically smuggled in without notice.[1] By attending closely to human evolutionary biology, the new interdisciplinary field of Cultural Evolution (CE) offers fresh insights into human behaviour, cultural differences, psychological changes, institutional effectiveness, technological innovation and economic outcomes.[2] Because of its historical and comparative approach, CE has explored a broad range of social phenomena, including religions,[3] witchcraft beliefs,[4] kinship systems,[5] collective rituals[6] and gender inequalities,[7] and considered their links to various economic, political, demographic, social and health outcomes.

Drawing on CE research, I shine a spotlight on the nature of human cooperation, the coevolution of institutions and cultural psychologies and the impact of shocks on people's psychology. Like economics, CE is built on a large body of formal mathematical models that act as mental prostheses for thinking about the learning and decisionmaking processes that underpin behaviour and how these give rise to sociological phenomena such as social norms, institutions, large-scale cooperation and ethnic groups.[8] However, unlike economics, CE is founded on evolutionarily plausible and empirically grounded assumptions about how humans actually learn and adapt rather than on notions of rational choice rooted in free-floating philosophical assertions.

New evolutionary foundations

Taking an evolutionary perspective, CE theorists begin by asking a set of deep questions about our species. What kind of animal are we? What is the secret of our species' success? How are we different from other animals?

Decades of research point to a set of answers, but they are not the ones many people assume. Much of our nature is nurture, but nurture from selected members of our communities and peers as well as our families. We are a cultural species that has evolved genetically to rapidly, efficiently and often unconsciously acquire beliefs, ideas, heuristics, perceptions, motivations and much more from those around us.[9] Our life histories—gestation, infancy, childhood and so on—have evolved to permit us to adaptively calibrate aspects of our psychology, including our attention, preferences and perceptions, to the worlds we confront. Indeed, a growing body of research shows how, beginning in our first year of life, humans seem exquisitely well attuned to selectively attending to and learning from the people most likely to possess useful or adaptive information, often relying on cues of competence, skill, success and prestige to target our learning efforts.[10] We also assiduously attend to certain domains, such as those related to food, sex, reputation, animals, plants and social groups, and process these different domains in distinct ways.[11]

Over generations these selective learning processes and content filters generate, often without anyone realizing it, increasingly adaptive cultural packages of tools, know-how, beliefs, motivations and more. We have depended on the useful products of such cultural processes for so long that we have genetically evolved to rely on what we acquire from other people—culture—over our own experience or instincts. Many cultural products and practices, including our institutions, may appear "rational" but instead actually emerged through cultural evolution, often without anyone evaluating the costs and benefits of alternative options or even understanding how and why particular practices, institutions or heuristics emerged. Of course, our evolved learning abilities—like our instinctual tastes for fat, salt and sugar—can produce extravagant maladaptations, which include deeply held commitments and beliefs that deviate wildly from reality. But that is the cost of being a cultural species.

In applying this approach to understanding human cooperation, researchers have focused on how cultural learning, operating within groups and over time, gives rise to social norms. Social norms are widely shared behavioural patterns typically sustained by reputational effects, punishment, signalling or other mechanisms that can incentivize individually costly behaviours or practices. Norms emerge spontaneously once people can learn both focal behaviours (such as sharing food) and the standards for judging others (for example, nonsharers are "bad"). Around the world both ethnography and experiments suggest that the social norms spread by cultural evolution may explain many widespread patterns of cooperative behaviour, from food sharing among hunter-gatherers to voluntary blood donations in modern urban centres.[12] Because humans have had to navigate social landscapes shaped by social norms for eons, we have genetically evolved a norm psychology that primes us to readily learn social rules, internalize these rules as behavioural heuristics or motivational preferences and react negatively to norm violators. Norm internalization may be a key aspect of what makes us behave fairly and altruistically in normative contexts.[13]

Behavioural economists stumbled upon these internalized normative motivations when they began conducting economic experiments such as the prisoner's dilemma or ultimatum game. And, of course, anthropologists established decades ago that game-related behaviours, driven by particular preferences or heuristics, are culturally transmitted[14] and vary predictably across human societies in ways patterned by cultural evolution.[15]

Rather than assuming institutions as if they descended from on high or were hammered out by rational actors in some Lockean social contract,[16] CE offers a natural way to theorize and understand the origins of institutions from the ground up. It proposes that informal institutions represent interlocking sets of social norms. Marriage institutions, for example, are formed by norms that specify such things as who pays whom to form the union (such as brideprice or dowry), where the couple lives after marriage (for example, with the groom's family) and how many spouses one can have at the same time (polygyny versus monogamy).[17] Formal institutions emerge when some of the norms or rules in a more comprehensive package are written down. This is part of the reason that formal institutions cannot be readily replicated by simply agreeing to follow the written elements of the institutions—many of the key constituents of any real institution are not written down.

The oldest institution

Crucially, there is much more to human nature than simply our cultural learning abilities and our norm psychology. To see this, consider the oldest and most fundamental of human institutions—the family, or what anthropologists call kinship systems. These packages of social norms variously harness, extend or suppress aspects of our innate kin psychology.[18] Like other species, our kin psychology includes instincts for helping close relatives, avoiding inbreeding (such as sex with siblings) and sustaining pair-bonds. Cultural evolution exploits these aspects of our evolved psychology to build various social organizations or networks, including clans, kindreds, extended families and lineages, using norms that specify acceptable marriage partners (incest taboos), inheritance rules (of resources, leadership positions and identity), communal ownership, postmarital residence and shared culpability for crimes (termed corporate responsibility). By variously strengthening, weakening or modifying various kin bonds, cultural evolution can forge either corporate collectives capable of high levels of cooperation or sprawling social networks that offer people refuge when disasters strike.[19]

Historically, after the origins of food production more than 10,000 years ago, competition among groups with varying social norms drove changes in kin-based institutions that fostered intensive, tightly knit cooperative networks and larger scale cooperation. The shifts to polygynous clans and lineages during this period, particularly those based on patrilineal lines of descent, were so profound that they can be seen in the genome in the massive reduction in Y chromosome diversity after the emergence of agriculture but before the rise of states.[20]

To illustrate the power of kinship, consider a specific custom, the social norms specifying that adults can have only one spouse at a time—normative monogamy. Most societies throughout human history—85 percent by some estimates—have permitted high-status men to take multiple wives.[21] Even in otherwise highly egalitarian hunter-gatherer societies, the most prestigious hunters, warriors, storytellers and shamans often took three to five wives. To explore why monogamous marriage emerged and spread in societies where massive wealth differences among men persist, cultural evolutionists have pointed out that polygynous marriage generates societal-level costs: it tends to create a large pool of low-status men who have little opportunity or access to the marriage and mating market. Faced with ending up as evolutionary zeroes, unless they can catapult themselves up a steep status hierarchy, men become more likely to take risks that result in crime, raiding, violence and rape.

Monogamous marriage, by contrast, creates a more equitable distribution of wives and children across the male status hierarchy, effectively draining the pool of low-status bachelors and, instead, enlisting them in an army of husbands and fathers, giving them a stake in the future. Interestingly, while in monogamous societies both marriage and fatherhood are associated with declines in men's testosterone levels, the same is not true of men in polygynous societies. Indeed, several lines of evidence suggest that, at least under some conditions, reducing polygynous marriage influences crime, domestic violence and gender inequality. The adoption of monogamous marriage is a fascinating case because it runs directly contrary to the interests of elite and powerful men, who usually have a disproportionate influence on laws and policy.[22]

Across traditional kinship practices, including norms related to polygyny, cousin marriage, inheritance and residence, ample evidence demonstrates the impact of kin-based institutions on important outcomes, including economic prosperity, trust, civic participation, innovation, corruption, child health, gender inequality, education investments and the effectiveness of democratic institutions. Duman Bahrami-Rad and colleagues, for example, show that measures of traditional kinship intensity predict global measures of economic prosperity based on nighttime satellite luminosity.[23] Indeed, focusing only within countries, their analyses show that crossing from an ethnic group with high kinship intensity (polygynous clans) into an ethnic group with low kinship intensity (monogamous nuclear families) corresponds to a substantial rise in luminosity/prosperity.

Of course, while kin-based institutions are notoriously resilient, policies can and have altered key social norms and changed how these institutions operate.[24] For example, using historical data for the United States, Ghosh, Hwang and Squires (2023) show how state laws prohibiting cousin marriage resulted in faster urbanization and more rapid income growth.[25] Similarly, illustrating potential pitfalls, a study of India shows how legal changes in 2005 that gave women equal inheritance rights caused a rise in arranged marriages to patrilineal cousins, which in turn resulted in a decline in both gender equality and women entering the labour market. In both cases the social and economic effects were inadvertent, though probably desirable to policymakers in the former case but undesirable in the latter.[26]

The study of kin-based institutions illustrates two important features of cultural evolution. First, understanding these institutions offers a clear example of why it is crucial to theorize about human nature—without such a framework it is difficult to fathom why people care so much about close relatives, why testosterone responds to the local mating environment (monogamy or polygyny) and why people internalize social norms (where do fairness preferences come from?). Concepts such as norms and institutions are not assumed into existence but instead are understood as arising through clearly defined evolutionary processes.

Second, cultural evolution shows how institutions can emerge without conscious social contracts or rational choice but still operate in functional ways, serving the interests of society or particular subgroups.[27] Indeed, like the proverbial fish that does not know it lives in water, most people do not understand how our institutions work. Normative monogamy offers an example of an institution that, operating over generations, dramatically influences societal social dynamics and important outcomes. Yet most people, including policymakers and legal scholars, do not recognize why or how it works or even realize that it "does" anything.[28] Here, cultural evolution offers a foundational understanding of kin-based institutions that highlights an array of potential policy levers as well as potential pitfalls that typically go unrecognized.

Markets, religion and intergroup competition

To understand the evolution of larger scale cooperation above the kin group, cultural evolution offers a multilevel perspective—supported by an armoury of formal models[29]—that analyses the impact of intergroup competition and conflict. The approach reveals how intense cooperation among smaller groups within societies, such as families, villages and ethnic groups, can undermine cooperation at higher levels such as in kingdoms, states and empires.[30] When smaller groups within societies command too much solidarity and loyalty, it gets harder to motivate people to pay taxes, fight wars, build canals and so on. This multilevel evolutionary perspective permits researchers to spot the fault lines where morality breaks down, cooperation plummets and conflict begins. This approach also underlines the challenges to achieving global-level cooperation.[31]

Beyond kin-based institutions, the social norms, beliefs and motivations that drive large-scale cooperation are influenced by many factors, including market institutions, religions and domesticated forms of intergroup competition. Focusing on markets, several lines of evidence indicate that greater market integration is associated with greater impersonal prosociality, including greater trust, fairness and cooperation with anonymous others. The idea, which traces back to the Enlightenment, proposes that by engaging with markets, people acquire and internalize norms that foster reciprocal and mutually beneficial transactions with strangers.[32] For example, using a global database of folktales, Enke shows that greater market integration is associated with greater moral universalism and trust in strangers, as captured by people's traditional stories.[33] Similarly, behavioural experiments in Ethiopia show that communities of Bale Oromo that are located closer to markets are more cooperative with anonymous others and consequently are better able to sustainably manage local forests.[34]

Cultural evolutionists have long argued that intergroup competition, operating over thousands of years, has shaped religions and rituals in ways that expand the sphere of cooperation and exchange, fostering the scaling up of human societies. Empirically, cultural evolution has explored the impact of different religions on family organization (kinship intensity), aspects of moral psychology, cooperation among strangers and economic outcomes.[35] For example, using both economic experiments and surveys, several studies show how stronger beliefs in powerful moralizing gods or universal karmic forces foster greater cooperation and fairness with anonymous others. This finding is particularly striking on realizing that a belief in such deities is not found in most human societies and emerged only during the last few thousand years. Similarly, global variation in people's commitment to world religions is correlated with key economic preferences, including generalized trust, altruism towards strangers and reciprocity with anonymous others.[36] Such psychological patterns converge with older research linking economic growth to religious beliefs about the afterlife.[37]

Finally, cultural evolution has also domesticated forms of intergroup competition within societies that galvanize higher trust and cooperation among strangers against the corrosive effects of self-interest, nepotism and cronyism. Cultural evolutionary theory suggests that competition among groups demands cooperation, resulting in the spread of motivations and practices that increase cooperation. Testing this idea, Francois and colleagues exploited a natural experiment in which changes in banking regulations increased competition among firms, mostly during the 1970s and 1980s.[38] They show that this policy change increased competition, which in turn drove trust gradually upward over many years. Supplementing this, the study used panel data for Germany to show that trust rose when individuals moved to a more competitive sector of the economy and declined when they moved to a less competitive sector. In the lab the team confirmed that increasing intergroup competition increased both people's willingness to cooperate with strangers and their inclination to state that "most people can be trusted" on the generalized trust question.

Thinking, feeling and perceiving

Because CE proposes that human brains evolved genetically in worlds structured by changing institutions, languages and technologies, the field was primed to recognize, study and eventually explain psychological differences across populations. Psychologists and economists typically assume that human minds are like digital computers—that the information-processing hardware is all fixed. However, it is increasingly clear that human brains evolved to ontogenetically adapt their information processing to the challenges that individuals face while growing up and, to a lesser degree, over the course of their lives. For example, recent work exploring the role of paddy rice agriculture, irrigation, ploughs, pastoralism, kin-based institutions and urbanization has sought to explain the variation around the world in moral psychology, conformity, holistic thinking, ingroup loyalty, normative tightness, nepotism, honour motivations, individualism, personality structure and impersonal prosociality (trust in strangers).[39] It is not just that different institutions create different incentives—as many economists have assumed—it is that people who grow up in different places come to process information differently. That is, they perceive, reason, feel and think differently.[40]

Such psychological variation implies that identical policies, laws and institutions will often have different outcomes due to underlying psychological differences. For example, in a field experiment conducted in Ghana, India and the Philippines, researchers randomly assigned workers to be paid using an individual piece rate, where they were paid according to how much they alone produced; a group piece rate, where they were paid according to the average productivity of their small working group; or a daily wage, where they were paid independent of their productivity.

Strikingly, the most profitable policy depended on the population. In the most individualistic country in this trio, India, both the individual and group piece rates generated roughly a 20 percent increase in average performance, which is about what would be found in the United States using an individual piece rate. In the Philippines the performance-enhancing effects of paying an individual piece rate were only about 10 percent (half that of India), but the effect of the group piece rate was not any better than simply paying a daily wage. In Ghana neither piece rate scheme generated any improvement in performance over the simple daily wage. The performance-enhancing policy depends on the cultural psychology that people bring into the labour market.

Indeed, using data from 11,702 firms around the world, analyses show that firms in more individualistic populations are more likely to rely on performance pay. Here, what might look like a failure to adopt the most effective management practices (that is, not using performance pay) might instead represent an appropriate calibration to the local cultural psychology. Such results, and numerous others, suggest that many insights from standard economic models are most applicable to societies with particular cultural psychologies.[41] CE offers an overarching framework for thinking about human behaviour, psychology and decisionmaking that seats individuals within their historical and cultural contexts, effectively organizing and explaining the potpourri of (mostly) culturally evolved heuristics and biases identified by behavioural scientists.

Wars, hurricanes, earthquakes, epidemics and other shocks

Recognizing the central importance of shocks ranging from volcanic eruptions and plagues to wars and hurricanes, cultural evolutionists have examined how such events affect people's psychology and shape cultural change. A growing body of research demonstrates that shocks can powerfully affect people's sociality—bonding them more closely to their communities while also tightening their commitments to social norms. Using a variety of natural experiments, surveys, economic games, psychological measures (from text analysis) and naturalistic observations, researchers have shown that shocks strengthen cooperation within local groups, tighten social norms of all kinds, increase people's religious commitments and, perhaps oddly, shift them away from a universalistic morality. In Sierra Leone, for example, those most affected by the civil war, which had ended a decade prior, were more cooperative with their local ingroups and more religious but less inclined to cooperate with distant strangers.[42]

This is important because climate shocks shape morality and cooperation in ways that seem poorly suited to achieving the kind of global cooperation necessary to tackle problems such as climate change. To foster such large-scale cooperation, cultural evolution suggests there may be ways to scale up some of the processes that have galvanized cooperation over the past 10 millennia. First, intergroup competition, whether among firms or countries, can be harnessed in more benign ways to increase cooperation.[43] Second, our evolved psychology of interdependence and ethnic psychologies can be tapped to create a pan-human sense of connection and a global identity that expands the moral sphere.[44] Third, given our powerful inclination to copy the most successful and determined prestigious nations, groups and individuals can foster greater cooperation by leading with costly prosocial acts that demonstrate the commitments they are seeking from others, not by waiting to see if others will cooperate.[45]

To conclude, equipped with a theoretically rich conception of human nature, the rapidly growing field of CE offers many new perspectives and approaches on how to think about and study cultural change, economic development and social policy.

NOTES

1. Wilson 2019.
2. Boyd 2017; Henrich 2016, 2020; Laland 2017.
3. Gervais and others 2016; Watts and others 2015.
4. Carvalho and others 2023.
5. Enke 2019; Schulz and others 2019.
6. Xygalatas and others 2013.
7. Galor, Özak and Sarid 2018.
8. Boyd and Richerson 1985; Cavalli-Sforza and Feldman 1981.
9. Tomasello 1999.
10. Chudek and others 2013.
11. Henrich 2016.
12. Boyd and Richerson 2022.
13. Henrich and Muthukrishna 2021; House 2018; House and others 2020.
14. Baimel and others 2021; Cason and Mui 1998; Rand 2016; Salali, Juda and Henrich 2015.
15. Ensminger and Henrich 2014; Falk and others 2018; Henrich 2000; Henrich and others 2005; Lang and others 2019.
16. Acemoglu and Robinson 2012.
17. Henrich, Boyd and Richerson 2012.
18. McNamara and Henrich 2017.
19. Henrich 2020.
20. Zeng, Aw and Feldman 2018.
21. Henrich, Boyd and Richerson 2012.
22. Chaudhary and others 2015; Henrich 2020; Henrich, Boyd and Richerson 2012; Hudson and others 2023.
23. Akbari, Bahrami-Rad and Kimbrough 2019; Alesina and Giuliano 2013, 2015; Bahrami-Rad 2021; Bahrami-Rad and others 2022; Lowes 2022; Moscona, Nunn and Robinson 2017, 2020; Schulz 2022; Schulz and others 2019.
24. Bau 2021.
25. Ghosh, Hwang and Squires 2023.
26. Bahrami-Rad 2021.
27. Henrich 2020; Turchin 2009.
28. Henrich 2020; Henrich, Boyd and Richerson 2012; Hudson and others 2023.
29. Boyd and Richerson 1990, 2002, 2011; Turchin 2015.
30. Turchin 2013; Wilson and others 2023.
31. Desmet, Ortuño-Ortín and Wacziarg 2017; Handley and Mathew 2020; White, Muthukrishna and Norenzayan 2021; Wilson and others 2023.
32. Hirschman 1982.
33. Enke 2023a.
34. Baldassarri 2020; Enke 2023a; Henrich and others 2005; Henrich and others 2010; Kosfeld and Rustagi 2015; Rustagi, Engel and Kosfeld 2010; Voors and others 2012; White, Muthukrishna and Norenzayan 2021.
35. Schulz and others 2019.
36. Atkinson and Bourrat 2011; Caicedo, Dohmen and Pondorfer 2023; Gervais and others 2016; Lang and others 2019; Purzycki and others 2016; White and others 2019.
37. Barro and McCleary 2003.
38. Francois, Fujiwara and van Ypersele 2018.
39. Atari and others 2017; Buggle 2017; Enke 2019; Falk and others 2018; Gelfand and others 2011; Lukaszewski and others 2017; Schulz and others 2019; Talhelm 2020.
40. Apicella, Norenzayan and Henrich 2020; Henrich and others 2022.
41. Bandiera, Barankay and Rasul 2011; Medvedev and others 2024.
42. Bauer and others 2014; Bauer and others 2016; Gelfand and others 2011; Henrich and others 2019; Rao and others 2011; Sinding Bentzen 2019; Winkler 2021.
43. Francois, Fujiwara and van Ypersele 2018; Wilson and others 2023.
44. Handley and Mathew 2020; Moya 2016; White, Muthukrishna and Norenzayan 2021.
45. Chudek and others 2012; Henrich 2009; Henrich and Gil-White 2001; Henrich, Chudek and Boyd 2015; Kraft-Todd and others 2018.

SPOTLIGHT 4.4

The role of trust and norms in tax compliance in Africa

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The tax system is a key formal institution with a unique role in the social contract between people and governments, as an essential source of revenue for governments to fund public services and programmes that benefit the community. It also provides an important entry point to explore how people engage with institutions across different contexts and the role of culture, beliefs, norms and perceptions in determining issues such as compliance with policies. This spotlight synthesizes findings from recent research on determinants of tax compliance and evasion, with a focus on developing countries.

Mobilizing domestic revenue is crucial for developing countries to achieve the Sustainable Development Goals. However, tax evasion is a major challenge in many countries. Research and policymakers have generally focused on law-based compliance and the role of formal rules and institutions such as audits and penalties to reduce tax evasion—often referred to as enforced compliance.[1] More recently, voluntary compliance[2]—informal norms and beliefs motivating taxpayers' compliance, particularly trust and norms—have received more attention.[3] Voluntary compliance is likely to be particularly important in countries where enforcement capacity is weak.[4] This spotlight starts with a short theoretical background on how a deeper understanding of trust and norms can enhance our understanding of voluntary compliance. It then examines how these factors vary across different contexts, taxpayers and tax bases and how these variations affect voluntary compliance. The last section discusses policy implications.

Deeper knowledge of trust and norms can enhance our understanding of tax compliance

Trust (a person's belief that another person or institution will act consistently with their expectations of positive behaviour)[5] fosters social and economic progress.[6] Theoretical work emphasizes the importance of trust in the government and in the tax administration, as well as for voluntary tax compliance. Kirchler, Hoelzl and Wahl (2008) develop a theoretical framework in which trust in tax authorities and the power of authorities are the main determinants of tax compliance, where trust fosters voluntary compliance and power leads to enforced compliance. When taxpayers trust the tax administration and perceive it as benevolent and working beneficially for the common good, taxpayers may feel obliged to adhere to decisions, policies and rules, even in the absence of powerful administration and enforcement.[7] Prichard and others (2019) develop a conceptual framework for tax reform and compliance that highlights four key drivers of trust: fairness (the tax system is fairly designed and administered), equity (burdens are equitably distributed and everyone pays their share), reciprocity (tax revenue is used for public goods and services) and accountability (governments are accountable to taxpayers). While fairness and equity are features of the tax system, reciprocity and accountability relate to broader governance issues. The equity dimension entails that in addition to trust in the tax authority, trust in fellow citizens may be an important determinant of tax compliance.

Both personal and social norms have been argued to be important determinants of tax compliance (table S4.4.1).[8] Social norms may be important to tax compliance because people care about how they are perceived by others and the social sanctions and rewards associated with these perceptions[9] or because they want to behave as others do. Importantly, personal and social norms can be misaligned, and people may not always act according to their own personal norms.[10] Several studies have identified the phenomenon of pluralistic ignorance, a situation in which most group members personally reject a norm but believe that most others accept it.[11] When pluralistic ignorance exists, providing information about the views of others has been shown

Table S4.4.1 Types of norms and examples

Personal norm or attitude (Moral norm)	Social norm ("a rule of behavior such that individuals prefer to conform to it on the condition that they believe that (a) most people in their reference network conform to it (empirical expectation), and (b) they ought to conform to it (normative expectation)"; Bicchieri 2016, p. 35)	
	Descriptive norm (Empirical expectation)	Injunctive norm (Normative expectation)
What I believe is the right thing to do	What I believe others do	What I believe most people think I should do

Source: Bicchieri 2016; Cialdini, Kallgren and Reno 1991.

to change both tax behaviour[12] and behaviour in other areas.[13] Thus, to understand taxpayer behaviour, it is important to identify and analyse the personal and social norms associated with tax compliance and to investigate the various factors that influence personal and social norms. Differentiating between personal and social norms is a prerequisite for designing efficient policies to enhance desirable outcomes.[14] Empirically, a large literature of field and lab experiments shows that personal and social norms influence each other and that both motivate behaviour but that social norms affect behaviour more than personal norms do.[15]

Trust and norms can vary across different contexts and affect tax compliance

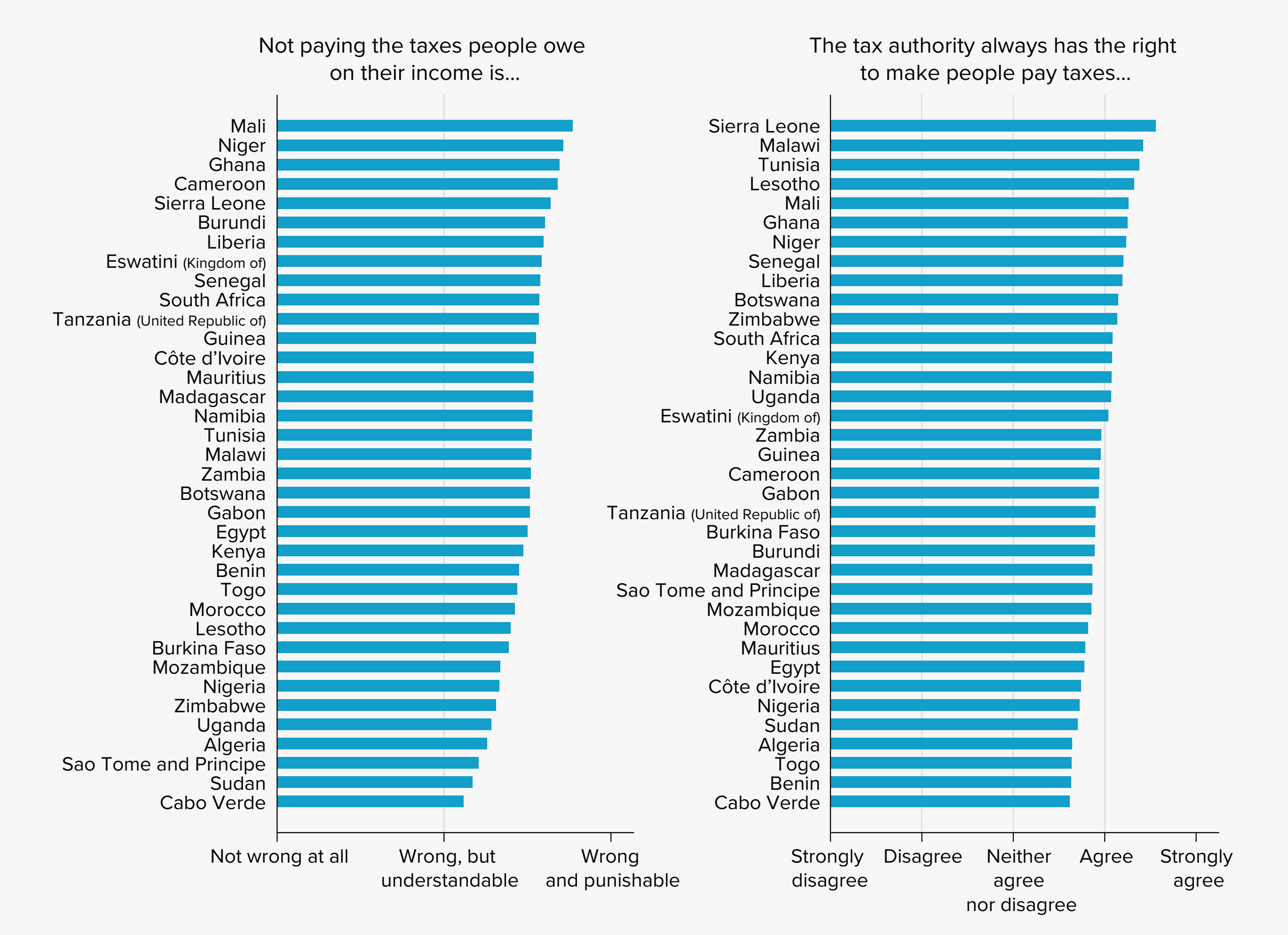
Tax compliance is challenging to measure because individuals are typically trying to hide noncompliant behaviour and attitudes.[16] Empirical investigations of determinants of voluntary compliance have commonly used survey questions from large databases, such as Afrobarometer and the World Values Survey, asking respondents about their views of whether not paying tax is wrong and punishable/justifiable or whether the tax authority has the right to make people pay taxes (figure S4.4.1).[17] In all countries the average respondent thinks that not paying taxes on income is at least "wrong, but understandable" and is closer to agreeing than disagreeing with the statement that the tax authority always has the right to make people pay taxes—but there is substantial variation across countries.

Studies based on such survey measures show that within countries voluntary compliance is positively correlated with a stronger feeling of national identity,[18] trust in the tax authority[19] and perceived fairness in how the government treats the respondent's own ethnic group,[20] which according to the framework of Prichard and others (2019) is an important driver of trust. Furthermore, there is a positive correlation between voluntary compliance and the perceived social norm for tax compliance, as well as satisfaction with provision of public services.[21] However, there are also substantial differences in correlates of voluntary compliance among Kenya, United Republic of Tanzania, Uganda and South Africa.[22] While these studies provide interesting insights into correlates of voluntary compliance, they do not offer causal evidence or explanations for the mechanisms through which the determinants affect voluntary compliance.

The weight of history in shaping trust and norms today

To better understand the causal mechanisms behind variations in voluntary compliance, one strand of the literature studies the effect of historical roots and cultural heritage on voluntary tax compliance.[23] Cultural heritage is passed on from one generation to the next and coupled with the country or ethnic group of origin. And it is well documented that it can affect people's trust in others—for instance, trust in people from the same ethnic group or (dis)trust in people from other ethnic groups, as well as trust in public institutions.[24] For instance, evidence suggests that trust is an important causal mechanism in the negative relationship between economic development today in parts of Africa and the slave trade: individuals who belong to ethnic groups that were more exposed to slave trade are less trusting in their relatives, neighbours, others of the same ethnicity and local government.[25] Moreover, the individual variation in trust in public institutions and neighbourhood caused by differential exposure to the slave trade also explains variations in voluntary tax compliance in several

Figure S4.4.1 Most people in African countries think that not paying taxes on income is at least "wrong, but understandable" and are closer to agreeing than to disagreeing that the tax authority always has the right to make people pay taxes



Note: The survey question for the left figure was "Please tell me whether the following is not wrong at all; wrong, but understandable; or wrong and punishable: Not paying the taxes they owe on their income," and the survey question for the right figure was "Please tell me whether you disagree or agree: The tax department always has the right to make people pay taxes."
Source: Based on the results of Afrobarometer Round 6, 2014/2015 (https://www.afrobarometer.org/, accessed 25 January 2024).

countries: more trusting individuals have a higher voluntary compliance.[26]

A study in Uganda finds that history also plays a role in that people in historically centralized parts of Uganda have mistrust towards the central government and public institutions but may be willing to follow rules and pay taxes when they live in a setting with higher interpersonal trust.[27] Trust affects voluntary tax compliance, and trust is affected by group heterogeneity shaped by history. Thus, historical events and organization of societies continue to shape present voluntary tax compliance through trust and social norms. This finding relates to results in the broader literature in institutional economics that history can matter for present-day outcomes through the evolution and persistence of early institutions.[28]

How trust and norms inform challenges with tax compliance

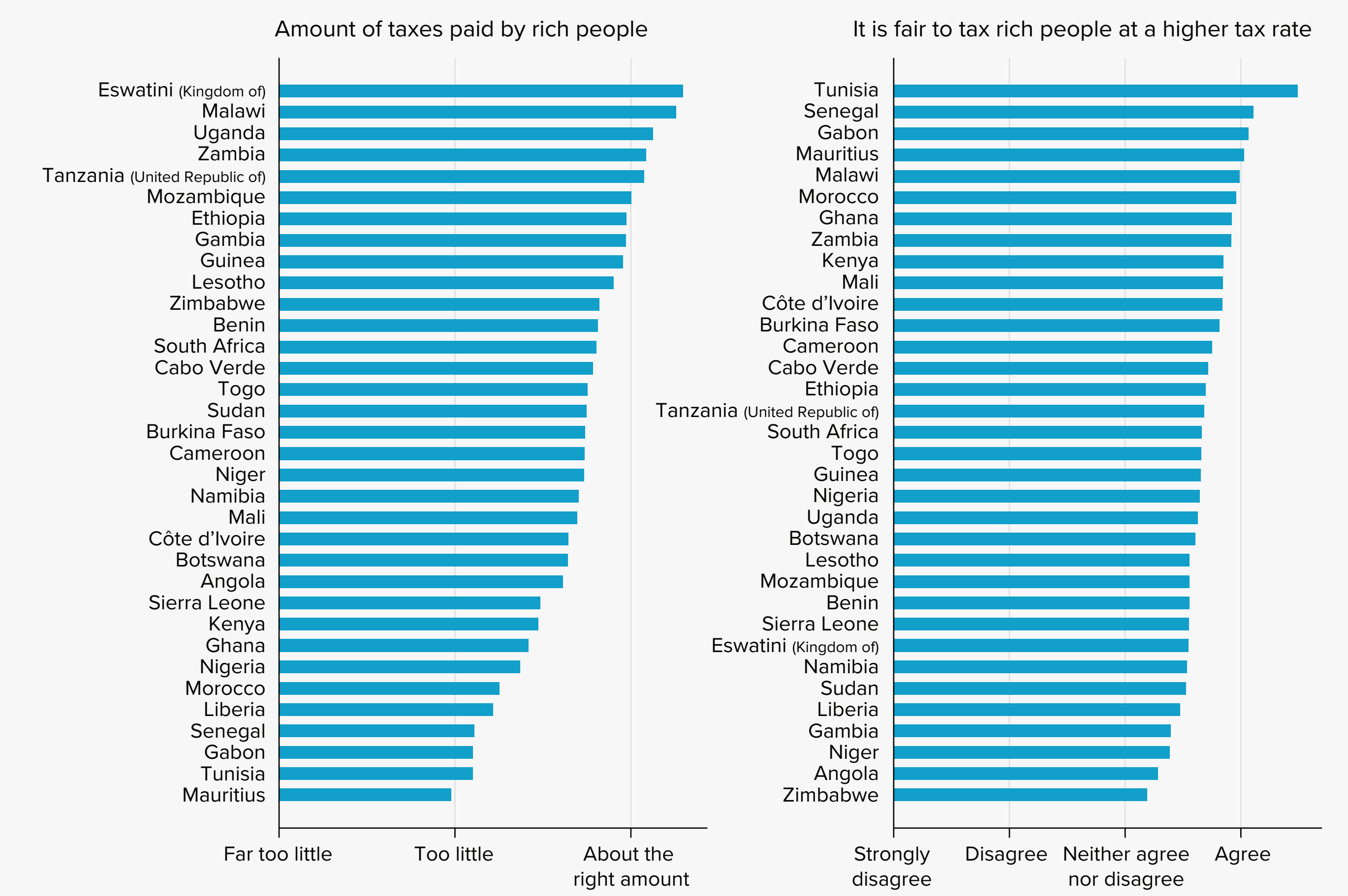
Opportunities for tax evasion by self-employed individuals

Self-employed professionals have more opportunities than salaried workers to minimize their reported incomes—because more of their income is self-reported as opposed to reported by a third party[29]—and are more likely to take advantage of these opportunities.[30] Opportunities for tax evasion may affect people's voluntary tax compliance. Research shows that self-employed individuals have less favourable views on taxes and the tax authorities than other taxpayers.[31] Tax evasion is also found to be high among many self-employed individuals.[32]

Taxing the rich: Noble objectives, unrealistic expectations?

Some studies argue that "the weakness of taxes on the wealthy not only affects revenue but also risks undermining broader trust in the tax system and weakening the social contract."[33] Thus, it is argued, "taxing the wealthy more effectively is critical not only to increasing revenue, but also to building trust in the tax system, thereby unlocking more sustained political support for taxation and the achievement of longer-term gains." However, redistribution through taxation is not a salient election issue in most African countries,[34] nor is it a strong priority of their citizens.[35] In most countries the average response to the Afrobarometer survey question on the amount of taxes that rich people are required to pay is closer to "about the right amount" than to "too little," and while the average respondent in all countries is closer to agreeing than disagreeing with the statement that rich people should be taxed at a higher rate to help poor people, the support for the statement is relatively weak in many countries (figure S4.4.2).

Figure S4.4.2 Redistribution through taxation is not a salient election issue in most African countries, nor is it a strong priority of their citizens



Note: The survey question for the figure on the left was "Do you think that the amount of taxes that rich people in [COUNTRY] are required to pay is too little, too much, or about the right amount?" and the survey question for the figure on the right was "Do you agree or disagree with the following statement: It is fair to tax rich people at a higher rate than ordinary people in order to help pay for government programmes to benefit the poor."
Source: Based on the results of Afrobarometer Round 8, 2019/2021 (https://www.afrobarometer.org/, accessed 25 January 2024).

Redistributive coalition building in ethnically diverse societies may be especially difficult,[36] so that any push for a wider redistributive agenda to benefit the poor tends to be weak.[37] While we sympathize with the argument that "the time has come to tax the rich," the focus of many African governments is to increase revenue by broadening the tax base to incorporate larger segments of individuals and firms in the tax net. The wealthy elites will probably be affected little by these reforms. This is reflected in what Mick Moore refers to as tax administrations' obsession to register new tax taxpayers, the majority of which are small-scale businesses and poor individuals.[38] This approach is associated with the idea that the major source of uncollected revenue in Sub-Saharan Africa is the informal sector.[39] A policy of taxing the very rich is not easy to implement.[40]

Corporate taxpayers: Trust and a predictable tax system

Medium and large firms account for most of the tax revenue in many low- and lower-middle-income countries. Their voluntary compliance is likely to be influenced by different factors than individuals and small firms and needs to be conceptualized differently.[41] Voluntary compliance by firms is likely to be driven by self-interest to a larger extent than voluntary compliance by individuals.[42] Predictability is a critical concern of corporate taxpayers and enhances trust in a way that can allow firms to properly budget and make realistic plans for the future.[43] It also ensures that firms will be treated like their competitors. Questions about fairness and equity are often important for corporations because they affect market competition, profitability and the predictability of their operations.[44] For instance, are other firms in the same sector bearing equivalent tax burdens? Firms also are more likely to be compliant when they believe the government is funding services and activities that benefit them and when they have a voice in shaping those decisions.[45] Thus, improving the predictability and fairness of tax enforcement can foster voluntary compliance and support for reform for corporations.[46]

Taxing the informal sector

A large share of economic activity in poor countries takes place in the informal sector, which is hard to tax.[47] Until recently, tax administrations tended to give it little priority because returns to effort may be low in cash terms, and collection is likely to be difficult. From the economic and administrative perspectives, it makes sense not to tax multitudes of poor people. The value-added tax system generally exempts basic goods that are consumed heavily by poor people, and the income tax code generally excludes individuals and entities with incomes below a certain threshold. However, in recent years several national revenue agencies have introduced special presumptive taxes directed at the informal economy that are based on workers' presumed rather than actual income, given the type of work they perform.[48]

A wider tax net is not always a good thing, but the possibility that tax reforms are driven by a calculus that emphasizes the advantages of excluding marginal payers must be a cause of concern.[49] This would be less of a problem if the actual tax burdens in poor countries were fairly and effectively distributed, but they are not. In particular, they often fall heavily on a small number of registered, formal companies.

Evidence suggests that the relationship between firm size and evasion is negative or U-shaped, implying that small firms are more likely to evade taxation.[50] This evasion may lead to unfair competition, which can undermine trust and negatively affect the voluntary tax compliance of medium firms.[51] Thus, one argument for improving taxation of small and medium enterprises is that it is important for ensuring equity and improving voluntary compliance. It thus makes sense to question the arguments for excluding smaller taxpayers from the tax net on pure efficiency grounds and to explore the potential political and revenue advantages of widening that net, while also carefully considering the administrative implications of doing so.

Policy levers to address tax evasion: Beyond formal laws and regulations

Findings from the research reviewed above show that history, ethnic diversity and how tax revenue is spent may substantially affect people's voluntary tax compliance and trust in government and other citizens. Voluntary tax compliance is also likely to differ between segments of taxpayers (for example, between individuals and businesses), between different taxes (for example, between direct and indirect taxes) and in how taxes are enforced. A general conclusion from this literature is that policies aiming to improve attitudes towards taxes in Africa should pay attention to strengthening the general environment of trust.[52] This is linked to a political economy approach that takes the historical, cultural and political contexts seriously, combined with conventional economic thinking.[53] Thus, it is important to move away from a purely technocratic approach when addressing tax evasion. Advice on tax policy, including methods of auditing and better tax design are valuable but must be located in a wider and case-by-case context, especially given the characteristics of many African countries.

A first step to addressing deep-rooted tax evasion norms is understanding how things actually function in the specific context, independently of how we would expect the tax system to perform according to good governance. This calls for more robust analysis of country and local contexts and institutions, particularly trust in tax authorities and social norms for tax compliance. Improving voluntary tax compliance furthermore requires thoroughly analysing different segments of taxpayers and revenue administrations, as well as their environment, to understand key players' norms and incentives.

This analysis leads to a two-pronged approach to reform. The first prong relates to developing policy instruments that are directed at both the incentives and opportunities for evasion. Unless taxpayers recognize that the penalties for being caught are much more severe than the potential gains, they will continue to take risk evading taxes. This, of course, requires enforcing the rules, which depends on the willingness at the top to reduce tax evasion. The second prong must go beyond legal and regulatory reform to address the root causes of tax evasion. Many efforts to adopt stricter rules for tax administration have failed because informal practices have continued. Changing social norms and mindsets is much more difficult than bringing in new regulations in part because social norms are deep rooted. Successful reforms are not achieved overnight. Reformers must keep this in mind and not be discouraged when they face challenges in implementing their reforms.

Social norms can be persistent across generations, economic development and political regimes.[54] But when they change, it can happen quickly—for instance, when new public information becomes available.[55] Behavioural tipping points—that is, when enough people have strong attitudes against an existing social norm (or towards a new one)—are decisive for norm change. In situations where the social norms for tax compliance are misperceived (underestimated), providing factual information about others' views may enhance compliance.[56]

Education can play a role when designed to help taxpayers understand the importance of paying taxes and how to do so. A wide range of taxpayer outreach and education activities exist across countries.[57] For instance, the Tanzania Revenue Authority is working with secondary schools to mainstream tax education into the curriculum. Government taxpayer education and outreach programmes generally often appeal to state-building narratives. Such programmes are valuable, but they must move beyond the frequent emphasis on why people should pay taxes towards emphasizing who pays taxes, how to pay them and what taxpayers receive in return.[58]

An essential component of building trust is the government's ability to demonstrate that tax revenue results in public services and broader benefits for taxpayers.[59] When governments can demonstrate those connections, it is possible to build meaningful popular support for more effective taxation and compliance.[60] This, combined with more transparent and predictable tax systems, is likely to result in more positive attitudes towards taxation in Africa and popular support for more effective taxation.

Just as improved service delivery is likely to be critical to encouraging voluntary compliance, so too is there an opportunity for more sustained investment in building trust with taxpayers.[61] A starting point for such trust building lies in improving the basic fairness of tax systems. Although discussions of building voluntary tax compliance often centre on improving the provision of public services, improvements in fairness may be important.[62] Such improvements are also much more directly under the control of tax administrations, which may be pursuing reform and seeking to build voluntary or quasi-voluntary compliance. Perceived corruption in tax authorities remains a major barrier to improving trust and voluntary compliance.[63]

NOTES

1. Early research includes Allingham and Sandmo (1972); for a recent review, see Slemrod (2019).
2. A related term for voluntary compliance is "tax morale." We prefer "voluntary compliance" because it better captures aspects of taxpayer motivation that we consider important.
3. Besley 2020; Besley, Jensen and Persson 2023; Luttmer and Singhal 2014; Prichard and others 2019.
4. Kirchler, Hoelzl and Wahl 2008.
5. OECD 2017.
6. Algan and Cahuc 2014.
7. Kirchler, Hoelzl and Wahl 2008.
8. Kirchler, Hoelzl and Wahl 2008.
9. Besley, Jensen and Persson 2023; Luttmer and Singhal 2014.
10. Köbis, Jackson and Carter 2020; Onu 2016.
11. Miller and McFarland 1987.
12. Wenzel 2005.
13. Bursztyn, González and Yanagizawa-Drott 2020.
14. Bursztyn and Jensen 2017; Hallsworth and others 2017.
15. Bicchieri 2016. In the literature on tax compliance, see, for instance, Antinyan and Asatryan (2020), Bott and others (2020), d'Adda and others (2020), Dwenger and others (2016), Hallsworth and others (2017) and Slemrod (2019).
16. Ali, Fjeldstad and Sjursen 2014.
17. See Prichard (2022) for an overview of survey questions used in cross-country studies on voluntary compliance and a discussion of the weaknesses and limitations of these measures. Afrobarometer Round 6 was chosen because it is the most recent survey that includes both of the questions reported in the figure.
18. Besley and Mueller 2021; Blimpo and others 2018.
19. Besley and Mueller 2021.
20. Ali, Fjeldstad and Sjursen 2014; Sacks 2012.
21. Ali, Fjeldstad and Sjursen 2014; Blimpo and others 2018.
22. Ali, Fjeldstad and Sjursen 2014. See Fjeldstad, Schulz-Herzenberg and Hoem Sjursen (2012) for a broader review of correlates of voluntary tax compliance.
23. See Nunn (2020) for a review of the research on the historical roots of economic development more broadly.
24. Dinesen 2011; Kouamé 2021; Uslaner 2008; Woolcock and Narayan 2000.
25. Nunn 2008; Nunn and Wantchekon 2011.
26. Kouamé 2021.
27. Ali and Fjeldstad 2023. A state's organized power to uphold authority implies that it can uniformly apply policies throughout a given territory, such as extracting labour, enforcing the law and demanding taxes (Schraeder 2000).
28. Nunn 2009.
29. Dom and others 2022; Kleven and others 2011.
30. Engström and Holmlund 2009; Saez 2010.
31. Kogler and Kirchler 2020.
32. Chetty, Friedman and Saez 2013.
33. Dom and others 2022, p. 60.
34. Bleck and Van de Walle 2019.
35. Except, perhaps, in Ghana (Bleck and Van de Walle 2019). Inequality per se is not mentioned as a priority of citizens in a large recent Afrobarometer survey of 34 African countries (Coulibaly, Silwé and Logan 2018). Poor access to public services is a major concern, however—one that clearly has equity implications.
36. Mazrui 2008.
37. Bolch, Ceriani and López-Calva 2022.
38. Moore 2023.
39. Moore 2023. For instance, in a survey of 26 national tax administrations for the 2018 African Tax Outlook, 15 reported one or more special programmes or initiatives to deal with the informal sector (ATAF 2018). By contrast, only 4 had special sections for high-net-worth individuals.
40. Harrington 2016.
41. Alm and McClellan 2012; OECD 2019; Prichard and others 2019; Slemrod 2019.
42. Prichard and others 2019.
43. Campos, Lien and Pradhan 1999; World Bank 2018.
44. Alm and McClellan 2012; OECD 2019; Prichard and others 2019.
45. Prichard 2015.
46. Dom and others 2022.
47. Bird and Wallace, 2003. The concept the informal sector is disputed. When the term is used in relation to taxes in Africa, it generally refers to unregistered, small-scale economic operators (Moore 2023). The size of the informal economy is difficult to estimate. Estimates for low- and middle-income countries suggest that informality accounts for 30–70 percent of GDP and 20–80 percent of the labour force (Ulyssea 2020; Ulyssea, Bobba and Gadenne 2023). Estimates from West Africa suggest that more than 80 percent of total employment is informal and up to 60 percent of GDP is produced by informal activities (Benjamin, Mbaye and Diop 2012).
48. Dube and Casale 2016; Joshi, Prichard and Heady 2014; van den Boogaard, Prichard and Jibao 2018.
49. Ali, Fjeldstad and Sjursen 2014; Fjeldstad and Moore 2008.
50. Abdixhiku and others 2017; Cowell 2003; Hanlon, Mills and Slemrod 2007; Slemrod 2004.
51. Torgler and Schneider 2007.
52. Kouamé 2021.
53. Besley and Mueller 2021.
54. Jackson and Köbis 2018.
55. UNDP 2019.
56. Wenzel 2005.
57. Dom and others 2022.
58. Dom and others 2022.
59. Ali, Fjeldstad and Sjursen 2014; Bird 2011.
60. Dom and others 2022; Sanogo 2019.
61. Dom and others 2022.
62. Kogler, Muehlbacher and Kirchler 2015.
63. Aiko and Logan 2014; Fjeldstad 2006.

CHAPTER

5

Expanding agency for collective action

Expanding agency for collective action

Enhancing human development—including agency—expands possibilities for people to act as "agents who can do effective things." So, how best to expand agency to foster collective action to address global challenges?

Narrowing agency gaps can support establishing and pursuing common goals, such as providing global public goods, even when differences in preferences, beliefs and interests persist. Expanding agency can thus enhance collective action. Institutions can link human agency and collective action at scale by being people-centred, co-owned and future-oriented.

The toll of mismanaged global interdependence on human development (chapter 1) reflects inadequate or slow collective action on global challenges ranging from climate change to pandemics. Not for a lack of knowledge on what to do. Technologies to power an energy transition or vaccines to save lives either are already in place or have been developed quickly—but our ability to act collectively at scale is falling short (chapter 2).

Institutions and behaviour are intimately interlinked (chapter 4). Policy has long focused on institutional design and interventions premised on a set of fixed and universal assumptions about human behaviour, downplaying broader social contexts and how they change over time. Expanding assumptions about human behaviour with insights from behavioural science and the role of culture can widen the set of options to enhance collective action to provide global public goods (chapter 4). To do so, it is critical to recognize the role of human agency: people's ability to hold values, set goals and make commitments that may, or may not, advance their wellbeing.[1]

Enhancing human development—including agency—expands possibilities for people to act as "agents who can do effective things."[2] So how to expand agency to foster collective action to address global challenges?

The question motivates this chapter. Advances in wellbeing can support agency—knowledge, health and material means enhance the possibilities for people to act as agents—but the relationship is far from automatic. Indeed, the chapter documents agency gaps—people's inability to be, or to believe they can be, agents for change—that persist or are widening, even as the world is reaching peak levels of income, as well as of health and education outcomes, along with unprecedented technological achievements. The focus is on how agency gaps hinder collective action and how they are connected with, for example, intensified perceptions of insecurity and distress in parallel with massive increases in standards of living. For example, only about half of people in the world today feel they have high control over their own lives, a proxy for agency. And the share of people feeling in control drops even more when it comes to influencing collective decisionmaking, since only 31 percent of people feel they have a say in the decisions of their government.[3]

These agency gaps parallel deficits in the collective action needed to address shared challenges on a shared planet. Mismanagement of global interdependence may in turn further erode human development (chapter 1) and open space for polarization, resulting in gridlock on collective action (chapter 2). To break free from this gridlock, the chapter explores how narrowing agency gaps can support establishing and pursuing common goals, such as providing global public goods, even when differences in preferences, beliefs and interests persist. In this way it argues that narrowing agency gaps can enhance collective action. It further argues that expanding agency needs to be a complementary policy objective alongside advancing wellbeing achievements and that institutions can link human agency and collective action at scale by being people-centred, co-owned and future-oriented.

How agency gaps hinder collective action

Despite the dip in Human Development Index (HDI) values in 2020–2021 and the unequal recovery since then (chapter 1), there has been notable progress in the wellbeing aspects of human development: in expanding the achievements and freedoms to live a better life. At the same time, the agency aspects of human development[4]—people's ability to hold values, set goals and make commitments,[5] which imply the ability to lead a life with purpose—have been relatively neglected as policymaking objectives, particularly those required to pursue collective outcomes.[6] Agency enhances people's capabilities and is positively correlated with mental wellbeing.[7] It is also key to transforming our world towards sustainability and equity, an aspiration codified in the 2030 Agenda for Sustainable Development.[8]

> "Agency gaps are opening at multiple levels, limiting people's ability to act as agents of change to support collective action

Agency gaps are opening at multiple levels, limiting people's ability to act as agents of change to support collective action. It is curtailed by inequalities and power imbalances that hinder collective decisionmaking.[9]

Shortcomings in collective action: Limits to cooperation, despite unprecedented coordination

Interdependence stems in part from human ultrasociality,[10] reflected in coordinated actions involving individuals around the world. Markets, which involve interactions between participants who, for the most part, may never meet, have become globalized (chapter 2). Governments have implemented extensive social insurance programmes, with 3.7 billion people covered by at least one social protection benefit.[11] Education systems provide schooling for 1.6 billion children worldwide.[12] While still insufficient, these numbers represent massive achievements.

Multilateral institutions, particularly the United Nations, strive to uphold human rights, advance development and promote peace. The United Nations convenes parties to international treaties, enabling agreements such as the establishment of a loss and damage fund at the 28th meeting of the Conference of the Parties to the United Nations Framework Convention on Climate Change, from which more than 3 billion people are set to benefit.[13] Civil society has rallied behind the 2030 Agenda for Sustainable Development,[14] bolstered by social movements that have expanded the realm of possibilities, championing the rights of women; individuals who identify as lesbian, gay, bisexual, transgender, queer, intersex or other sexuality minority; Indigenous peoples; individuals living with disabilities; and more. Social networks facilitate the instantaneous exchange of information among some 5.4 billion internet users.[15]

Despite these achievements, which often reflect advances in addressing coordination challenges, international collective action is falling short. For instance, in the case of climate change, the following shortcomings reflect less progress with cooperation:

- Markets fail to account for externalities, but some externalities are now at planetary scale. For example, carbon prices hugely undervalue the costs associated with greenhouse gas emissions,[16] exacerbating global inequalities.[17]
- Governments have mobilized substantial investment to facilitate the energy transition—but not at the scale required. In 2023 governments allocated an estimated $1.34 trillion for clean energy investment, a 25 percent increase since 2021.[18] But this effort pales next to subsidies to fossil fuels: $7 trillion in 2022, up from $4.5 trillion in 2015 (when the Paris Agreement was adopted).[19] Increased political polarization, which affects more than two of every three countries, makes government action even more difficult (chapter 6).[20] Financing constraints are another impediment to government action, exacerbated by tax avoidance and evasion: globally, multinationals have shifted 36 percent of their profits to tax havens.[21]
- Multilateral arrangements have not marshalled the pooling of resources required to meet the aspirations of the 2030 Agenda for Sustainable Development and the Paris Agreement. The annual target of $100 billion in finance to support the mitigation of climate change in low- and middle-income countries has been missed, even though it represents just 0.1 percent of the global economy (about $100 trillion).[22] And the loss and damage fund has received annual pledges totalling more than $600 million, but the annual loss and damage associated with climate change are estimated to be as high as $400 billion a year.[23]
- Civil society has expanded but is also facing headwinds.[24] When people do mobilize, they are often constrained in their efforts to occupy civic space and exercise their rights.[25] In several countries environmental activists face violent crackdowns and persecution; nearly 2,000 environmental activists were killed between 2012 and 2022.[26]

“Agency gaps are both a cause and an effect of the mismanagement of interdependence, in a vicious cycle where shortcomings in collective action to deal with interdependence lead to costly losses in people’s lives

Agency gaps are undermining collective action

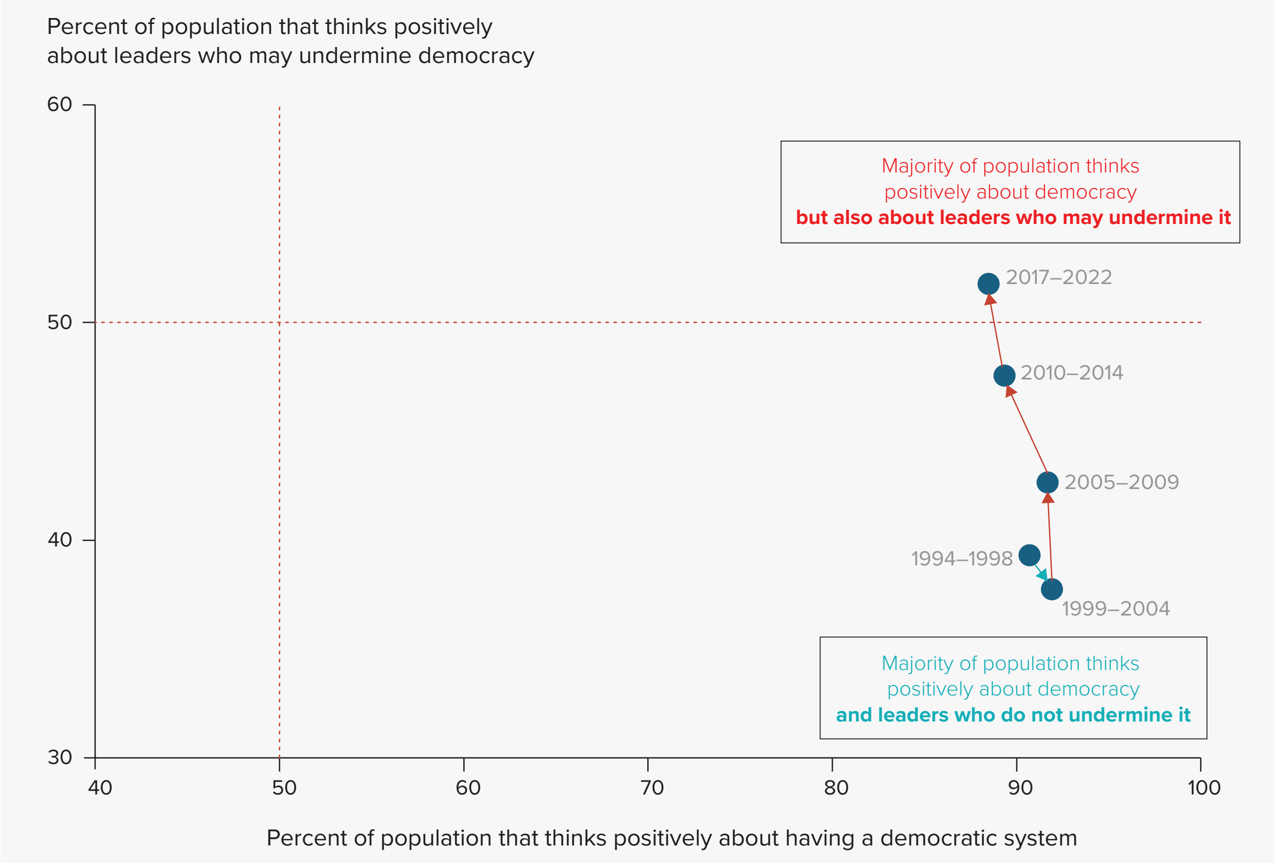
Agency gaps are both a cause and an effect of the mismanagement of interdependence, in a vicious cycle where shortcomings in collective action to deal with interdependence lead to costly losses in people’s lives (chapter 1), as well as to feelings of unsettledness[27] and human insecurity. Human insecurity fuels polarization, with many people gravitating towards populism (chapter 2).[28] The protectionist stance often associated with populism[29] further complicates collective action in addressing global challenges.

The consequences of this vicious cycle affect democratic norms and practices, as reflected in the decline in indicators tracking people's ability to shape collective outcomes (chapter 1).[30]

The erosion of democratic norms and practices is associated not so much with a crisis of support for democracy as an ideal but with a crisis in institutions perceived as not delivering on that ideal.[31] There is an emerging democracy paradox: nearly 9 in 10 people believe that democracy is a fundamental pillar of political systems. But support for leaders who may bypass the fundamental rules of the democratic process has markedly increased (figure 5.1). Today, more than half of those polled express support for such leaders.

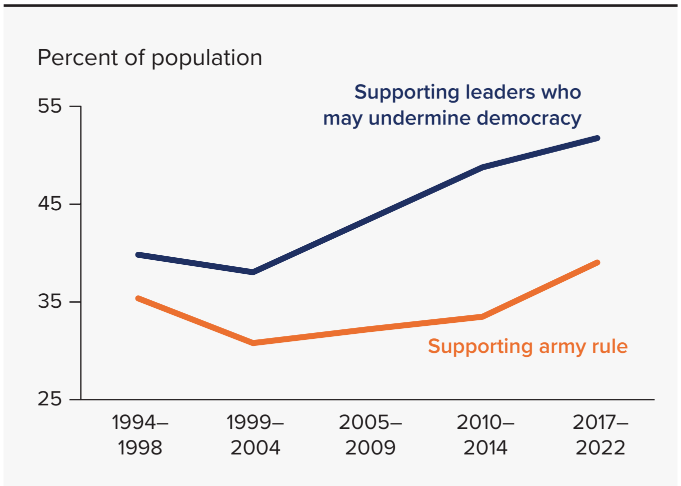
People are questioning some core principles of collective action. The increase in support for leaders who might undermine democratic norms and practices has been accompanied by a rise in preferences for military rule, which today reaches 39 percent of the population (figure 5.2).[32] This apparent paradox (commitment to democracy along with increasing support for leaders who undermine it) mirrors the gridlock in adjusting current institutions—not fit for purpose amid shifting patterns of interdependence—to the evolving demands from people around the world.

Figure 5.1 The democracy paradox? Unwavering support for democracy along with increasing support for leaders who may undermine it



Note: Data are population-weighted averages for a panel of countries representing 76 percent of the global population. Percent of population on the vertical axis refers to people who responded that having a strong leader who does not have to bother with parliament and elections is "very good" or "fairly good." Percent of population on the horizontal axis refers to people who responded that having a democratic political system is "very good" or "fairly good."
Source: Human Development Report Office based on data from multiple waves of the World Values Survey (Inglehart and others 2022).

Figure 5.2 Large and increasing shares of the population support leaders who may bypass democratic norms and practices, 1994–2022



Note: Data are population-weighted averages of a balanced panel of countries representing 76 percent of the global population. Percent of population supporting leaders who may undermine democracy refers to people who responded that having a strong leader who does not have to bother with parliament and elections is "very good" or "fairly good." Percent of population supporting army rule refers to people who responded that having an army rule is "very good" or "fairly good."
Source: Human Development Report Office based on data from multiple waves of the World Values Survey (Inglehart and others 2022).

Narrowing agency gaps can strengthen and legitimize institutions that enhance collective action

Narrowing agency gaps can enhance collective outcomes by improving the perceived legitimacy of institutions (see box 4.7 in chapter 4). Narrowing agency gaps allows people to have more opportunities to participate in public reasoning and decisionmaking through institutions they have confidence in. That confidence is in turn rooted in people's beliefs that institutions deliver on the collective action outcomes they are meant to support. Low confidence in institutions reflects shortcomings in delivering on those collective action outcomes. While economic shocks (such as increased unemployment) do not affect generalized trust or the belief that people are helpful, they are strongly associated with a decline in trust in institutions such as national parliaments (including the European Parliament in countries that are members of the European Union) and in politicians. Trust in the United Nations is less affected, suggesting a strong association between negative economic shocks and a decline in trust in institutions and individuals that people expect to more directly look after the common interest (figure 5.3).

Based on this reasoning, we assess agency gaps using two proxy variables. First, agency gaps are measured by the percentage of people who report having no or limited control over their lives. Second, agency gaps are measured as the percentage of people who report that their voices are not considered in the political system.[33] About half the world's people report not being in control of their own lives. And the agency gap in influencing collective outcomes is much higher, with more than two-thirds of people worldwide perceiving that they have little influence in the decisions of their government (figure 5.4).[34]

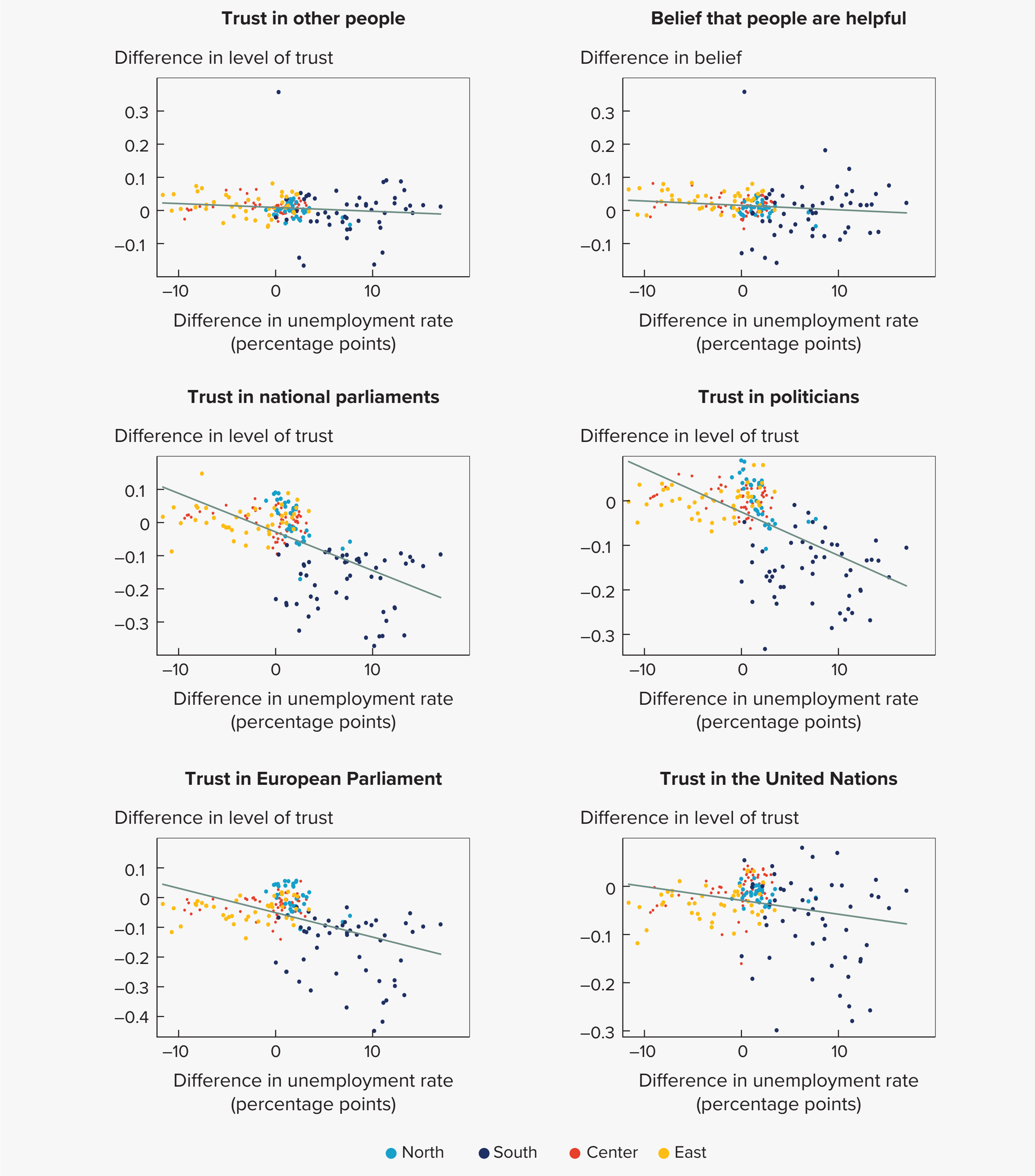
The less that people feel their voice is heard in government, the less confidence they have in government, regardless of how corrupt they perceive authorities to be (figure 5.5). In turn, higher perceptions of corruption are associated with reduced confidence in government. So, while addressing corruption is central to enhancing confidence in government (as widely recognized), confidence in government can also be increased at each level of perceived corruption by giving people more agency (as measured by their perception of having voice in government decisions).[35]

Narrowing agency gaps to foster collective action

Narrowing agency gaps can enhance collective action, particularly when cooperation is required. Indeed, agency opens space for cooperation beyond self-interest.[36] If "the concern for others directly affects one's own welfare,"[37] it pertains to advancing one's own wellbeing. But when cooperation follows from commitments that go beyond advancing one's own wellbeing,[38] we are in the realm of agency.[39]

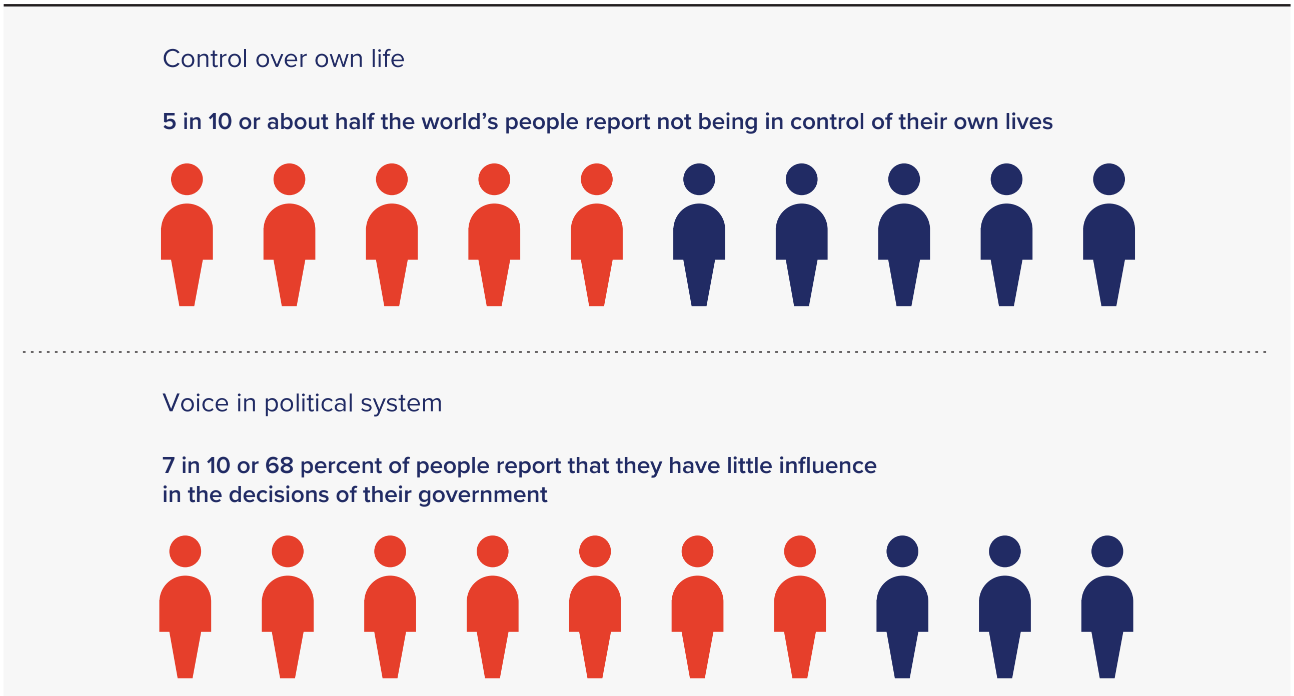
When agency includes the pursuit of commitments associated with collective outcomes, narrowing agency gaps can foster cooperation, but it is important to understand the mechanisms that may facilitate or hinder that link. Over the past several decades the association between agency (as measured by the belief that one is in control of one's life) and generalized trust (important for cooperation) has weakened; among people reporting high levels of control over their lives, there has been a large increase in those who do not trust others. A third of the

Figure 5.3 Economic shocks are associated with lower trust in institutions—but the relationship is weaker for trust in the United Nations and in one another



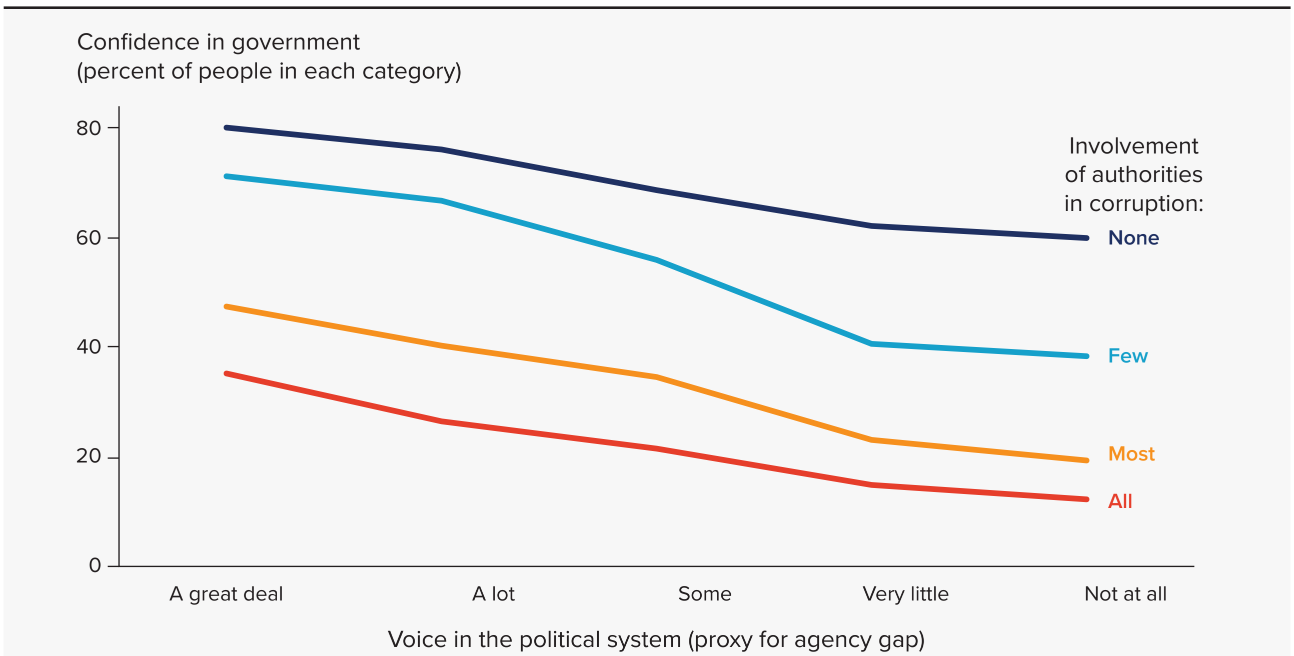
Note: Each figure plots subnational regions of 24 European countries at the Nomenclature of Territorial Units for Statistics level of aggregation. Levels of trust are based on responses to the European Social Survey. Differences are between observations pooled before the European debt crisis (2004, 2006 and 2008) and after the crisis (2010, 2012 and 2014).
Source: Algan and others 2017.

Figure 5.4 **Agency gaps in collective action are higher than those in control over one's own life**



Note: Agency is the ability of people to act as agents who can do effective things based on their commitments (Sen 2013). It is proxied by two indicators: the share of the population that reported feeling in control over their lives (measured on a scale of 1–10, where 1–3 indicates an acute agency gap, 4–7 indicates a moderate agency gap and 8–10 indicates no agency gap) and the share of the population that reported feeling that their voice is heard in the political system (those who responded "A great deal" or "A lot"). Data are computed using microdata and equal weights across countries.
Source: Human Development Report Office based on data from wave 7 (2017–2022) of the World Values Survey (Inglehart and others 2022).

Figure 5.5 **Reducing corruption increases confidence in government but so does narrowing agency gaps**



Note: Computed using microdata and equal weights across countries. Confidence in the national government implies reporting "a great deal" or "quite a lot" of confidence (other options: "not very much" or "none at all"). Voice in institution is captured by responses to the question, "How much would you say the political system in your country allows people like you to have a say in what the government does?" Perception of corruption is captured by responses to the question, among state authorities, "How many do you believe are involved in corruption?"
Source: Human Development Report Office based on data from wave 7 of the World Values Survey (Inglehart and others 2022).

global population reports control over their lives and no trust (figure 5.6). In turn, the share of the world's people with a high level of agency and trust in others has declined substantially.

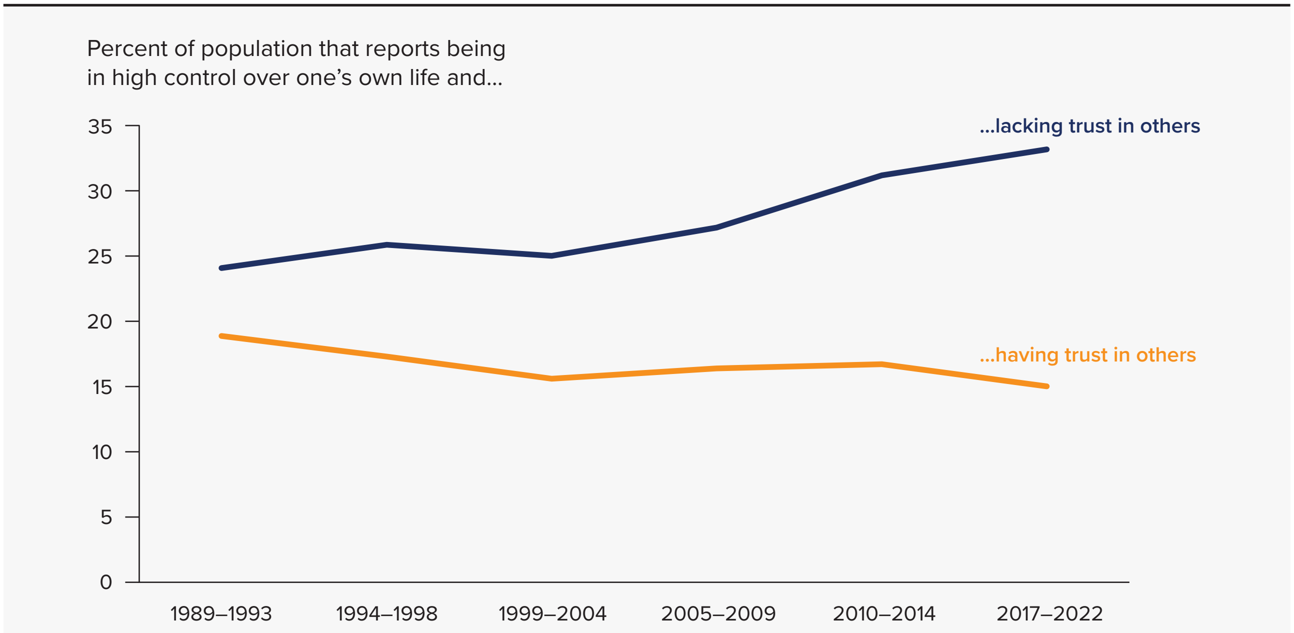
Thus, it matters to understand the factors that may account for the link between agency gaps and collective action. Factors that may mediate the relationship between narrowing agency gaps and prospects for cooperation include inequalities, power imbalances, human insecurity, a lack of space for deliberation and social norms biased against cooperation. Overcoming these challenges can make narrowing agency gaps more likely to enhance cooperation.[40]

Inequalities and power imbalances shape agency

Inequalities affect different agency gaps. There is a steep decline in the share of people reporting having very low control over their lives for the bottom 50 percent of the income distribution (figure 5.7). That is, agency increases as income grows for the bottom 50 percent of the distribution. At the very bottom lack of agency is particularly heightened (agency gaps are three times greater among people in the lowest income decile than in decile 6 and above). So, basic capabilities, such as being healthy or acquiring basic writing and numeracy skills, may be a binding constraint for agency (in addition to the well-established implications of people being deprived in wellbeing).[41] Moreover, the share of people reporting having very high control over their lives is low and fairly equal for the bottom 50 percent of the population but rises with income for deciles 6 and above. Thus, income inequalities, which often intersect and are associated with other inequalities in human development, shape agency.

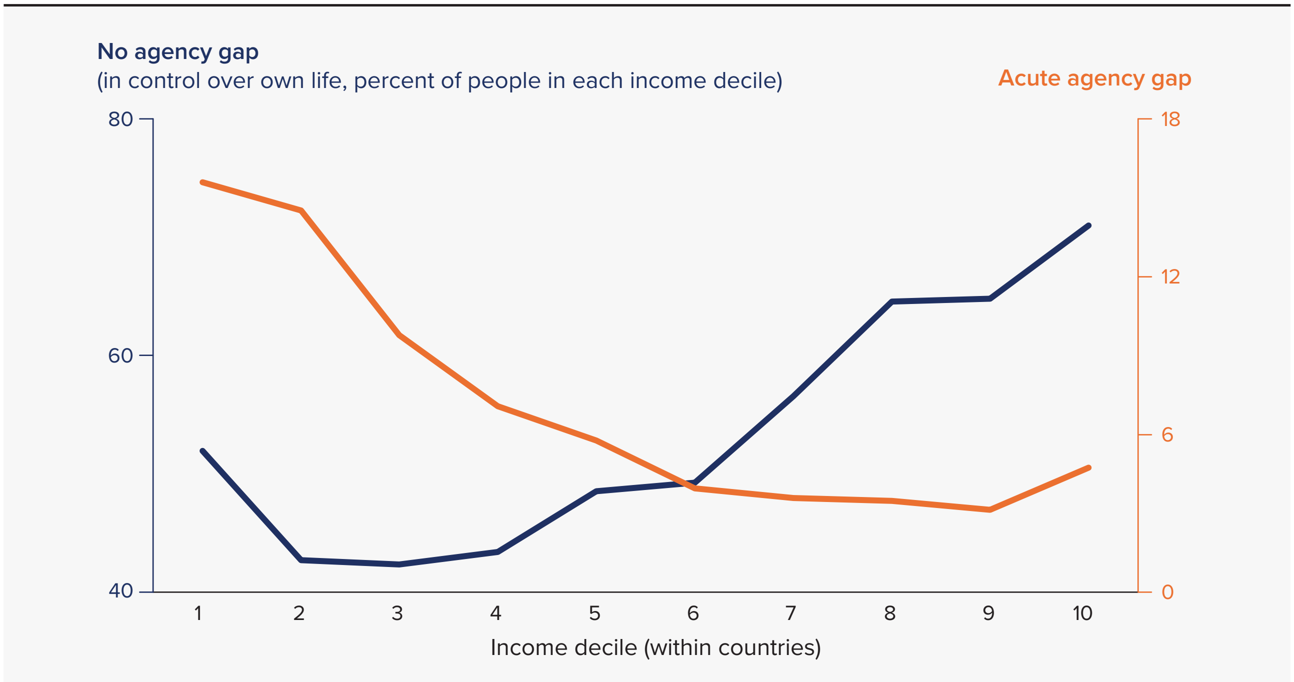
In turn, inequalities in both income and education are associated with inequalities in having an interest in politics, linking inequalities and processes that matter to shape collective action outcomes. The lower the income, the less interested people are in politics and the more likely they are to report never voting (figure 5.8). The relationship with education inequalities is even steeper: the lower the education level, the lower the interest in politics and the higher the likelihood of reporting never voting (figure 5.9).

Figure 5.6 Agency in control over one's own life and trust



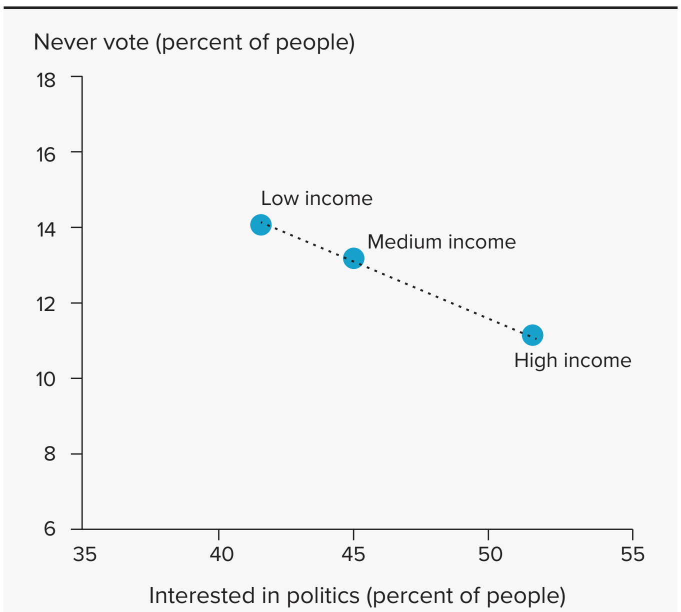
Note: Data are population-weighted averages for a balanced planel of countries representing 76 percent of the global population. Agency in control over one's own life is measured by those reporting high control (8–10 on a 1–10 scale). Trust in others is measured using responses to the question, "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" Figures are based on individual-level data, intersecting both conditions (agency in control over one's own life and trust or no trust in others).
Source: Human Development Report Office based on data from the World Values Survey (Inglehart and others 2022).

Figure 5.7 The perception of agency (control over one's own life) is shaped by income



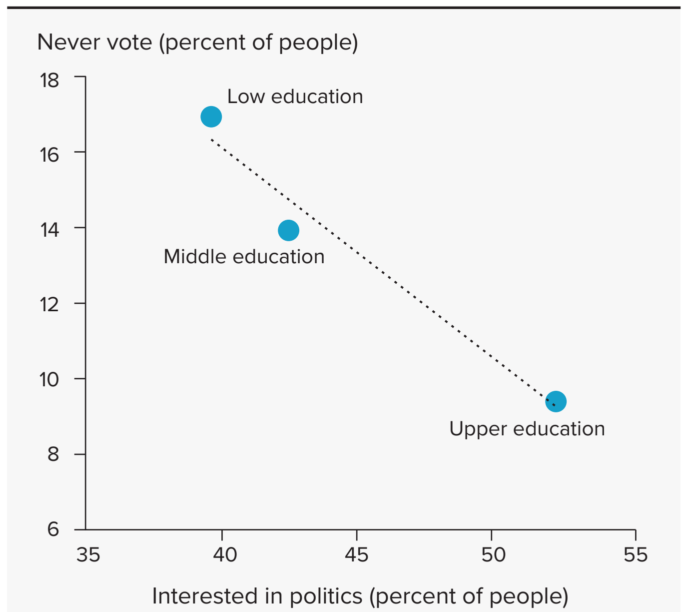
Note: Computed using microdata and equal weights across countries. No agency gap measures the share of the population reporting feeling in control over their lives (options 8–10 on a 1–10 scale). Acute agency gap measures the share of the population reporting feeling no or very low control over their lives (options 1–3 on a 1–10 scale).
Source: Human Development Report Office based on data from wave 7 of the World Values Survey (Inglehart and others 2022).

Figure 5.8 The higher the income, the more likely people are to report being interested in politics and voting



Note: Computed using microdata and equal weights across countries. "Never vote" refers to reported voting behaviour in national elections. Income reflects the subjective income level and is measured on a 1–10 scale, which is then recoded into three groups: low (1–3), medium (4–7) and high (8–10).
Source: Human Development Report Office based on data from wave 7 of the World Values Survey (Inglehart and others 2022).

Figure 5.9 The higher the education level, the more likely people are to report being interested in politics and voting



Note: Computed using microdata and equal weights across countries. "Never vote" refers to reported voting behaviour in national elections. Education is categorized based on the highest education level attained: lower education (up to lower secondary education), middle education (upper secondary education and postsecondary nontertiary education) and upper education (tertiary education and above)
Source: Human Development Report Office based on data from wave 7 of the World Values Survey (Inglehart and others 2022).

These inequalities in political participation by income and education achievements can exacerbate the biases in collective outcomes shaped by power imbalances that drive political decisions towards the interests of the more powerful.[42]

Human insecurity reduces agency

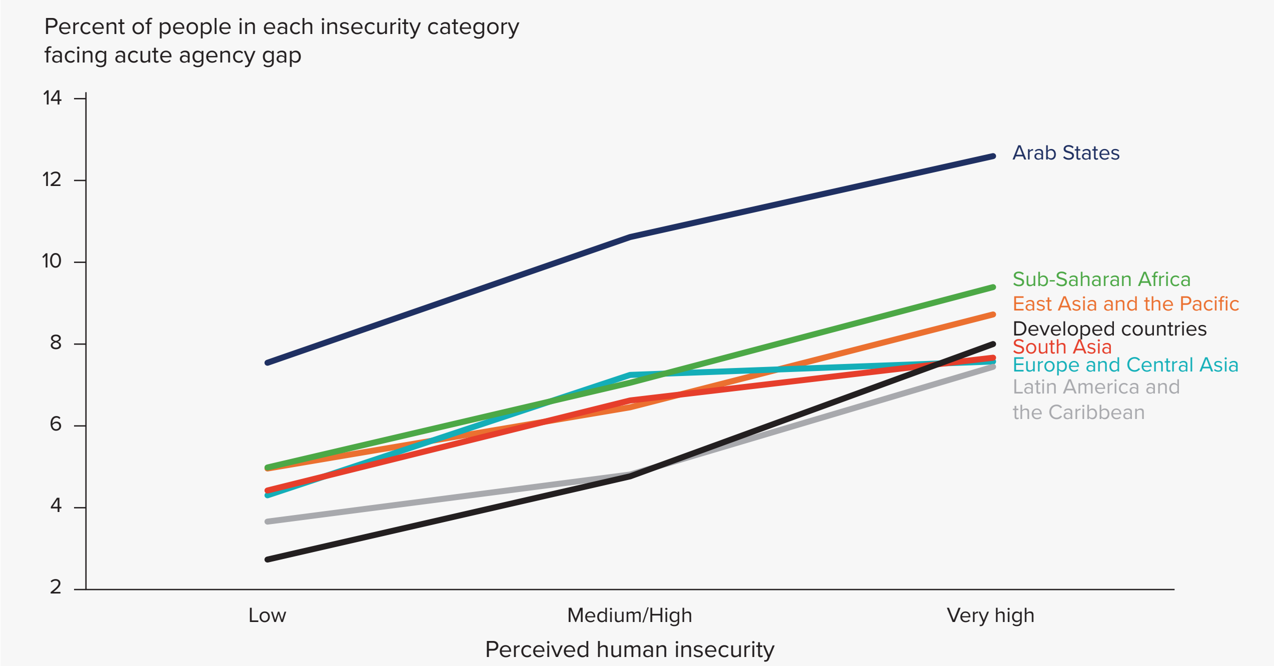
People who report feeling more insecure about some aspects of their lives also report feeling less in control of their lives. The decline of agency with the increase in perception of human insecurity holds across all world regions (figure 5.10). Human security is a multidimensional concept that pertains to people being free from fear, want and indignity.[43] Human insecurity constrains agency when people fear participating in social life or using public spaces and deliberation mechanisms without shame.[44]

Perception of human insecurity also affects generalized trust, key for cooperation. The higher the perceived insecurity, the lower the share of people reporting generalized trust, with this relationship stronger at higher HDI levels (figure 5.11). Moreover, among people in very high HDI countries, perceived human insecurity is associated with lower support for democracy and greater tolerance of violence as a means of political action.[45]

Higher perceived human insecurity is also associated with less confidence in institutions across the three branches of government—executive, legislative and judiciary (figure 5.12). The association gets stronger as the HDI level declines. Moving from association to causality between perceived human insecurity and confidence in institutions is difficult. Causality may be mediated by perceived human insecurity; if so, the association reflects shortcomings in the ability of institutions to deliver human security. And if that is so, addressing human security concerns directly can not only restore trust but also improve confidence in institutions. Both channels can enhance collective action.

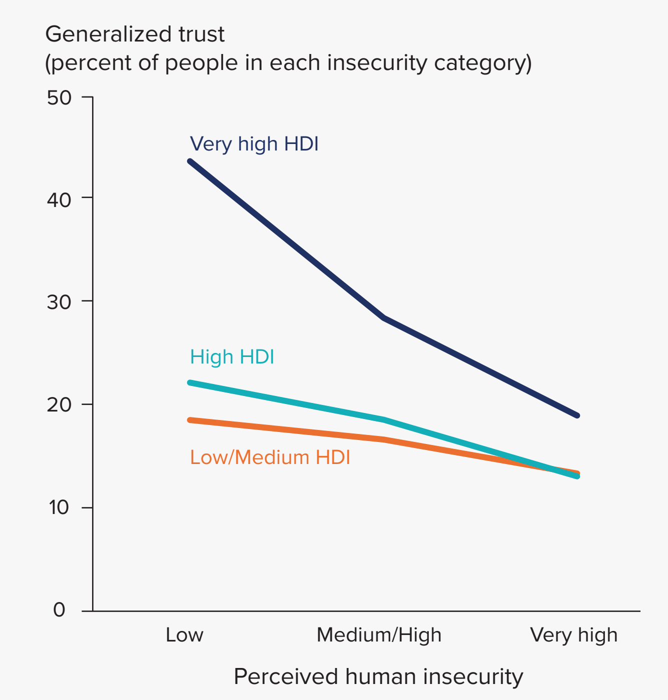
A human security lens can integrate policy goals and agendas, taking into consideration issues ranging from concerns with social cohesion (spotlight 5.1) to people's embeddedness in nature.[46]

Figure 5.10 The higher the perceived human insecurity, the lower the sense of control over one's own life



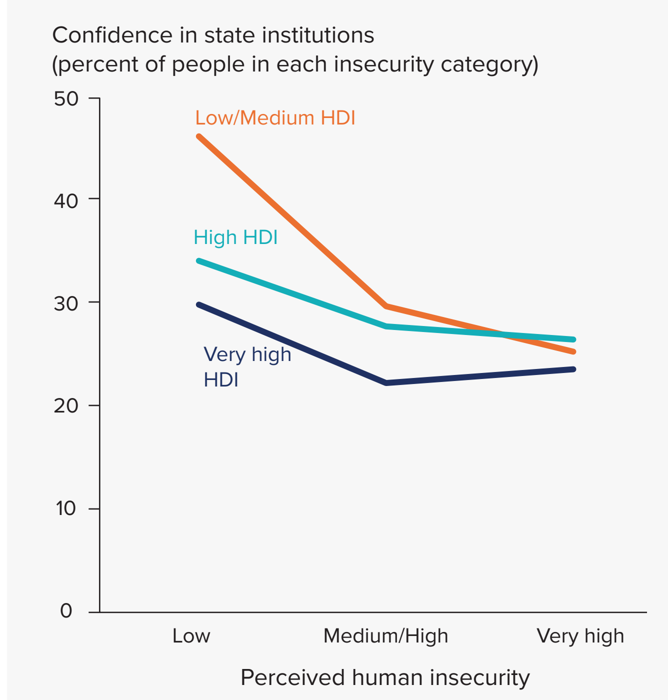
Note: Perceived human insecurity is measured as "low," "medium and high" and "very high," using microdata and equal weights across countries, and is based on the index described in annex 1.2 of UNDP (2022d). Acute agency gap measures the share of the population reporting feeling no or very little control over their lives (options 1–3 on a 1–10 scale).
Source: Human Development Report Office based on the latest available data from wave 6 (2010–2014) and wave 7 (2017–2022) of the World Values Survey (Inglehart and others 2022).

Figure 5.11 Perceived human insecurity is related to generalized trust, especially for higher Human Development Index (HDI) groups



Note: Perceived human insecurity is computed using microdata and equal weights across countries and is based on the index described in annex 1.2 of UNDP (2022d). Generalized trust implies reporting that "most people can be trusted" (other option: "need to be very careful").
Source: Human Development Report Office based on data from wave 7 of the World Values Survey (Inglehart and others 2022).

Figure 5.12 Perceived human insecurity is related to confidence in state institutions



HDI is Human Development Index.
Note: Perceived human insecurity is computed using microdata and equal weights across countries and is based on the index described in annex 1.2 of UNDP (2022d). Confidence in state institutions reflects combined confidence in the national government, the parliament and the justice system. Confidence implies reporting "a great deal" or "quite a lot" of confidence (other options: "not very much" or "none at all").
Source: Human Development Report Office based on data from wave 7 of the World Values Survey (Inglehart and others 2022).

Fostering the conditions for agency to enhance collective action through public reasoning and deliberation

Fostering the conditions that enable the formation of collective beliefs that transcend group boundaries can narrow agency gaps to enhance collective action. Promoting meaningful civic engagement in public decisionmaking implies that people feel their voices are heard and considered—not only as an expression of interests but also as a broader process of public input reasoning that scrutinizes beliefs, particularly those associated with polarization (chapter 6). One way to achieve this is through deliberative assemblies that some countries and communities are experimenting with (box 5.1).

Processes of public reasoning and deliberation are also used to enhance collective action at lower scales, as in the world of work, where there is growing recognition of the need for dialogue (box 5.2). Over the past few decades changes in the world of work—fragmenting global production through global value chains and de-unionizing workers—have reduced some of the established institutions that facilitate collective bargaining. With continuing rapid technological change, the demand for spaces for social dialogue among workers, firms and governments is likely to persist.

Social norms can support or limit collective action

Social norms, shared by many and socially enforced in a decentralized way, affect people's beliefs and agency and thus shape social behaviours and can support collective action (chapter 4).

Not all social norms are conducive to express human agency in cooperative outcomes. For example,

Box 5.1 **Promoting more deliberative forms of citizen participation**

UNDP Governance Team

Recent years have seen a surge of interest in deliberative democracy—which has been described as a deliberative wave.[1] Researchers and practitioners see these approaches as having the potential to address the crisis of democracy[2] by enabling new forms of citizen participation that are truly inclusive and grounded in evidence, informed by thoughtful analysis and conducive to consensus building.

Deliberative minipublics, such as citizen assemblies, are one way to operationalize deliberative democracy ideals. In Ireland a citizen assembly was established in 2016 to review aspects of the Irish constitution. Its recommendations resulted in two constitutional referendums, which led to substantial policy change on same-sex marriage and abortion. Voting patterns differed between voters familiar with the assembly and those not, suggesting an impact on the deliberative nature of the referendum in the wider community.[3]

Deliberative minipublics face challenges. One is the ethical and methodological difficulty of addressing the impact of inequality on minipublic dynamics.[4] A second is the complexity of embedding minipublics into broader systems of participation and political representation.[5] And a third is the risk of minipublics being used as a strategy to displace civic organizing and other forms of activism.[6] Even so, integrating deliberative standards into citizen engagement processes can overcome polarization and help elaborate high-quality public input.[7] So, there seems to be great merit in continuing to explore this field.

Notes

1. OECD 2020. **2.** Dryzek and others 2019. **3.** Elkink and others 2017. **4.** Lupia and Norton 2017. **5.** Lafont 2017. **6.** Young 2001. **7.** Curato and others 2017.

Box 5.2 **Social dialogue in the world of work**

International Labour Organization

Collective action and the representation of workers and employers through social dialogue, essential for democracy and good governance, hold potential for advancing human development. Social dialogue encompasses all types of negotiations, consultations and exchanges of information among representatives, governments, employers and workers. These interactions revolve around issues of common interest related to economic and social policies and include collective bargaining, workplace consultation and cooperation, and bipartite and tripartite social dialogue at the national and sectoral levels.

Social dialogue embodies a fundamental democratic principle: involving those most affected by decisions in shaping policies that directly affect them. Employer and worker organizations are crucial in this process. They act as agents and provide a collective voice for enterprises and workers. By broadening the scope of decisionmaking, social dialogue improves the quality, legitimacy and ownership of decisions, fostering a stronger commitment to their implementation. Consequently, this enhances the adaptability, agility and resilience of economies. Social dialogue—enabled through independent, strong and representative employer and worker organizations—provides space for cooperation and can advance economic and social progress, including by addressing inequality and inclusiveness in labour markets.

However, social dialogue must be based on two fundamental principles and rights at work: freedom of association and the effective recognition of right to collective bargaining. These core labour rights, coupled with effective institutions of work, underpin sustainable economic development and social justice. They empower both workers and employers to engage in meaningful dialogue, ensure that their voices are heard and lay the foundation for decent work and inclusive labour market outcomes.

Throughout the Covid-19 pandemic governments and social partners joined forces to create short-term strategies while formulating comprehensive, forward-looking policies and measures to shape an inclusive, sustainable and resilient recovery. In countries where active engagement between employer and worker representatives was integrated into the response, social dialogue not only was crucial in addressing the immediate challenges but also emerged as a vital part of the medium- and long-term solutions. Social dialogue is expected to play an even more important role in helping governments, working hand in hand with employer and worker organizations, to frame the appropriate policies for managing the deep and rapid transformations

(continued)

at play today in the world of work and ensure a just transition towards more sustainable economies and societies, in line with the 2030 Agenda for Sustainable Development.

In this regard social dialogue and collective action by social partners are not just important tools for supporting human development; they are also foundational pillars for revitalizing the social contract, as laid out by the UN Secretary-General in Our Common Agenda.[1] By boosting confidence in democratic governance, promoting equality in opportunities and outcomes and ensuring social peace and prosperity, social dialogue contributes to rebuilding trust in public policies and institutions of work. It stands as an inclusive process for engaging diverse stakeholders, enabling participation in decisionmaking and guaranteeing fundamental rights at work, while extending protections to all.

Note

1. United Nations Secretary-General 2021.

social norms that are biased against the rights of and opportunities for groups of people hinder collective outcomes and hurt human dignity. Social norms biased against women and girls are an example. They are also threats to human security, not allowing some to live lives of dignity, representing an instance of what Amartya Sen would call "clearly remediable injustices."[47] Injustice can also be determined against widely agreed consensuses, such as the 1948 Universal Declaration of Human Rights or in the UN Charter and the corpus of international law, including "soft law" (agreements such as the 2030 Agenda for Sustainable Development).

Still, despite these normative and aspirational consensuses, social norms—along with policies and institutions—matter in how they are implemented and pursued. For example, gender social norms can either advance or curtail agency.[48] To see how, note how at the beginning of the 20th century, women in most countries were officially prohibited from participating in various societal roles, ranging from owning property and attending universities to engaging in politics. Women's agency gaps were stark and widespread. Throughout the 20th century extensive reforms worldwide recognized the equal legal, social, economic and political rights of women and men.[49] Although women in many countries still face legal restrictions affecting their agency, the progress in institutional reforms has been remarkable. Agency gaps encoded in formal laws have tended to disappear. The legal right to vote in elections—a basic expression of political agency—serves as a visible example of this evolution.

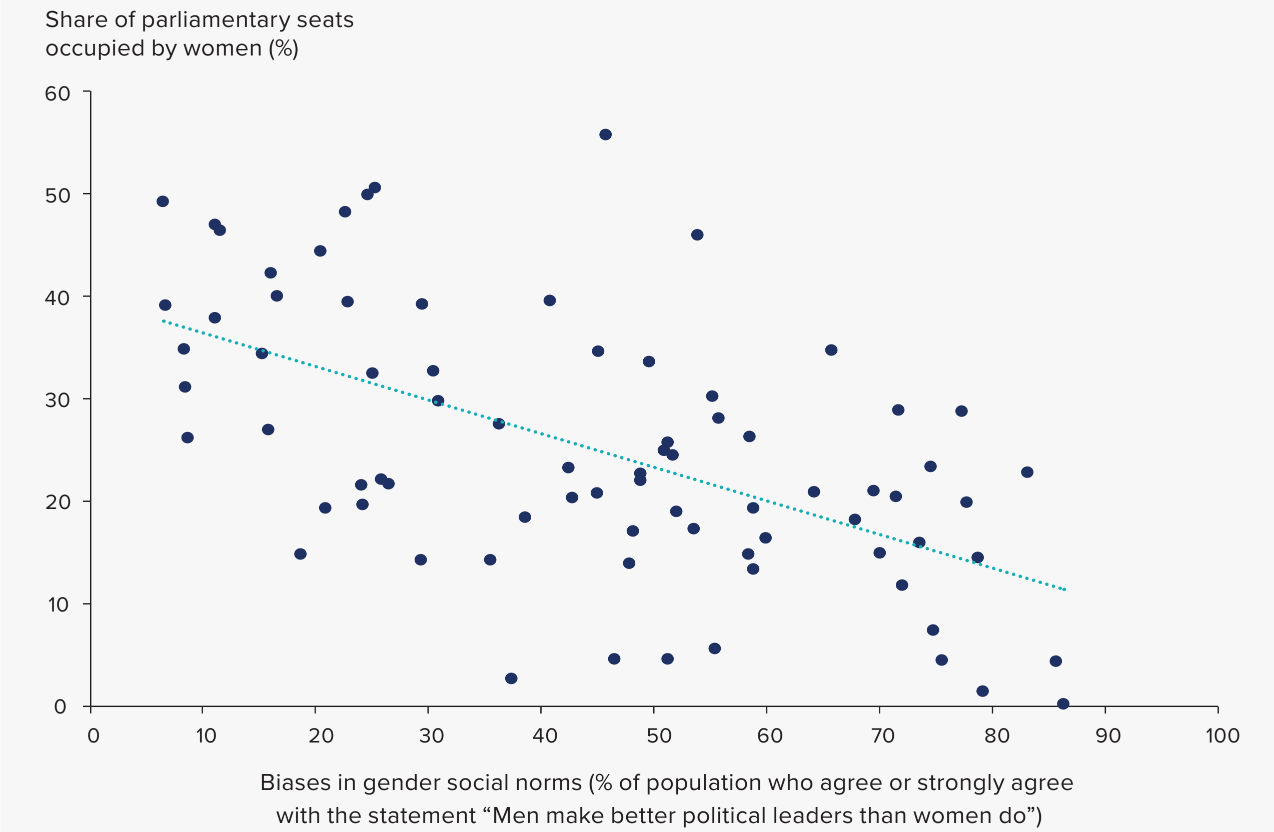
However, the effective agency of women remains restricted in many areas. A notable example is women's access to top political office—the pinnacle of political agency. Women serve as heads of state or heads of government in only about 10 percent of countries, a share little changed in recent decades.[50]

The 2023 Gender Social Norms Index, which treats biases as deviations from global shared standards of gender equality, shows that gender equality is being constrained by social norms biased against women.[51] Almost half of people believe men make better political leaders than women.[52] And biased norms might be so entrenched that women who occupy high political offices are judged more harshly. These biases permeate voting booths, interview panels, board meetings and more, limiting women's agency (figure 5.13). Simultaneously, they diminish our collective potential by perpetuating inequalities, excluding a diverse range of perspectives and experiences from public discourse and fostering further misperceptions and divisions.

When social norms suppress agency, they hinder broader processes of collective action by obstructing participation and cooperation—and exacerbating inequalities and divisions. Biased gender social norms can limit the effectiveness of policies[53] and curb women's agency—even when policies for gender equality are in place.[54] Fostering more equitable gender norms, where women are seen not just as beneficiaries of development interventions but as active agents of change and contributors to addressing shared challenges, allows for tapping into women's creative potential and boosts the diversity of ideas that can enhance collective action.[55]

Achieving equal rights and opportunities for women and men and dismantling harmful gender stereotypes advances the wellbeing and agency of everyone,

Figure 5.13 **Biased gender social norms limit women's political agency**



Source: Human Development Report Office based on data from wave 7 (2017–2022) of the World Values Survey (for biases in social norms) and data from the Inter-Parliamentary Union (for the share of parliamentary seats occupied by women in 2021). See also UNDP (2023a).

regardless of gender identity and expression. Redressing biased gender social norms can generate collective outcomes that go beyond directly improving the conditions of those excluded.[56] For example, peace processes that explicitly include women not only uphold women's human rights and strengthen their agency but also are more likely to result in comprehensive and durable peace agreements.[57] Close links between female peace agreement signatories and civil society groups, grassroots movements and other networks facilitate more bottom-up influence and local ownership over peace agreements and can enable inclusion of agreement provisions that address inequalities and power imbalances[58]—which are often among the root causes of violent conflicts.[59] Because women, still today, remain largely absent from formal peace processes,[60] advancing gender equality and opening spaces for more women to participate in these processes represent a huge potential peace dividend for societies at large.

A gender lens can help identify opportunities to advance collective action. Consider pandemic prevention and response, which require collective action at scale. Applying a gender lens implies recognizing and addressing gender differences in the global burden of diseases, as well as potential gendered impacts of response measures. For example, while men were at higher risk of dying from Covid-19,[61] the measures to contain the Covid-19 pandemic in many cases hit women harder, as they generally suffered higher job and income losses,[62] increases in domestic violence[63] and declines in mental wellbeing.[64]

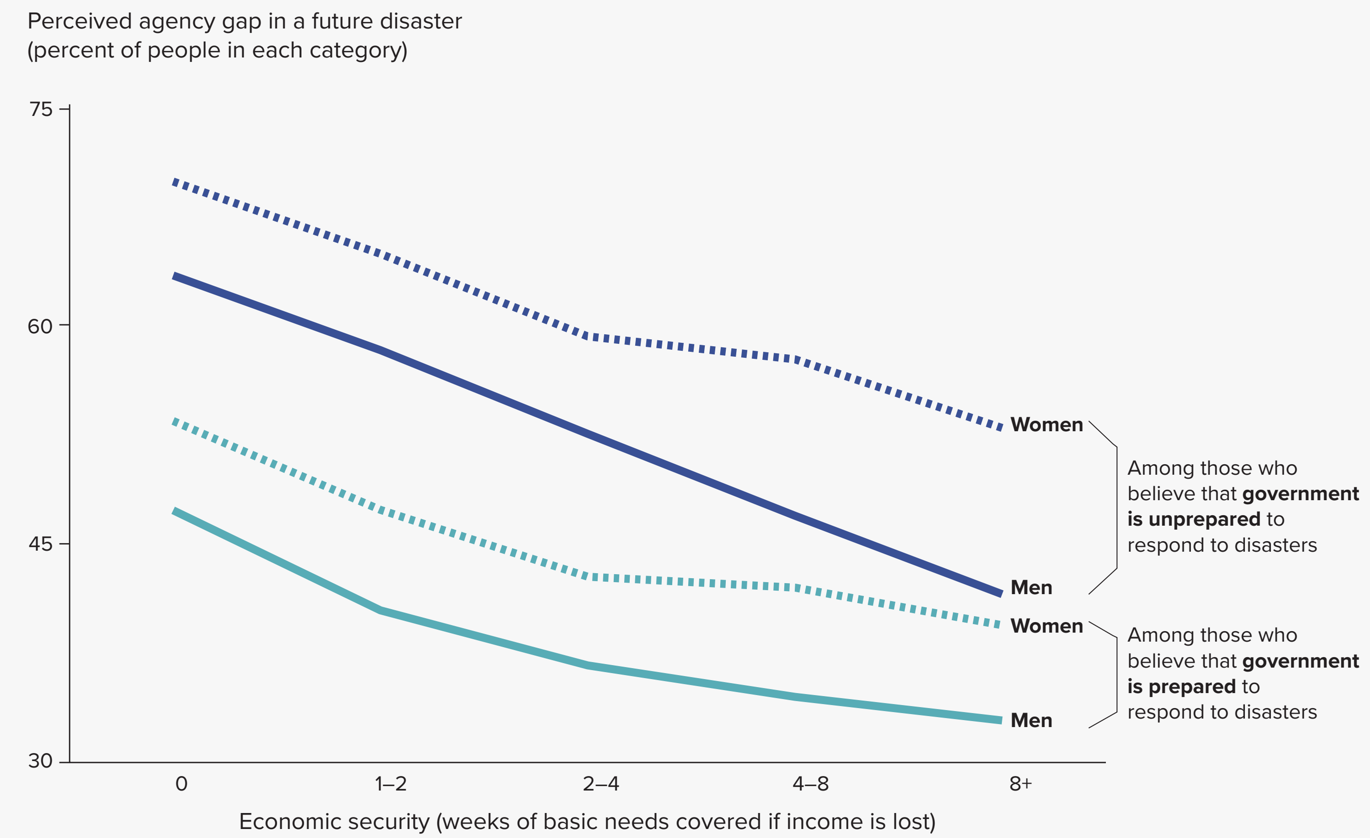
While social norms are often contrasted with formal institutions and laws, they are always interacting with formal institutions, sometimes in mutually supportive ways and in other cases in tension. Recognizing how social norms may be curtailing agency, and identifying the mechanisms that can trigger norm changes towards enhanced agency, can inform options to advance collective action. As the discussion on gender social norms shows, pinning all hope on formal institutions can be ineffective and even backfire if social norms are ignored.[65]

Women also feel less able than men to protect themselves or their families in the face of a future disaster. This can be interpreted as another agency gap, affecting 53 percent of women and 44 percent of men globally.[66] In addition to the fact that this agency gap is higher for women than for men, other patterns identified in this chapter emerge again: the higher the level of (economic, in this case) insecurity, the higher the agency gap, and belief that the government is unprepared to respond to disasters is associated with higher agency gaps (figure 5.14). This points directly to ways of narrowing agency gaps: eliminating gender inequality, strengthening national institutions' preparedness to respond to disasters and redressing insecurity. The discussion on disasters, specifically, also has relevance as we go deeper into the Anthropocene, given that unfolding processes of dangerous planetary change are likely to make disaster preparedness and response all the more relevant.[67]

Institutions to bring collective action to scale—people-centred, co-owned and future-oriented

Institutions can link agency with collective action at scale. With global interdependence being reshaped, narrowing agency gaps would be a way to pursue enhanced collective action. Narrowing those gaps involves promoting human security, redressing

Figure 5.14 Gender inequalities in agency gaps in facing future disasters are pervasive



Note: Perceived agency gap in a future disaster is measured as people not responding affirmatively to the question, "Could protect yourself or family in a future disaster?" Government preparedness is measured by the response to the question, "Is the national government well prepared to deal with a disaster?" Economic security is proxied through the number of weeks that a household could cover basic needs if income was lost.

Source: Human Development Report Office, based on data from Lloyd's Register Foundation and Gallup (2022).

inequalities, promoting social norms for cooperation and widening and strengthening spaces for deliberation.

"Institutions would be better placed to support collective action at scale if they were people-centred, co-owned and future-oriented

To this end, institutions would be better placed to support collective action at scale if they were able to fulfil three core functions: being people-centred, co-owned and future-oriented.

- People-centred is about placing the enhancement of human development (including wellbeing and agency) as the ultimate goal, which includes also advancing human security.
- Co-owned is about the real and perceived fair distribution of the power to set collective goals, of responsibilities to pursue them and of the resulting outcomes.
- Future-oriented is about not only ensuring that future generations will have the ability to advance their human development but also putting in place mechanisms that are more predictable in enabling people to navigate an uncertain and volatile world (spotlight 5.2).[68]

These functions match the framing of beyond income, beyond averages, beyond today put forward in the 2019 Human Development Report.[69]

To illustrate what pursuing these functions would mean in practice, the chapter concludes by analysing what might be missing to support the provision of global public goods—and a perspective on ongoing and perennial debates about the evolution of multilateral institutions.

Building an institutional architecture to enhance the provision of global public goods

Development cooperation is premised on a dichotomy of so-called developed and developing countries, reflecting the aspiration to narrow the great divergence that emerged in the aftermath of the Industrial Revolution and has framed development thinking and practice since the middle of the 20th century.[70] Development finance evolved to support developing countries in converging, with finance channelled though both bilateral and multilateral means and comprising both capital and transfers from or guaranteed by developed countries. Development finance —such as official development assistance, including humanitarian funding—remains essential and insufficient. But it is clear, as expressed in the 2030 Agenda for Sustainable Development, that there is a need to look at universal aspirations beyond this dichotomy. One way of giving expression to those aspirations is recognizing the need, in an interdependent world, to enhance the provision of global public goods. And that implies building an institutional architecture to support the endeavour.

Providing global public goods is consistent with the three institutional functions proposed in this chapter. Their pursuit is people-centred, given the losses in human development and exacerbation of inequalities associated with their underprovision.

Given that global public goods are nonrival and nonexcludable at the global scale, institutions geared to support their provision are consistent with being co-owned. Outcomes matter, but so does the process of provision. And global public goods leave legacies well into the future, as with the eradication of smallpox, the mitigation of climate change and the introduction of a novel technology. So, their pursuit is often intrinsically future-oriented.

To elaborate further on how the three functions interplay with providing global public goods, consider how enhancing the capabilities of different countries or groups to contribute to global public goods is both an outcome and a process that matters intrinsically.

They matter because perceptions of fairness, or lack thereof, can stand in the way of providing global public goods (chapter 3).

Often, fairness and the expansion of capabilities work together. Indeed, one way of demonstrating that efforts to enhance the provision of global public goods can also advance equity is by showing that transferring resources and technologies to enhance the provision of global public goods often has national and local benefits in the recipient country.[71] For instance, international assistance to fund a renewable energy project in a low-income country with the aim of mitigating climate change can reduce local pollution and generate jobs.[72] These ancillary national benefits not only enhance equity—they also enhance efficiency by increasing the aggregate benefits of enhanced global public good provision.[73] They are, however, typically neglected in policymaking associated with global public good provision, such as climate change mitigation,[74] for which the policy debate often emphasizes costs of mitigation.[75]

At the same time it is important to recognize that supportive policies in high-income countries for outcomes that seek to advance global public goods can have globally beneficial outcomes. In the mid-2000s both Germany's Energiewende and the California Solar Initiative in the United States provided generous benefits for solar installations at substantial short-term cost.[76] These subsidies led firms around the world, including those outside high-income countries, to innovate more, reducing prices and increasing adoption of solar panels elsewhere.[77] In addition to this induced innovation effect, subsidies also led to cost reductions through learning by doing and economies of scale.[78] While learning by doing and economies of scale can largely be appropriated by firms,[79] the subsidies were key because (in the absence of carbon prices that internalize the externalities of greenhouse gas emissions) they stimulated production that likely would not have happened otherwise due to underpriced fossil fuels.[80] These examples illustrate how subsidies for technologies in a few high-income countries can result in global spillovers, reaching low- and middle-income countries.

> "Co-ownership can considerably enhance the social valuation of global public goods, recognizing them as shared achievements worldwide

Co-ownership can considerably enhance the social valuation of global public goods, recognizing them as shared achievements worldwide. The value and sustainability of global public goods may hinge on their impact and on mechanisms that foster public participation in their provision. If these mechanisms are co-owned, they are more likely to empower people to both contribute to and celebrate these achievements. As Martha Nussbaum points out, the social room for deliberation should be not only a safe space for criticisms and dissenting voices but also a nurturing ground for devotion to ideas that embody an overlapping consensus, which the pursuit of providing global public goods can be mobilized to deliver (chapters 4 and 6).[81]

Recognizing that global public goods have both domestic and global benefits has important implications for institutional design, including the support of international cooperation. For example, in climate change mitigation acknowledging the co-benefits of global public goods tends to bolster domestic support for participating in international agreements. Such participation generates benefits at the global and national scales[82] and may increase the likelihood of forming a robust coalition to combat climate change.[83] Providing support to countries in health-related weakest-link or best-shot global public good initiatives can yield substantial national and regional benefits.[84] Moreover, there can be synergy in flows aimed at advancing local or national public goods that cumulatively contribute to a global public good. International efforts to support biodiversity in African countries, for instance, can complement tourism revenue. Both revenue streams support local conservation efforts, generating biodiversity benefits nationally and globally.[85]

The flip side of co-benefits is that if domestic investment is motivated exclusively by benefits that accrue within borders, there may be underinvestment from a global perspective. At the same time it might not be reasonable to expect low- and middle-income countries, which are more likely to be resource constrained than high-income countries, to incur the additional cost that may be needed for global benefits to emerge. The economics from the national perspective may be such that it is not feasible for a country to invest in renewable energy. So, the international community could provide the funding for the incremental cost that results in generating global benefits. This is one way of interpreting existing financing arrangements that support the provision of global public goods, such as the Global Environment Facility.[86] The logic of financing this incremental cost could be extended to the support of global public goods beyond the environment, in most cases in the form of fully concessional financing.[87]

Several of the most promising opportunities for global public goods might be in low- and medium-income countries, where some mitigation projects (with global benefits) might be privately profitable. But even in those cases the projects are rarely implemented, because of regulatory challenges, a lack of capital or volatility (real or perceived).[88] So projects with global positive externalities face the prospect of underinvestment.

Being future-oriented implies thinking about financing that addresses volatility, which can both attract private financing and make public finance countercyclical. In fact, in a volatile world countries are subject to shocks not of their own making, such as climate-related disasters, pandemics or global financial crises. These shocks often reflect the underprovision of global public goods and leave low- and middle-income countries on the receiving end of having to deal not only with the immediate costs but also with servicing the debt incurred to finance, for instance, infrastructure that may have been wiped out in a tropical cyclone. As the ongoing experience with high debt burdens in low-income countries in the aftermath of the Covid-19 pandemic illustrates, there is no predictable way for countries to collectively agree on how to deal with the challenge.

> “Being future-oriented implies thinking about financing that addresses volatility, which can both attract private financing and make public finance countercyclical

One way to have a future-oriented approach is to provide financing through instruments that include state-contingent clauses that pause or defer debt service payments when countries face of shocks resulting from climate change or pandemics (spotlight 5.3).[89] This would increase the ability of low- and middle-income countries to contribute to providing global public goods even in the aftermath of external crises—to the benefit of all. These measures require coordination (if these financing options that carry an insurance element are more expensive than “plan vanilla” options) and enhanced capacity to allocate resources that may include a large share of concessional financing.[90]

Identifying gaps in existing multilateral institutions

Multilateral institutions have supported international cooperation and advanced welfare in several other ways.[91] But there is perennial debate about the need to have these institutions evolve.[92] How can they be designed to meet the three functional goals of being people centred, co-owned and future-oriented?

While nominally people-centred, multilateral institutions often have a limited or partial recognition of the pursuit of human development as an explicit goal. International financial institutions and parts of the UN system continue to invest considerable resources in estimating and projecting indicators associated with economic performance. This is very important and needed, but it sometimes is used and interpreted as defining the whole of development prospects and aspirations of people. Thus, the UN Secretary-General’s emphasis on moving “Beyond GDP” aims at restoring a balance on how development progress and policies are assessed, beyond averages at the country level.[93] For instance, from the perspective of multidimensional poverty, nearly two-thirds of people in acute multidimensional poverty (730 million) live in middle-income countries.[94] This agenda offers the prospect of enhancing policymaking to address the multidimensional nature of human development as advocated in Human Development Reports over the years.[95]

Gaps in co-ownership are manifest in the continuation of the governance arrangements through written and unwritten rules that reflect a legacy of the distribution of power in the immediate aftermath of World War II. This extends from international financial institutions to the United Nations, with several proposals over the years to redress the lack of representative governance arrangements.[96]

Co-ownership implies a fair distribution of the burden of government action, avoiding inequalities resulting from tax avoidance and evasion. Over the past decade there has been progress in controlling tax evasion, mainly through increased information and transparency around the world.[97] And there has been extensive cooperation through the Organisation for Economic Co-operation and Development/Group of 20 Inclusive Framework on base erosion and profit shifting, with the participation of 140 countries and jurisdictions. A recent international tax reform changes the rules for tax jurisdiction and imposes a global 15 percent minimum effective corporate income tax, which is expected to collect \$150–\$200 billion a year.[98] To facilitate policy coordination on these issues, the UN General Assembly has started the process for a Framework Convention on International Tax Cooperation.[99] Global minimum tax rates do not have to be very large to raise substantial sums if they are well enforced.[100] Enforcement is largely a policy choice and hinges on international coordination. For example, leveraging new technologies and advancing regulation that allowed automatic information sharing between banks and financial institutions helped speed progress against tax evasion.[101]

Trust and social norms also determine tax compliance, and policies that target these aspects can complement incentives and enforcement, such as taxpayer education and information programmes and stronger public services (see spotlight 4.4 in chapter 4). A future-oriented approach can contribute to a process of reform and effectiveness. The United Nations and the international financial institutions were created cognizant of the need to manage global interdependence (see spotlight 2.1 in chapter 2), objectives still valid today. But there is now greater recognition of the challenges of a planet undergoing dangerous changes and of interdependence being reshaped as we go farther into the Anthropocene.[102] An explicit focus on providing and financing global public goods could also strengthen a future-oriented focus of multilateral institutions —facilitating a push for investment, insurance and innovation.

Strengthening social cohesion to mitigate human insecurity: Promise and peril

Julia Leininger, Armin von Schiller and **Charlotte Fiedler,** *German Institute of Development and Sustainability*

With growing human insecurity and polarization, policymakers have shifted attention to the resilience of societies. The United Nations Development Programme (UNDP), for example, emphasizes solidarity as an essential building block for addressing universal challenges.[1] "Social cohesion" stands out as a buzzword in these discussions and is often suggested as a cure for many development problems and for the unintended consequences of development efforts.

In particular, social cohesion is praised for its alleged role in mitigating tensions, dealing with shocks and enabling productive cooperation for the common good. As such, social cohesion, understood as the glue that holds societies together, has been declared in policy and academic discussions as a precondition for sustainable and inclusive development. Fostering but also protecting it are now high priority goals in policy documents and in international cooperation. The Covid-19 pandemic accelerated this trend.

But is social cohesion a cure for the apparent dichotomy of human development with human insecurity?[2] As many governments and international organizations launch or scale up campaigns to promote social cohesion in societies—among groups or between citizens and public institutions—it is time to ask what we know about the relevance of social cohesion for supporting human development and reducing human insecurity. Also, what are the leverage points for policy action, and what is the effectiveness of currently applied measures?

Social cohesion for human development

Social cohesion is not a panacea, but there is proof of its relevance for human development and, thus, human security. One of the most important yet barely recognized values of social cohesion is as the foundation for societies to reach agreement on what a common good is in a particular context and who gets a share of it. Where polarization divides societies, opposing groups develop unbridgeable disagreements over issue-oriented questions such as the right pandemic measures (for example, Covid-19 vaccines) and over shared values such as the right to live.

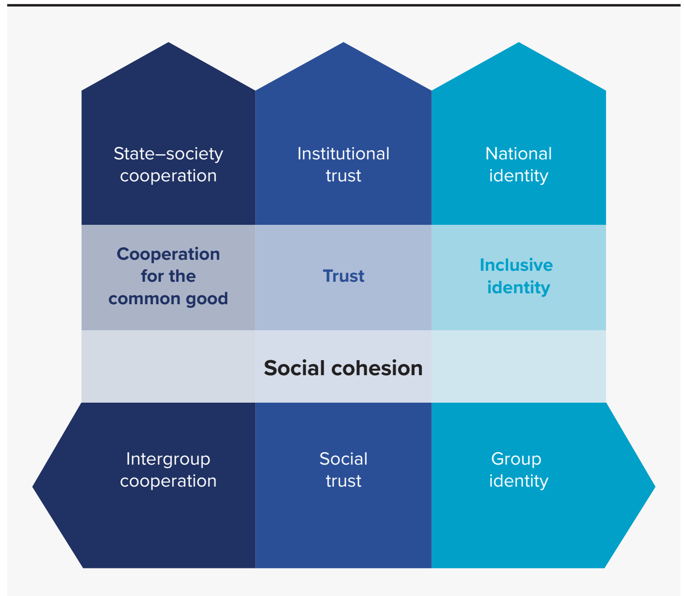
Evidence on development outcomes indicates positive effects of social cohesion on a variety of indicators. Overall, social cohesion correlates positively with human development, as measured by the Human Development Index, in Organisation for Economic Co-operation and Development members[3] and in Asian countries.[4] However, such macroanalyses also indicate that human development affects social cohesion more than vice versa. Interestingly, social cohesion's effect on human development increases further when mediated through state legitimacy.[5] This underlines that social cohesion is independent of a country's income level.

One of the richest pools of evidence for the relevance of social cohesion for human development is its relationship with health. Evidence for 39 US states indicates that social cohesion, measured as social trust and membership in voluntary organizations, fosters mental as well as physical health, even moderating the effect of income inequality on increased mortality.[6] Most studies focus, however, on individual elements of social cohesion and their relationship with health. For example, social trust has a positive impact on health, but the intensity of the impact varies considerably with a country's socioeconomic development: the impact is much stronger in developed countries than in developing countries.[7] Also related to social cohesion, disinvestment in social capital is related to higher mortality rates.[8] Social cohesion also matters for effective decisionmaking and people's solidarity.[9] This mechanism is key in times of crisis: where societies are cohesive, governments can assume that their policies enjoy public confidence[10] and that individuals show unity with each other when facing collective problems.[11]

Social cohesion has a direct positive effect on GDP, particularly in western and Asian countries.[12] Less comprehensive analyses of social cohesion suggest that it has a positive effect on GDP because of the huge economic costs of interracial conflict and war or because it facilitates the emergence of better institutions such as a strong judicial system and freedom of expression.[13] However, these insights are based on broader measures of social cohesion that include indicators such as ethnic fractionalization. Overall, there is very little cross-country evidence on the relationship between social cohesion and economic development.[14]

More cohesive societies—particularly societies where citizens trust and are willing to cooperate with state institutions—could be expected to be better positioned to more effectively deliver basic services such as education. But most attention has been drawn to the opposite direction of the relationship: from education to social cohesion. In particular, universal education can contribute to social cohesion by reducing inequality and by creating "strong social bonds among different groups in a society."[15]

Figure S5.1.1 Proposed elements of social cohesion



Source: Leininger and others 2021.

Strengthening social cohesion for cooperation

To some degree the salience of the concept of social cohesion and its proven relevance for development masks conceptual and empirical challenges. Social cohesion is to many an elusive concept, and indeed, how it is defined, used and measured varies widely among those using it. That makes it essential to specify what social cohesion is if it is to feature prominently in policy discussion and design. In particular, conceptual clarity is essential to enable exchange on strategies to foster this key foundation of the social fabric in every society and aggregate existing knowledge on how best to do that. A useful and usable concept of social cohesion enables a global exchange, structures policy thinking and aggregates existing knowledge.

The following understanding of social cohesion builds on common denominators in research (figure S5.1.1). The starting point is the consensus that social cohesion is multidimensional. Furthermore, we need a concept that travels across levels and contexts and is therefore as effective in characterizing small communities in all regions as characterizing transnational contexts. While the concept needs to be capable of traveling across world regions, its measurement might vary with the context. In any case such an aggregated measure does not substitute for an analysis of the particularities of social cohesion in specific contexts.

In addition, it is essential to keep the concept lean if it is to be instrumental in analysing relationships with other development outcomes, such as human development or inequality. Based on this reasoning, we propose the following definition:

> "Social cohesion refers to the vertical and horizontal relations among members of society and the state that hold society together. Social cohesion is characterised by a set of attitudes and behavioural manifestations that includes trust, an inclusive identity and cooperation for the common good."[16]

Trust often appears in conceptualizations of social cohesion. Used here, it includes social and institutional trust and thereby captures both the horizontal and the vertical dimensions of trust.[17] Inclusive identity reflects that individuals can feel that they belong to multiple groups and thus have several identities (religion, ethnicity and gender, for example). A socially cohesive society implies that individuals with different identities tolerate these differences and can coexist peacefully, so particular identities do not dominate the overall collective identity. Cooperation for the common good means that many people and groups cooperate for public interests that go beyond —and sometimes even conflict with—those of the individuals involved.

Although there is a common sense that social cohesion is more than the sum of its parts, scholars often study its parts individually, and policymakers address discrete parts of it. Most often the focus lies on trust. The concept of social cohesion proposed by the German Institute of Development and Sustainability[18] enables focusing on particular elements and identifying specific weak spots to concentrate on, but structurally it demands conceptualizing these analyses within the broader concept and phenomenon of social cohesion. In this approach trust is important, but it is only one part of the whole. It is important to analyse the other attributes as well as the interactions and synergies between them. But more important, to determine how socially cohesive a society is at a given (measured) time and how social cohesion evolves over time, it is necessary to analyse all of its parts, understanding that not all dimensions will develop in parallel.

Behind the bright light is a dark side of social cohesion

It is also necessary to acknowledge that despite its relevance, social cohesion does not necessarily adhere to the simplistic claim that more is always better. Knowing how social cohesion interacts at different levels, how it is used and how it is constructed is essential to avoid highly cohesive subgroups instrumentalizing social cohesion as a platform for exclusion. Social cohesion does not have only a rosy side.

Social cohesion as fuel for polarization

Social cohesion can be easily interpreted as an equalizer, forcing homogeneity on societies. This is a particularly salient issue in the context of the recent global trend towards autocracy. Nationalist political elites have been using polarization strategies to divide societies and increase their own power. These attempts—often successful—pursue an us-versus-them rhetoric, which defines criteria for "good citizens" and sets them apart from other groups who are "out." While this has created cohesive groups, it has also fostered unbridgeable divides over certain issues. Strengthening social cohesion requires understanding that the social fabric is sustainable only if it tolerates differences.

And this brings us back to the idea of solidarity as presented in UNDP's 2022 Special Report on Human Security.[19] It is about our capacities as human beings who constantly act collectively at different levels to face shared challenges together, such as the effects of climate change or health crises.

Disregard for scale and space can lead to unintended effects

Social cohesion suggests a peaceful social togetherness. Although it can be seen as a function of peace, it has an important discrete meaning. Conceptual distinctions are important because they have critical policy implications. For example, strengthening social cohesion within local groups might increase their togetherness. At the same time fostering bonds within a particular group can have countereffects if the within-group togetherness makes it difficult to bridge conflicts between that group and others.

There are risks to enhancing social cohesion for the sake of cohesion without identifying the basis for the common identity, trust and cooperation, as well as its goals. Social cohesion manifests on different interacting levels (from local to global) and in various spaces (communities in different locations or online spaces). Connecting levels and spaces is thus key for allowing the bright side of social cohesion to shine.

Looking at the bright side

With its potentials and its risks, social cohesion is rightly on national and international agendas. Increased attention to social cohesion comes at a time when polarization has been eroding it and human insecurity has intensified in all parts of the world. Recovering and rebuilding social cohesion are difficult once it has been damaged or lost. In this way it is not different from other positive types of human relationships: we often become aware of them only after they have been substantially weakened.

Using the concept of social cohesion to carefully think through how best to foster cohesive societies and limit polarization is a good starting point for international cooperation and policymaking at a time of increasing challenges. Social cohesion is both an explicit goal and a precondition for effective cooperation at all levels. In this sense it is wise to ensure that discussions are conceptually sound and that our still-fragmented knowledge is properly and efficiently aggregated to enable governments and international organizations to effectively engage on this topic. At all levels we face problems and crisis that must be addressed, navigated and solved collectively. Social cohesion explicitly addresses this collective dimension that so far has been highly underestimated.

NOTES

1. UNDP 2022b.
2. UNDP 2022a, 2022b.
3. Dragolov and others 2013.
4. Delhey and others 2018.
5. Seyoum 2021.
6. Kawachi and Berkman 2001; Kawachi and others 1997.
7. Hamamura, Li and Chan 2017.
8. Kawachi and Kennedy 1997.
9. Leininger and others 2021.
10. Abrams and others 2020; Wilkinson and others 2017.
11. Green and Janmaat 2011.
12. Delhey and others 2018.
13. Easterly, Ritzen and Woolcock 2006; Foa 2011.
14. Sommer 2019.
15. Uslaner 2019, p. 4.
16. Leininger and others 2021, p. 3.
17. Mattes and Moreno 2018.
18. Leininger and others 2021; Leininger and others 2023.
19. UNDP 2022b.

SPOTLIGHT 5.2

Solidarity and creative resolve

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How can we respond to the challenges of our times? This spotlight argues that solidarity and creative resolve can help overcome the threats to human development associated with mismanagement of interdependence and underprovision of global public goods.[1] Solidarity is "a sympathetic and imaginative enactment of collaborative measures to enhance our given or acquired relatedness so that together we fare well enough."[2] It requires empathizing with others and recognizing the ways in which we are interdependent and related.[3] Often solidarity also requires creative resolve: a fundamental commitment to overcoming apparent tragedy together.[4] More precisely, creative resolve requires us to question, imagine and act to promote human development insofar as necessary, possible and otherwise permissible.

Consider each component of this resolve in turn. First, creative resolve requires questioning limits to the possibility of promoting human development. We must question the claim that we cannot promote human development, as well as our background beliefs about what we can do. What questions we must raise will depend on the nature of the claims—we might question their reliability, source or implications. Second, this resolve requires seeking out creative ways of promoting human development, even when we do not yet know how to do so. It is not enough to consider existing options; we must often put new options on the table.[5] Finally, creative resolve requires acting on plans to promote human development, often through social movements or by helping change policies or institutions.[6] At least, we must strive to promote human development in this way as long as that does not require sacrificing anything more significant.

Solidarity and creative resolve can help in responding well to shared challenges together. Unlike mere teamwork, solidarity connects those on opposite sides of the planet in recognition of the fact that we are all vulnerable and interdependent and engages us in building the valuable relationships that promote development.[7] Unlike mere perseverance, creative resolve helps people think outside the box and reveals opportunities for addressing some of the most difficult, and seemingly tragic, problems of our time. Unlike mere problem solving, solidarity and creative resolve require us to put our commitment and cooperation into action to address difficult problems.[8]

Reflecting on how solidarity and creative resolve have helped people address major challenges to human development in the past may help us overcome substantial threats in the future. Consider the smallpox eradication campaign (chapter 3). The campaign was creative and resolute. When traditional vaccinations did not work, the global smallpox eradication programme tried ring vaccination—vaccinating all the people around those who were infected—which eventually helped conquer the disease.[9] The fact that smallpox was eradicated globally during the Cold War shows that solidarity and creative resolve can spur international cooperation to overcome some of the greatest threats to human development, even when countries face disparate interests and resources.

Contrast the global fight against smallpox with the international response to the Covid-19 pandemic (chapter 3). When the pandemic first swept across the globe, the World Health Organization (WHO) issued a solidarity call to action to realize equitable global access to Covid-19 health technologies through pooling of knowledge, intellectual property and data.[10] The Access to Covid-19 Tools Accelerator—a platform for international support for addressing the disease—helped coordinate the global response. The platform supported diagnostics, vaccines, therapeutics, equitable access and basic health systems development.[11] Although the COVID-19 Vaccines Global Access facility (better known as COVAX)—or vaccine arm of the global response—was the best funded, it failed in its aim to vaccinate 20 percent of the world by the end of 2021.[12] Vaccine nationalism in high-income countries and profit-driven neglect of global equity stymied this effort.[13]

Consider how we might better prepare for, and respond to, future pandemic threats with solidarity and creative resolve. First, the international community should come together and create new funding mechanisms for vaccines and other essential countermeasures. But this funding should be conditional on companies sharing the knowledge, data and intellectual property rights needed to produce resulting products. So, when supply is limited, manufacturers can produce the technologies at low cost and distribute them widely.[14] Moreover, funding should be tied to the health impacts of resulting technologies. While there is considerable development of new drugs for affluent patients, inadequate treatments exist for several of the world's worst killers, and often the global poor cannot access the treatments that do exist in a timely manner.[15] Paying for essential countermeasures based on health impact could incentivize the provision of more impactful technologies. The incentives might consist of advance market commitments for companies with sufficient manufacturing capacity or prize funds for those without such capacity. They should be sufficient to cover the costs of research and development and ensure equitable access to the resulting products for all. Second, the international community should facilitate transparent, accountable, collective procurement and differentially price the resulting innovations, charging market prices in rich countries to recoup investment costs while subsidizing distribution in low- and middle-income countries.[16]

Collective procurement and differential pricing may also help us acquire the resources to implement other measures to ensure equitable access to resulting products. The international community must, for example, invest in improved manufacturing, distribution and basic health systems, including monitoring and response capacity, healthcare workers, and transparency, communication and community engagement activities.[17] Moreover, the international community must support other technology transfer initiatives. For instance, countries should exercise flexibilities in the Agreement on Trade-Related Intellectual Property Rights and support much more extensive patent waivers in future pandemics if companies are unwilling to make existing essential technologies needed to combat these threats available to all on reasonable terms.[18]

Some argue that solidarity and creative resolve cannot help the international community promote human development and that proposals along the above lines simply are not feasible, but what we can achieve together is up to us.[19] We should refuse to accept the claim that determining our collective fortunes and promoting human development for all is impossible.[20]

Solidarity and creative resolve can help us come up with and implement effective responses to a variety of threats beyond global pandemics—including climate change, financial crises and war. Moreover, when good ways to address threats to human development exist, solidarity and creative resolve can help the international community cultivate the political will needed to implement them. To address existential threats such as climate change, we do not just need to create incentives for making the green energy transition, to implement better land and water use policies and so forth.[21] We need ways of getting people to think differently about their moral obligations.[22] If people think that they do not have to act in environmentally sustainable ways because their individual action will not make a difference, humanity holds little hope of overcoming the kind of collective action problems we need to overcome to combat climate change. So, we may have to focus our creative efforts on making the case that we should see ourselves as bound to promote human development for all whenever we can achieve positive change together. Solidarity and creative resolve can give us hope and help us make meaningful progress in addressing the shared global challenges we must overcome to flourish on a changing planet.

NOTES

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1. Ba and others 2021, pp. 391–392.
2. Atuire and Hassoun 2023, p. 4.
3. Atuire and Hassoun 2023; Hassoun 2021c, 2022. This is compatible with using market mechanisms to achieve positive change, but solidaristic efforts might also employ other methods that require changing the ways markets function. For other interpretations of solidarity, see Davies and Savulescu (2019) and Gould (2018).
4. Hassoun 2020.
5. Those who fail to have creative resolve may believe that the status quo is acceptable or think that it is impossible to change. However, there is substantial psychological evidence that people do not consider enough alternatives in decisionmaking and that when we imagine ourselves succeeding in tasks, we are more likely to do so (Bearden, Murphy and Rapoport 2005; Braithwaite 2004; Snyder 1995, 2000). It is important not to take too narrow a view of feasibility or possibility, assuming tight time frames or financial constraints (Brennan and Pettit 2004; Goodin 1995). Many other virtues and capabilities are necessary for creative resolve, and cultivating it may require practice in favourable conditions. For further discussion, see Hassoun (2022) and Hassoun, Friedman and Cosler (2022).
6. Gould 2018; Hassoun 2020. Creative resolve can also help us secure other essential moral goods; for further discussion, see Hassoun (2020) and Hassoun, Friedman and Cosler (2022).
7. Hassoun forthcoming.
8. Hassoun 2022.
9. Hassoun 2020, 2022.
10. WHO 2021b.
11. WHO 2021a.
12. Berkley 2020.
13. Hassoun 2021a.
14. Atuire and Hassoun 2023; Basu, Gostin and Hassoun 2021; Conrad and Lutter 2019; Hassoun 2021b; Miller 2020; Saxena and others 2022.
15. Hassoun 2020; Hassoun, Friedman and Cosler 2022.
16. Basu, Gostin and Hassoun 2021; Moon and others 2011; Saxena and others 2022. Companies and international organizations sometimes use tiered pricing, but here the idea is to provide rich as well as poor countries access to medicines at reasonable costs for their contexts through a global procurement mechanism. Moreover, doing so has the potential to save companies and countries money (as pharmaceutical pricing, even for the public sector, is complex, with many intermediaries).
17. Hassoun 2020, 2021b. We must also do many other things to address the problems with our current global response plans. For instance, we must address the structural and social determinants of health to limit vulnerability and ensure adequate social protection during pandemics (Basu, Gostin and Hassoun 2021; Saxena and others 2022).
18. Basu, Gostin and Hassoun 2021; Saxena and others 2022. Any further health dividend the international community can reap from cooperating to prevent and address major pandemics might be fruitfully redirected towards promoting other aspects of human development. This proposal's novel contribution is to combine delinkage with collective procurement, differential pricing and other measures to ensure access to essential technologies during pandemics to ensure that the mechanism is self-sustaining.
19. McAdams and others 2020; Moon, Alonso Ruiz and Vieira 2021. Drawing together the overarching recommendations on addressing health threats articulated above, we might parallel the World Social Charter's suggestions in creating new, innovative institutional structures to address major global threats; creating a multilateral fund to support these structures; and enhancing efforts to set targets and evaluate performance in addressing these threats.
20. Unless, of course, doing so is impossible or will produce worse results. These limits are part of creative resolve's definition.
21. UNDP 2020a, 2020b.
22. Sen 2008.

SPOTLIGHT 5.3

The role of multilateral development banks in the provision of global public goods

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There is broad-based agreement among the United Nations and the Group of 20 (G20) and in the proposed Evolution Roadmap of the World Bank that multilateral development banks should provide financing to support developing countries' contribution to global public goods. Multilateral development banks have increased their financing for climate change mitigation and adaptation and to a lesser extent for combating pandemics and supporting biodiversity. However, the resources provided are still very small relative to what is needed. To enhance such financing, the institutions mentioned above share three recommendations.

- Increase financing to support the provision of global public goods by developing countries.
- Include contingency clauses to respond to the vulnerability of countries associated with climatological and health issues and to manage the effects of international economic crises on these countries. These clauses should allow the suspension of debt service with these institutions and even, eventually, a reduction in associated liabilities.
- Work more closely with the private sector to support its contribution to global public goods.

An essential theme of all these proposals is the need to channel concessional credits or donations through multilateral development banks. Furthermore, these benefits must also favour middle-income countries and create mechanisms that allow partial subsidies for credits to the private sector to leverage their investment in providing public goods. To make this possible, official development assistance must be greatly increased, an important challenge given the limited funds now available. Aside from concessional resources, the proposals call for longer-term multilateral development bank loans (30–50 years), with longer grace periods and lower interest rates. To manage exchange rate volatility, multilateral development banks must lend more in the national currencies of borrowing countries, based on the resources they raise, with the placement of bonds in these currencies, which would also support the development of national capital markets.

Various other financial management proposals would enhance the relationship between the financing of multilateral development banks and their capital, while maintaining the standards that allow these institutions to maintain high investment grades in bond markets. Innovative financial mechanisms are needed to leverage private investment, including guarantees and public–private partnerships.

To expand available resources, the Special Drawing Rights (SDRs) issued by the International Monetary Fund (IMF) that have not been used by developed countries could be channelled through multilateral development banks, which are already authorized to hold such assets. This will require developing a new instrument that preserves the role of SDRs as reserve assets, based on the experiences of IMF funds that have already developed such mechanisms.

One of those funds is the Resilience and Sustainability Trust, which operates as a loan-based trust. Approximately three-quarters of IMF member countries—all low-income countries, developing and vulnerable small states and lower-middle-income countries—are eligible for extended affordable financing from the trust.[1] It is strategically oriented to address prolonged structural challenges, notably those related to climate change and pandemic preparedness. Since becoming operational in October 2022, it has approved 11 arrangements through its Resilience and Sustainability Facility.

For multilateral development banks to fulfil all these functions, as well as their traditional ones, the most important element is their capitalization. Capitalizations of the World Bank in 2018 and of all multilateral development banks after the 2007–2008 global financial crisis responded to this demand. A source of uncertainty, however, is whether some major shareholders are willing to capitalize the World Bank and regional banks again.

The proposals differ considerably in the magnitude of the capitalizations required. The independent experts organized by the G20 proposed increasing the annual financing of these institutions to $500 billion by 2030, a third of which would be in official development assistance or concessional credits and the rest in nonconcessional credits.[2] Given the amount of bank approvals by multilateral development banks to developing countries, this means approximately tripling the value of their loans. UN estimates of the stimulus needed to achieve the Sustainable Development Goals (SDGs) are much more ambitious. In February 2023 the UN Secretary-General highlighted how the relationship between multilateral development bank financing and the size of the world economy was substantially reduced in the 1960s and 1970s, particularly for the International Bank for Reconstruction and Development of the World Bank Group.[3] For this reason the United Nations has suggested that a return to 1960 levels would imply a threefold increase in capitalization, enabling an increase in loans of nearly $2 trillion, an amount closer to the SDG financing gap.

Finally, it is important that multilateral development banks constitute a service network. In the case of the World Bank, this includes participating in regional projects alongside regional partners.[4] Added to this is the need for all multilateral development banks to work with national development banks and other public institutions.[5] Public development banks finance 10–12 percent of investment worldwide,[6] although with considerable differences across countries. This collaboration would allow national banks to become executors of global public goods programmes, as well as channels of information on the related financing needs of their countries.

NOTES

1. IMF 2023.
2. G20 2023a.
3. UN 2023a.
4. World Bank, 2023.
5. Griffith-Jones and Ocampo 2018.
6. UN 2023a.

CHAPTER

6

Breaking the gridlock to enhance collective action

Breaking the gridlock to enhance collective action

Polarization divides societies into belligerent and opposing camps, poisoning domestic and international cooperation.

Moving away from zero-sum thinking by providing global public goods can ease polarization indirectly.

Addressing misperceptions about issues and other groups can bridge divides and reduce perceptions of insecurity and thus ease polarization directly.

Collective action that transcends group boundaries—not within groups, such as those defined by country borders, but across groups—is paramount for managing interdependence, including through the provision of global public goods.[1] Collective action is often particularly challenging when cooperation is required.[2]

This chapter considers how heightened political polarization within countries impedes cross-country cooperation to enhance the provision of global public goods.[3] It first delves into how narrow group identification can lead to political polarization, eroding space for acting together on shared challenges. It then shows how political polarization hinders the emergence of shared narratives, beliefs and goals, diminishing the prospects for collective action. Finally, it argues that polarization is surmountable and describes pathways for breaking the gridlock.

How does political polarization come about?

Collective action is influenced by social contexts—through shared beliefs, values, social norms, worldviews, narratives and how agents see themselves and others.[4] Shared identities enhance social ties that can produce many benefits for people's wellbeing and positive societal outcomes within groups.[5] Identifying with social groups is sometimes supported by affiliation with abstract notions, such as being part of a nation.[6] National parochialism—strong cooperation within countries—is ubiquitous.[7] But global public goods require transnational collective action that transcends country boundaries (chapter 3).[8]

Identifying with a larger global community would facilitate contributions to global public goods.[9] In every society many people are inclined to care about others beyond borders.[10] Interdependence is linked with people adopting a more cosmopolitan view of the world, shrinking their perceived social distance with geographically distant others.[11] For instance, as people get exposed to greater diversity, stereotypes diminish and lead people to perceive different social groups as more similar.[12] While it is sometimes assumed that cosmopolitan attitudes are held primarily by elites, they are common across the population.[13] Yet barriers to the emergence and consolidation of beliefs and attitudes supporting international cooperation are appearing as a result of within-country political polarization, which is particularly harmful when it takes the form of affective polarization, as people favour their group even more and other groups even less.

> “Barriers to the emergence and consolidation of beliefs and attitudes supporting international cooperation are appearing as a result of within-country political polarization, which is particularly harmful when it takes the form of affective polarization

To see how, note that collective action is influenced by the way people reason about societal issues—and the beliefs, narratives, attitudes and viewpoints that they bring into public reasoning. And since many of the most pressing challenges must address the priorities of various diverse groups at once, people must transcend group boundaries and fairly consider the needs and priorities of others. To enhance collective action among this diversity of priorities and beliefs, the human development approach emphasizes the centrality of public reasoning and deliberation (box 6.1).[14]

Strong group identification can work against intergroup cooperation, particularly when the adoption of norms and values of an ingroup is based on a strong sense of identity.[15] Group affiliation also has consequences for how people form and maintain beliefs. Ingroup favouritism (seeing one's own group in a positive light) has been described as one of a few fundamental beliefs that form the basis for a range of other behavioural and informational biases.[16] When people identify strongly with a particular group, they may be more receptive to information that aligns with the group's beliefs while rejecting information that contradicts them, thus engaging in identity-based reasoning.[17]

Some forms of identity-based affiliation with an ingroup can lead to affective political polarization—feeling positive about one's own group and negative about other groups.[18] Social identity can be a powerful driver of positive within-group cooperative behaviour.[19] But it can also hinder intergroup cooperation when it builds on the strong ties that people develop towards their social group and takes a form of polarization that instils a heightened dislike and hostility towards outgroups. Then it can be pernicious,[20] such as

Box 6.1 Public reasoning and deliberation for human development

Human development emphasizes people's values, beliefs and aspirations when determining the actions societies might take in shaping our shared future.[1] It also calls attention to processes of social choice and deliberation and to the crucial importance of public reasoning for advancing just outcomes. People's ability to engage in any process of collective action depends both on their individual agency and on the availability of practical avenues to influence policies and decisions.

Agency is in turn enhanced by broader processes of public deliberation, which enable people to gather information, exchange ideas, consider diverse perspectives and resolve disagreements. Public reasoning processes draw on the wide range of values and motivations. For example, people might have differing motives for supporting green policies—from improving conditions in their own neighbourhoods to wanting a better world for future generations. Drawing on different positions might help expand common ground and widen social support for green policies.[2] In addition to upholding a plurality of views and beliefs, public reasoning can ensure that collective decisions are seen as fair, by engaging a wide range of interests and being seen as justifiable in the eyes of others, including those who have differing views. It also allows for continually refining policies in the light of changing values, new information and societal evolution, thus ensuring that concerns of justice remain relevant.

The efficacy of procedures of social choice is thus greatly enhanced by social contexts that foster public reasoning, with an emphasis on agency and participation. Many of these characteristics of social choice procedures are in line with democratic norms and practices, such as pluralism and accountability. Trust plays a role here as well. In addition to facilitating the most basic activities in social life, generalized trust contributes to aspects of democratic political practice, such as tolerating differences. Generalized trust also contributes to the development of overlapping social networks and the forms of association where people can come together, participate in their communities and engage in civic life.[3] By contrast, trust only in those from one's own social group and known others signals a lower radius of trust, with a potentially diminished scope for cooperating with unknown others.[4]

For collective action, procedures of social choice allow people to be motivated by more than their own selfish interests (as discussed in chapter 4). Indeed, one the biggest challenges to collective action among diverse groups is overcoming people's partiality towards their own groups and any vested interests connected to those groups. The need to overcome this parochialism further underscores public reasoning processes. Subjecting viewpoints to the eyes of others beyond one's own group can help in overcoming potential blind spots and biases when decisions are justified only by the priorities of one's own group. This includes subjecting beliefs and reasoning to an impartial spectator, someone whose interests are not directly advanced by what happens to a particular group.[5] Consider how unjust positions—such as religious intolerance or gender-based discrimination—can go unchallenged if not subjected to critical scrutiny. Engaging in public reasoning—justifying positions in the eyes of an impartial spectator—can help limit the influence of such parochialism and curbs the possibility of vested interests of some groups dominating the procedures of social choice.

To sum up, procedures of social choice that allow for a diversity of perspectives, draw on agency and mitigate the influence of group biases can enhance collective action in many ways. They expand the possibilities for acting together, by drawing on a larger consensus than within-group agreement alone. They also open possibilities to draw on a wide range of values and actions beyond what the exclusively self-interested model of human behaviour suggests.

Notes

1. The description and value of public reasoning deliberation is based on Sen (2009b). **2.** Echoing the arguments made in Oreskes (2019). **3.** Uslaner 1999. **4.** Enke 2023b. **5.** This is an expression that Sen (2009b) borrows from Adam Smith. In contrast with Rawls (1993), Sen (2009b) argues that the possibility of having impartial spectators outside each country could break through parochialism.

undermining support for democratic norms and practices.[21] Social identity can also erode social preferences.[22] By tapping into the anger and biases that come from strong partisan identities, it fosters animosity between groups, even if their positions on issues are not that divergent.[23] Strategic identity signalling can lead to behaviours motivated by belonging to the group rather than by self-interest.[24] It intensifies social divides and heightens divisiveness in political and public life.[25] In the political sphere it can lead to the emergence of seemingly immovable and mutually distrusting political blocs, transforming political differences into divisive zero-sum battles of us versus them, with all the negative consequences described in chapter 4.

Affective polarization is widespread and increasing around the world.[26] It is affecting national and international politics that will shape how shared global challenges will be addressed in the decades to come.[27] Because polarization often translates into intolerance and an aversion to compromise and negotiation, it can lead to political gridlock and dysfunction. It does so in part by eroding trust across communities, impeding efforts to address major shared challenges, such as health crises, violent conflict and climate change. Since many of these issues engender opposing beliefs and intense political competition, polarization poses a major societal obstacle to addressing shared problems.[28]

Political polarization imperils cooperation

Having diversity in preferences and considering a diverse range of perspectives and priorities can enrich collective decisionmaking and action—it is the clustering and segregation of preferences into opposing groups that can harm collective action.[29] Indeed, political institutions have been designed to harness diversity, and even rivalry, to democratically serve the public interest. For instance, the arguments invoked by James Madison in designing the US constitution did not assume away competing interests. They sought, through fragmented and overlapping institutions of authority, to harness that diversity to build safeguards and adaptability to an ever-changing environment. If political polarization threatens that diversity, the very effectiveness of those institutional designs can be impaired.[30]

> "Having diversity in preferences and considering a diverse range of perspectives and priorities can enrich collective decisionmaking and action—it is the clustering and segregation of preferences into opposing groups that can harm collective action

Political polarization goes beyond differences in views between various social groups. It collapses people's beliefs and preferences into differences defined by a single, salient group identity, coupled with animosity towards those with different viewpoints and priorities. It can have dramatic social and political consequences within societies (spotlight 6.1). This section explores how polarization impedes prospects for intergroup cooperation.

Beliefs tied to single or narrow identities

In many countries polarization parallels political campaigns that heighten the salience of narrow and exclusionary group identities.[31] Partisanship is often a key dividing line for polarization: it is fairly stable, and it is regularly incited through frequent political campaigning.[32] But other social identities can become politically salient as well, such as race, nationality, ethnicity and religion. In many parts of the world, polarization occurs around rifts that are framed as identity conflicts, leading to longstanding political cleavages.[33] Polarization often ensues when such identities are made politically salient, as other cross-cutting ties between groups diminish.[34]

Polarization can also emerge between groups holding competing political beliefs, opinions and worldviews, where holding a certain opinion is the basis of social identity.[35] The Brexit referendum gave rise to new social identities—Leaver and Remainer—which formed the basis of heightened affective polarization between those two groups.[36] In the United States and elsewhere, people's self-identification with their vaccination status during the Covid-19 pandemic was evident in the animosity between vaccinated and unvaccinated groups and the polarized social responses to mandatory vaccination policies.[37]

Polarizing rhetoric has been described as a strategy of identifying someone over something to blame for group-based concerns and insecurities.[38] Economic, political or cultural anxieties create conditions for polarization. Declining economic opportunity and increasing inequality (whether real or perceived) can foster political polarization, leading people towards closer integration with their ingroups.[39] And cultural aspects can become more salient as wellbeing improves.[40] Furthermore, affective polarization has the potential to increase economic inequalities.[41] Insecurities can make people more receptive to polarizing messages—such as narratives that draw on a dominant group's perceived loss of status or contentious debates framed as moral issues where people are likely to resist compromise (as seen in debates on gender).[42] The 2021/2022 Human Development Report showed that polarization and insecurity are closely linked: people who feel insecure are more likely to hold extreme political preferences and less likely to trust others.[43]

So, what matters is not the presence of group differences or disagreements—it is that all differences are collapsed into questions of a narrow or single identity. Polarization ensues when people's beliefs, attitudes and worldviews are closely tied to the groups they identify with, coupled with strong ingroup bias and loyalty, alongside antipathy and prejudice towards other groups. As discussed below, it diminishes the possibilities for acting together and lends itself to narratives rejecting pluralism.

Us versus them—the toxic brew of zero-sum thinking

Polarization is associated with people perceiving their differences as zero-sum, making them less likely to seek joint actions and identify shared goals. Zero-sum beliefs (see chapter 4) make people in polarized societies less likely to trust or associate with individuals from an opposing political or ideological camp[44] and more likely to seek social and moral distance from their perceived outgroups and describe their political opponents in dehumanizing or derogatory terms.[45]

> "Polarization shaped by zero-sum beliefs can alter the functioning of political institutions, leading to gridlock and dysfunction

By reducing wide-ranging political issues to questions of us versus them, where a group can gain only at the expense of the others losing, polarization can foster resistance to actions viewed as reflecting the values and priorities of outgroups. Because polarization delegitimizes unifying or middle-ground narratives, groups seeking common ground and collaboration in a context shaped by zero-sum beliefs can lose credibility and public support. This can diminish confidence in other social institutions, such as the media and civil society organizations, which come to be seen as biased and untrustworthy (spotlight 6.1).

Polarization shaped by zero-sum beliefs can also alter the functioning of political institutions, leading to gridlock and dysfunction. And because it is often deployed as a political strategy, it can create conditions for a vicious cycle: polarizing rhetoric and mobilization by one party leads opposing groups to also adopt polarizing messages.[46] When people view their political opponents not just as people with differing opinions but as enemies that gain at their expense, they tend to adopt a conflict mindset, viewing their own goals as attainable only by excluding outgroup members—and becoming more invested in addressing this perceived threat than in reconciling or cooperating with their opponents.[47] Opposing groups then lean towards more extreme beliefs and preferences, culminating in greater tolerance for behaviour that flaunts democratic norms and practices.[48] So, perceptions of political contests as zero-sum battles can lead polarized groups to become more willing to accept extraordinary measures.

Thus, polarization coupled with zero-sum beliefs has contributed to the recent support for populism and to threats to democratic norms and practices,[49] sometimes increasing support for authoritarianism.[50] Indeed, increasing support for authoritarianism is also correlated with increases in polarization,[51] breeding cynicism about compromise and tolerance, which are especially important for democratic processes.[52] Compromise becomes a betrayal of principles rather than a necessary part of the democratic process.

Threats to international cooperation

The rise in political polarization and zero-sum beliefs makes international cooperation more politicized and contested in domestic politics, enflaming beliefs and narratives about international institutions.[53] Partisanship and group affiliation often determine people's preferences on whether leaders should engage in international cooperation and how.[54] Thus, polarization can also contribute to policy instability, where shifts in political power are accompanied by dramatic policy changes, including on matters of international cooperation and engagement, with direct bearing on the prospects for the provision of global public goods.

Political polarization's impact on international cooperation is manifested, in part, through reduced support for official development assistance in more polarized high-income countries.[55] It is also manifested in reduced domestic support for global public goods, such as mitigating climate change.[56] Scepticism about international cooperation is not new.[57]

But there is a growing recognition that lack of domestic support for international cooperation has parallelled the increase in political polarization.[58] Between 1970 and 2019 there were 84 referendums concerning international cooperation (such as membership in international organisations), with an increase in recent decades.[59] There have been campaigns for withdrawing from international institutions in several countries.[60] The European Union, the World Trade Organization and international justice institutions have been described as facing legitimacy challenges.[61]

Taking into account the influence of beliefs, narratives and cultural factors on international cooperation helps in understanding today's heightened relationship between political polarization and support (or lack thereof) for international cooperation. People often hold strong beliefs and views about international issues, contrary to assumptions that people are uninformed or uninterested. People's beliefs about and preferences for foreign policy draw much from their moral values, worldviews and ideological orientations.[62] The way people conceptualize fairness influences their evaluation of burden sharing in international cooperation: those concerned with equity are less likely to support contributions to cooperative initiatives when other countries are perceived as not paying their fair share.[63] In Germany people's perceptions of transnational interdependence strengthen corresponding beliefs about the importance of international institutions for solving problems.[64]

Euroscepticism often draws on economic and cultural anxieties in shaping political polarization.[65] People who are hopeful about their societies view the European Union more positively than those who are fearful, with the latter less satisfied with the direction of policy and the quality of democracy in EU decisionmaking.[66] International cooperation has become more politically contentious in countries where political polarization around economic inequality and immigration has gained prominence in public debate.[67] The package of openness that international institutions are associated with—the combination of economic integration with exposure to foreign cultural influences and ideas—can contribute to perceptions of insecurity and become a fault line in political polarization.[68] Additional explanations run through perceptions, attitudes and beliefs and include popular support for leaders espousing nationalism, protectionist policies and opposition to outside influences, complementing economic explanations for backlash against international engagement (chapter 2).[69]

“With rising polarization, international cooperation can be undermined by political campaigns against international institutions

With rising polarization, international cooperation can be undermined by political campaigns against international institutions. Participation in international institutions can become polarizing. Polarization can make the domestic political dynamics of international participation (domestic ratification processes) uncertain and disincentivize the executive branch of governments from entering agreements. Other nations may view a polarized country as less reliable and predictable in its foreign policy decisions, reducing trust in its commitments and alliances. One country's effort to contest international commitments and alliances can prompt others to do the same, contributing to a contagion effect.[70] And if such efforts are not seen to be reflected, for example, in international institutions that support those commitments and alliances, that can intensify contestation on the basis that the international institution in question has proven unwilling to accommodate demands.[71] This contagion is not a given, but the possibilities for contagion are shaped strongly by the extent to which people's existing beliefs are polarized.[72]

Since many global public goods are a matter of choice and agency, people's beliefs, shaped by narratives and ideas, are central for driving action on shared challenges. Political polarization diminishes the space for such action, given its association with zero-sum thinking, making it harder for people to recognize that there are options where all sides can gain. It steers decisionmaking away from collective action, leading instead to contentious battles between opposing political camps. It erodes the possibilities for addressing shared challenges between groups, instead fuelling mutual distrust and suspicion. Perceptions of insecurity exacerbate these dynamics, in part by making people more receptive to narratives of intergroup competition and constraining the possibilities for acting together (chapter 4).

Enhancing international collective action—now

Prospects for cooperation might seem uncertain given that domestic political polarization is compounded by geopolitical upheaval (spotlight 6.2). But international institutions, including the United Nations, have historically been both constrained and enabled in periods of geopolitical change (spotlight 6.3).[73] So, there is even more reason to pursue collective action, including through multilateral organizations.

International collective action can be enhanced along four avenues.

- Drawing on a broader understanding of behaviour, as discussed in chapter 4, may give more reason to see additional options going forward, since frames or narratives can shape the cultural and social context for behaviour and institutions. The provision of global public goods can put forward frames beyond zero-sum thinking.
- Expanding international financing for international cooperation beyond official development assistance to include financing for domestic contributions to global public goods.[74] This may imply new instruments and approaches,[75] but key considerations are the extent of domestic support to channel resources internationally and whether arguments to finance global public goods crowd out the motive to provide official development assistance. That crowding out appears unlikely.
- Leveraging the high correlation between trust in one another with trust in both national and multilateral institutions.
- Directly addressing political polarization.

Framing alternatives to zero-sum thinking

Zero-sum beliefs lead to predictable psychological reactions and behaviours driven by the idea that if one country gets ahead, others must be left behind, and vice-versa.[76] Narratives premised on zero-sum beliefs tend to make countries less inclined to cooperate with others[77] and are at the root of political polarization in some countries.[78]

Adequately provided global public goods are not zero-sum in that a country benefiting from or using a global public good does not detract from others doing the same. This does not mean that the benefits are equally shared. But recognizing that multiple parties can enjoy the benefits simultaneously may thus provide a framing that gives salience to the pursuit of opportunities for cooperation in arenas that are not zero-sum.[79] This is particularly the case for planetary public goods, a lens that could offer a new perspective on the inevitability of human mutuality and interdependence on a shared planet.[80]

> “Recognizing that multiple parties can enjoy the benefits of global public goods simultaneously may provide a framing that gives salience to the pursuit of opportunities for cooperation in arenas that are not zero-sum

In a selfish choice model of behaviour, agents seeking to advance their self-interest can act strategically, sacrificing their wellbeing to benefit others if there is reciprocity. But reciprocity is not the only mechanism that can lead to and sustain cooperation.[81] As discussed in chapter 4, Elinor Ostrom famously documented the variety of institutional arrangements that structure interactions among people and between people and common pool resources in a variety of mutual engagements that foster collective action in some respects, even when differences and disagreements persist in others.

Determining the regularities of these arrangements and whether they could be scaled up to the global level has been a topic of enduring debate.[82] But there is evidence that people can support unilateral action on some global public goods, not because they misunderstand the need for collective action but because they have a sense of commitment and obligation, particularly in countries where people perceive the need for the country to take a leadership role[83] and even when social norms are not supportive.[84]

Financing global public goods

International flows of resources can be motivated primarily by supporting low- or middle-income countries in making progress, as in official development assistance. Financing for global public goods follows a different rationale—international flows are meant to enhance the receiving countries' ability to contribute to the provision of global public goods.[85] Still, even if the concern is purely motivated by, say, the pledge of the 2030 Agenda for Sustainable Development to leave no one behind, the provision of global public goods still matters, given that their underprovision can drive exclusion and inequality. Just consider how the underprovision of multiple global public goods during the Covid-19 pandemic widened inequalities and increased deprivations, as documented in part I of the Report. And looking ahead, failures or delays in providing the global public goods needed to mitigate climate change will increase inequalities, as documented in chapter 1, with some of the most harmful impacts of human development falling on people and countries already deprived.

Moreover, when the incidence of benefits from the provision of global public goods is favourable to those who have the least, that provision can be progressive. So, even those motivated by supporting poorer countries would have reason to support financing global public goods in those instances.[86]

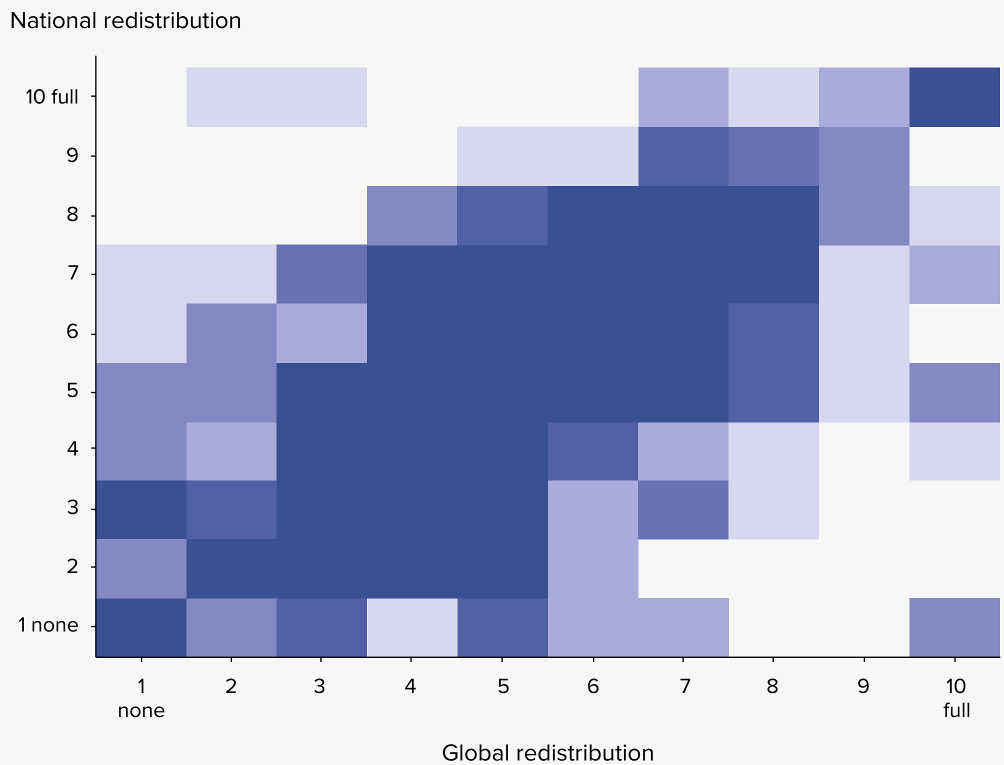
“When the incidence of benefits from the provision of global public goods is favourable to those who have the least, that provision can be progressive

Using public resources internationally depends on support from domestic constituencies. A rationale to finance global public goods might be seen to risk alienating domestic constituencies that support international flows and development cooperation motivated by the support to reduce poverty and make low-income countries progress. Those reasons sustain support for humanitarian aid (saving lives) and income transfers to low-income countries and people living in fragile settings. To address this concern, it is important to establish, first, whether people who support income redistribution at the national level also support it internationally. Chapter 4 documented that preferences for redistribution vary within countries and are influenced by social preferences and by beliefs about whether inequalities are unfair—both of which are heterogenous across and within countries. In Germany, despite a high correlation between support for national and international redistribution (figure 6.1), the share of respondents who prefer the same redistribution in the national and global contexts was 42 percent. Others want extensive national and very little global redistribution and vice-versa. So, even though the correlation between national and international redistribution is high, it is not perfect, and additional factors beyond blanket support for redistribution must be at play.

While individual support for international flows of resources is a new area of study, the main determinants of that support (whatever the rationale for the flows) seem to be people's beliefs about the geographic and moral boundaries of concern.[87] Do people believe they hold moral obligations towards others anywhere in the world (a more universalist belief) or only to those who are closer or similar, including those living in the same country (a more parochial belief)? The variation in these beliefs is widespread both within and across countries, but it is possible to place individuals along a spectrum from lower to higher levels of universal beliefs. Evidence from 60 countries with 85 percent of the world's population and 90 percent of global GDP reveals a strong correlation between more universal beliefs and support for the global poor versus helping the local poor and for protecting the global environment versus protecting the local environment (figure 6.2). These results hold after country effects, income, education, age, gender, urban residence and religiosity are controlled for, consistent with evidence that within-country variation in support to political outcomes is more strongly associated with beliefs along the parochial-universal spectrum than with variables such as education and income.[88]

So, people who hold more parochial beliefs are not opposed to redistribution as such, since they support it when asked about local or community-based redistribution.[89] National redistribution in high-income countries in North America and Europe is highly impersonal,[90] typically not geared to support particular groups or communities. Thus, the correlation between national and global redistribution in countries such as Germany might be driven by a group of people sharing more universal beliefs. Given the insights about cultural differences in preferences and beliefs reviewed in chapter 4, one cannot assume that universalist beliefs in shaping attitudes towards global redistribution are universal. Indeed, the coefficients of regressions of political attitudes

Figure 6.1 Support for national redistribution is correlated with support for global redistribution in Germany, but some people want extensive national and very little global redistribution and vice-versa



Note: The correlation coefficient is 0.70 ($p < 0.0001$). Darker colors represent more responses in this area.
Source: Fehr, Mollerstrom and Perez-Truglia 2022.

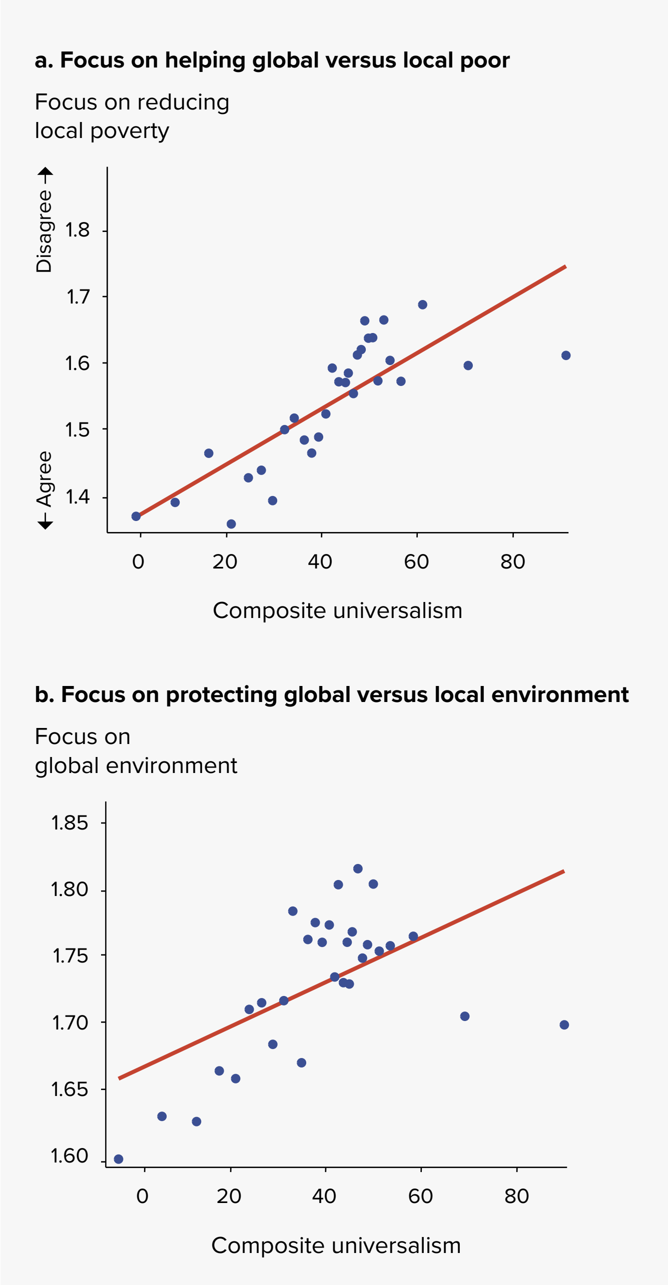
on universalism (with country effects controlled for) are positive for all high-income countries but lower for rich non-WEIRD countries (western, educated, industrialized, rich and democratic)—and even lower for low- and middle-income countries (figure 6.3).

There is thus little reason to believe that presenting a rationale for international flows from high-income countries to finance global public goods would dilute a commitment to international flows based on motives linked to reducing poverty or saving lives, given that the underlying motive for domestic public support for international flows is associated with less parochial beliefs. Moreover, enhancing the provision of many global public goods is key to reducing global inequalities as well as vulnerability to poverty and other deprivations. In addition, some evidence suggests that people in low- and middle-income countries do not always favour international aid as a means of reducing intercountry inequality,[91] with recipients more interested in framings that address justice and enhance dignity and agency[92] than in charity-based rationales that recipients may perceive as stigmatizing.[93]

Advancing equity is also associated with higher domestic support for international agreements perceived as fair, along with low domestic costs of implementation and, crucially, whether other countries also participate.[94] In high-income countries domestic support to finance global public goods depends in part on the level of ambition in other countries.[95] This observation is in line with domestic constituencies and political leaders caring about how their countries are portrayed in the international context,[96] as in global performance indicators.[97] Still, the impact is not uniform across the population, with some groups more likely than others to have their views shaped by these factors,[98] making political polarization particularly relevant.

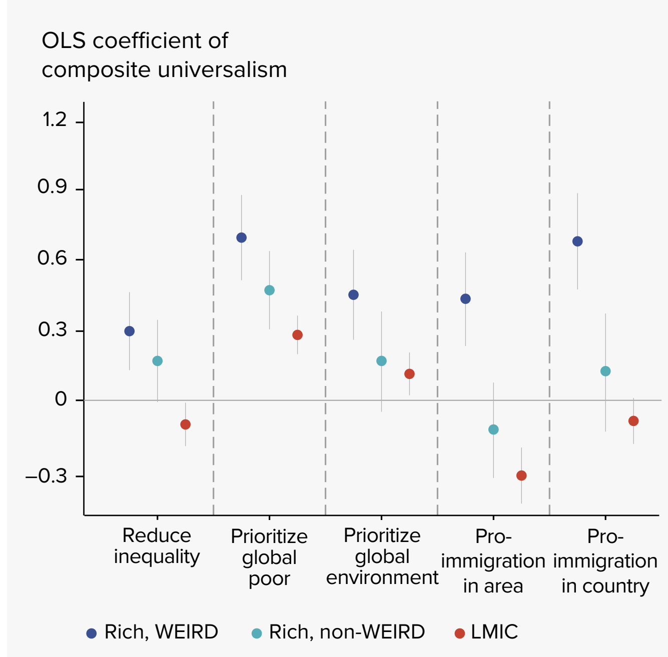
In sum, countries may (and do) find it hard to agree on providing global public goods. But advancing arguments for financing them does not necessarily

Figure 6.2 More universalist beliefs are correlated with concerns both for the global poor and for the global environment



Note: The scatter plots average agreement with a policy priority for a given level of universalist beliefs, with country fixed effects controlled for. Policy priorities on the vertical axes are coded as 1–4, with 1 corresponding to "strongly disagree" and 4 to "strongly agree." The index of composite universalism is constructed based on how respondents allocated hypothetical money between a specific ingroup member and a random stranger. The decision is disinterested in that respondents were told that they could not keep any of the money for themselves. Robust evidence suggests that results are similar for hypothetical and real allocations of resources and that it makes little difference when the question is asked invoking a moral concern or avoiding any reference to moral obligations. The positive correlations are statistically significant ($p < 0.01$).
Source: Cappelen, Enke and Tungodden 2022.

Figure 6.3 Universalist beliefs are associated with global redistribution and global environment in high-income countries, but the cultural context matters



OLS is ordinary least squares.
Note: The vertical axis shows the coefficients of ordinary least squares regressions of agreement with policy priorities on composite universalism, as defined in the note to figure 6.2. Each coefficient can be interpreted as the change in agreement with a policy priority (on a scale of 1–4) in response to moving the index of composite universalism from 0 to 100. Whiskers show 95 percent confidence intervals. WEIRD (western, educated, industrialized, rich and democratic) countries comprise Australia, Canada, France, Germany, Greece, Italy, the Netherlands, Norway, Portugal, Spain, Switzerland, the United Kingdom and the United States. Rich, non-WEIRD countries are Chile, Czechia, Croatia, Hungary, Israel, Japan, the Republic of Korea and Poland. LMIC corresponds to a subset of low- and middle-income countries included in the analysis.
Source: Cappelen, Enke and Tungodden 2022.

imply less support for international flows from high-income countries. Financing global public goods is likely to result in the need to substantially increase international flows and potential domestic resource mobilization in high-income countries. But it is likely to enhance global equity through two channels. One, by mitigating the drivers of inequality associated with the underprovision of global public goods. And two, by generating ancillary national benefits, such as less local pollution or poverty through job creation (typically one of the explicit intents of official development assistance). Multilateral institutions might need to more clearly articulate their potential role in channelling these resources, building—but also expanding—on their track record of pooling and allocating international financial resources to meet country needs. This is well established in the humanitarian realm, for instance, with strong evidence suggesting that when the United Nations allocates humanitarian assistance, it does so on the basis of actual needs and is not driven by other considerations.[99] The expansion would need to include supporting low- and middle-income countries to contribute to global public goods.

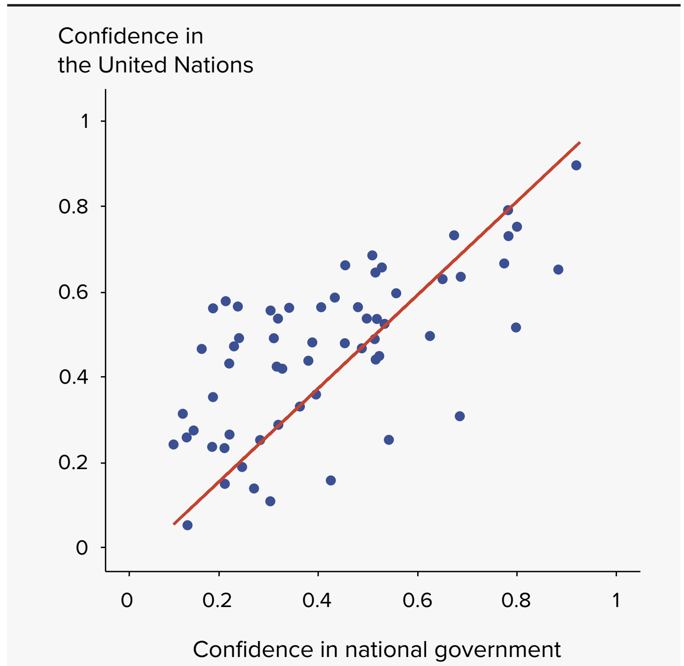
Building trust in international institutions through trust in national institutions

Generalized trust reflects people's beliefs in the inherent integrity of others and contributes to cooperative action at scale.[100] It is linked to a range of socially beneficial outcomes, and its importance for economic performance is widely documented.[101] It is also linked to such outcomes as greater political stability and faster recovery from economic crises.[102] It is especially relevant for cooperating with those one knows little about—or in uncertain situations.[103] For international cooperation, trust facilitates collective action. Indeed, international cooperation would be nearly impossible without a basic belief that countries will respect their commitments, which also enhances multilateral institutions' ability to function.[104]

While trust in institutions is difficult to specify with precision,[105] positive evaluations of institutions (particularly state institutions) have been associated with support for climate action[106] and are linked with generalized trust.[107] For example, the belief that state institutions are effective punishers of free riders enhances generalized trust.[108] Confidence in national and international institutions is more than 10 percentage points higher among people with generalized trust (table 6.1). This is consistent with evidence that more-trusting individuals also view international institutions more positively and show greater support for compromising with other countries.[109]

Although "confidence in institutions" has varying interpretations and depends on multiple factors, confidence in the national government explains two-thirds of the variance in national averages of confidence in the United Nations (figure 6.4). Assessments

Figure 6.4 Confidence in national institutions is correlated with confidence in multilateral institutions, key for international collective action



Note: Confidence in institutions (the national government and the United Nations) implies reporting "a great deal" or "quite a lot" of confidence (other options: "not very much" or "none at all").
Source: Human Development Report Office based on data from the World Values Survey (Inglehart and others 2022).

Table 6.1 Confidence in national and international institutions is higher among people who trust others

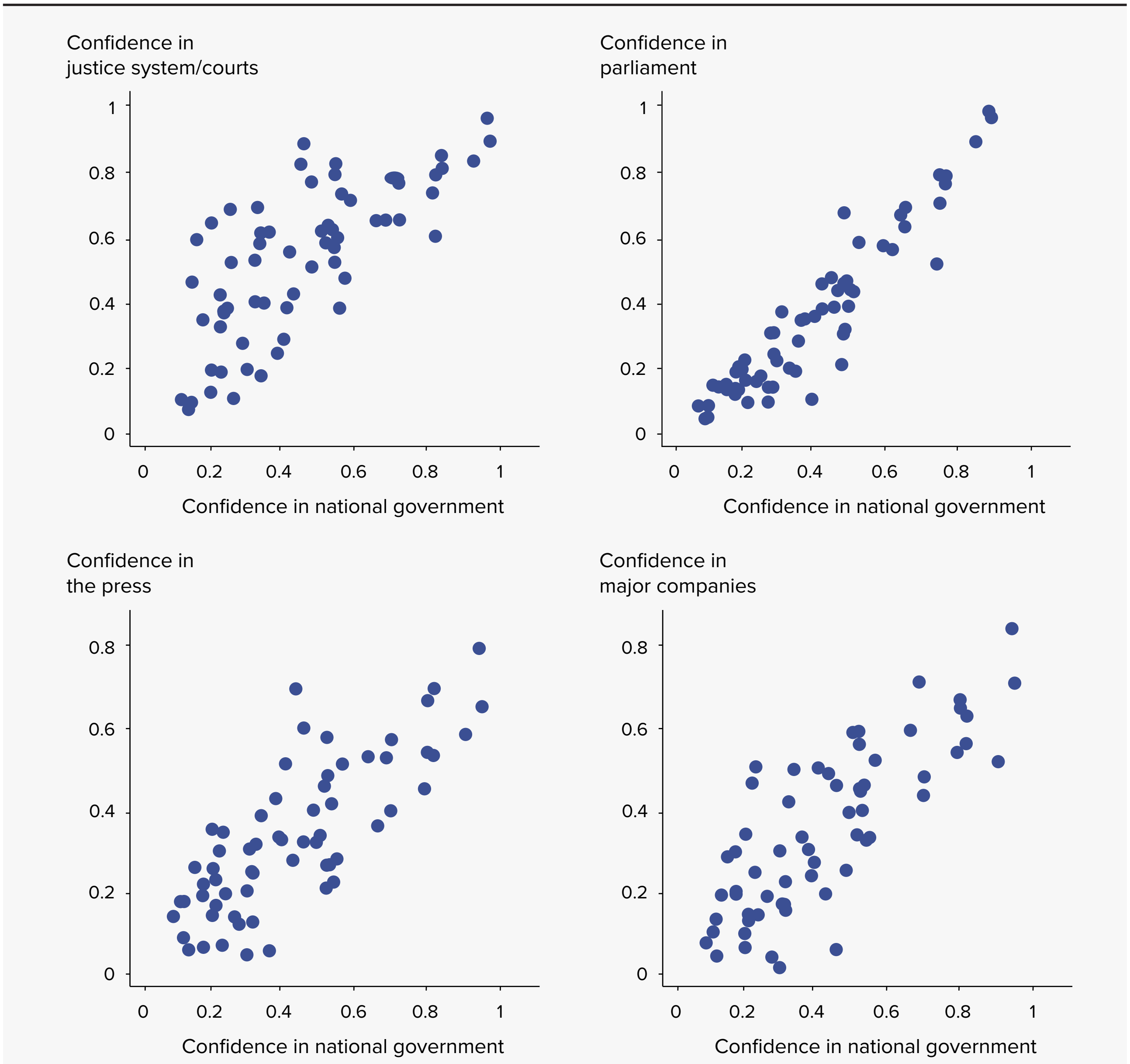
		People who do not trust others (generalized trust)			People who trust others (generalized trust)		
		Confidence in national government			Confidence in national government		
		No	Yes	Total	No	Yes	Total
Confidence in the United Nations	No	41.0	14.9	55.9	28.2	16.6	44.8
	Yes	17.6	26.5	44.1	17.9	37.3	55.2
	Total	58.6	41.4	100.0	46.0	54.0	100.0

Note: Generalized trust implies reporting that "most people can be trusted" (other option: "need to be very careful"). Confidence in institutions (the national government and the United Nations) implies reporting "a great deal" or "quite a lot" of confidence (other options: "not very much" or "none at all").
Source: Human Development Report Office based on data from the World Values Survey, using individual observations across countries with data.

of confidence in other institutions relevant for collective action are also highly correlated with confidence in the national government (figure 6.5).

The link between trust in national and international institutions implies that perceptions of the legitimacy of national institutions predict the perceived legitimacy of international institutions.[110] There is also evidence that communication by national institutions (governments or civil society organizations) on the performance of international organizations has more impact on the perceived legitimacy of international institutions than direct communication by international organizations themselves.[111] To the extent that political polarization both undermines confidence in institutions (national and international) and is associated with perceptions of insecurity that also undermine interpersonal trust, addressing it could be a lever to enhance trust in both national and international institutions, as well as interpersonal trust.

Figure 6.5 Confidence in several institutions is highly correlated with confidence in the national government



Note: Confidence in institutions (national government, justice system/courts, parliament, the press, major companies) implies reporting “a great deal” or “quite a lot” of confidence (other options: “not very much” or “none at all”).
Source: Human Development Report Office based on data from the World Values Survey (Inglehart and others 2022).

Polarization intensifies ingroup trust while eroding outgroup trust. While high ingroup trust is not inherently a problem, its combination with an erosion in generalized trust can impair cooperation between groups. Polarization and declines in generalized trust can be mutually reinforcing.[112] Thus, tackling polarization could enhance intergroup cooperation.[113]

Tackling polarization directly

This chapter has argued that polarization hinders collective action across social groups and that there are ways to address it indirectly, as discussed up to now. But there are also ways to tackle it directly, three of which are explored here—by acting on people's misperceptions about issues and about the groups that they do not affiliate with, by enhancing cross-cutting social ties that transcend group divisions and by addressing perceptions of insecurity.

Addressing misperceptions about issues and about other groups

At the individual level the belief that climate change is human-caused is widespread.[114] But individual beliefs alone do not determine collective action—what people believe others think about climate change also matters.[115] For example, while 69 percent of people around the world report being willing to sacrifice some of their income to contribute to climate change mitigation, only 43 percent perceive others believing the same (a 26 percentage point misperception gap).[116] A recent survey in the United States found that 80–90 percent of respondents understand the challenge of climate change. And while 66–80 percent of all respondents support action to mitigate climate change, respondents estimated that the prevalence of that support in the rest of the population was only 37–43 percent.[117] Around the world many people experience a "false social reality by underestimating popular climate policy support."[118] In other words people agree on more than they think they do. These misperceptions are pervasive and extend to other concerns that require collective action.[119] Misperceiving others' beliefs can lead to the persistence of pluralistic ignorance,[120] which sustains policies or political arrangements that are inconsistent with prevailing individual beliefs.[121] In contrast, motivating societywide responses to collective action challenges can be enhanced if these misperceptions are addressed.[122]

Misperceptions imply biased beliefs about what others think about actual events and facts and can be polarizing when people hold misperceptions about what outgroups think of them (spotlight 6.4).[123] They can also emerge not only within societies but also across countries and can lead to misunderstandings and even conflict.[124] Such misperceptions can drive people to hold more extreme beliefs than they would otherwise—people evaluate others' positions when forming their own opinions and are therefore led to adopt more extreme positions.[125]

Misperceptions in the general population affect the positions of political leaders, who often vastly overestimate the animosity among different groups, leading to further misperceptions and related polarization, as well as the erosion of democratic norms.[126] People often hold (incorrect) beliefs about others that reinforce their own beliefs.[127] Misperceptions can be further compounded because people tend to interact more often with those who share their own views and consume information that confirms their biases about others.[128] Polarized societies also tend to be vulnerable to misinformation, given that affectively biased people are more likely to engage in forms of motivated reasoning,[129] with misinformation, even on otherwise neutral issues, potentially further entrenching misperceptions. The media environment (including social media) and leaders' messaging often play central roles in the emergence and persistence of misperceptions.[130]

"People agree on more than they think they do. Misperceiving others' beliefs can lead to the persistence of pluralistic ignorance, which sustains policies or political arrangements that are inconsistent with prevailing individual beliefs

Misperceptions can shape public support across a range of issues. This includes support for income redistribution, which is sensitive to misperceptions about the extent of income inequality in society, about beliefs of the fairness of the origin of inequality and beliefs about where a person sits on the income distribution.[131] It also includes misperceptions about immigration—in several high-income countries the share of immigrants in the population is perceived to be two to three times higher than the actual share—with the misperception gap hovering around 20 percentage points, independent of education, income, gender, political affiliation and other factors (figure 6.6).[132]

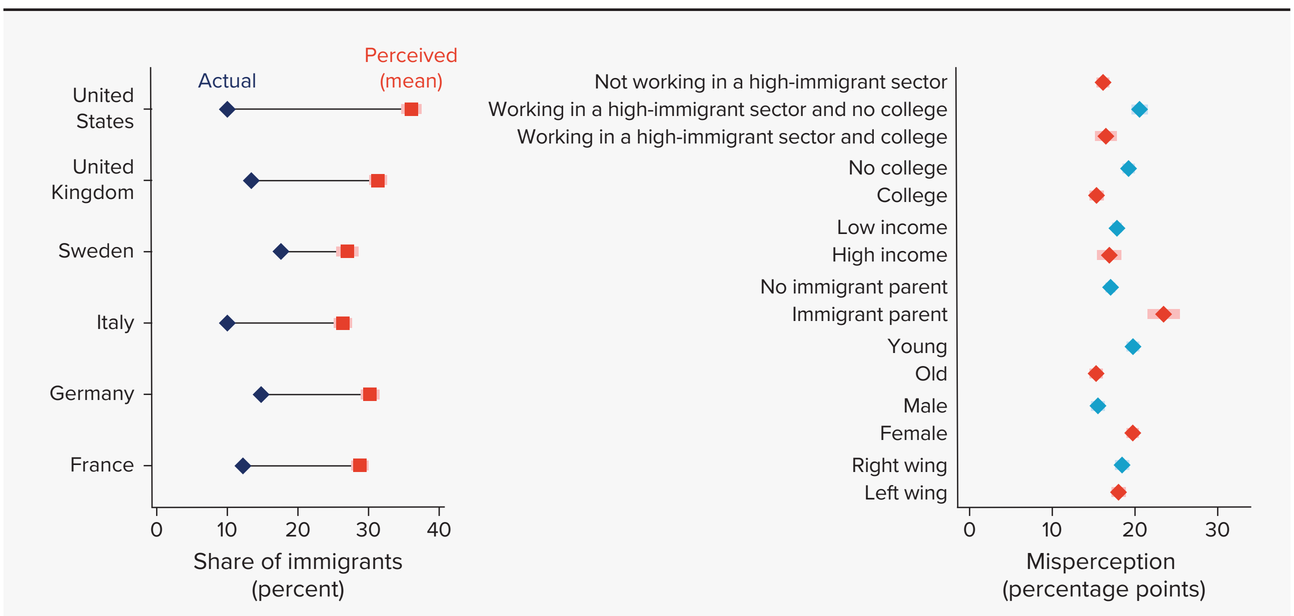
The focus in this chapter is how incorrect beliefs about others can exaggerate perceived differences between groups and hamper action on shared challenges.[133] Misperceptions of what different groups within countries deem fair and appropriate, as with countries, can lead to misunderstandings and even conflict.[134] While the underlying cognitive and social processes that lead to misperceptions are common across the population, misperceiving others' beliefs can lead to alienation and hostility across groups—and even to dehumanization.[135] Misperceptions about polarization can operate as a self-fulfilling prophecy, deepening and entrenching polarization.[136] They obscure the true distributions of beliefs about political issues, which can result in gaps between people's preferences and the actual terms of policy debates.[137]

Correcting people's misperceptions about others can have a positive impact on intergroup cooperation (spotlight 6.4).[138] People update their political views when they have information about their political opponents.[139] Providing accurate information about the proportion of immigrants living in a country also changes people's beliefs.[140] Exposing people to the true distribution of others' support for "pro-climate" policies increases support for those policies.[141] Correcting people's perceptions about polarization can stem polarization, leading polarized groups to moderate their opinions of their political opponents.[142]

Less clear is whether these information-based interventions can lead to long-lasting behavioural change. If the links between group identities and misperceptions persist, information-based interventions might not be long-lasting—particularly if group leaders and segments of the media continue to feed narratives that foster misperceptions.[143] The beliefs and convictions among people in highly polarized societies are cognitively and affectively loaded, which can make them resistant to change.[144] Indeed, polarization often contributes to cognitive rigidity (a reluctance to update beliefs in light of new information).[145]

In a highly complex information environment, people are commonly exposed to competing information, and ingroup biases can lead people to discredit or distrust information that conflicts with their existing beliefs.[146] So, efforts that address the cognitive and affective bases of misperceptions can help. Interventions that facilitate more deliberative processing

Figure 6.6 The misperception of the share of immigrants in the population is high and widely shared across society



Source: Stantcheva, Alesina and Miano 2019.

of information can work against people's tendency to arrive at oversimplified beliefs.[147] For example, in contexts of intergroup conflict, presenting information in a frame that induces sadness rather than provoking anger has been found to be depolarizing.[148] Interventions that rely on qualitative and narrative-based approaches, such as storytelling and vignettes, have been particularly effective in shifting misperceptions.[149] Recent evidence suggests that correcting misperceptions about climate change of the sort with which this section started is an effective way of changing people's behaviour to act to mitigate climate change (but not necessarily changing beliefs).[150]

Creating space to bridge divides

Emphasizing overlapping identities can be a powerful antidote to intergroup hostility.[151] Polarization often leads people to underestimate their commonalities with others. Recognizing that people hold multifaceted identities can mitigate against categorizing others as less deserving of concern, humanizing those otherwise perceived as adversaries.[152] A sense of shared identity need not be built on a superordinate category —such as national identity—which comes with the potential risk of creating other outgroups. Rather than depend on a single overarching similarity, emphasizing the diversity in people's identities allows for multiple cross-cutting ties to be built, countering the likelihood of any one cleavage dominating.[153] Identifying points of similarity allows groups to discover shared values and concerns, diminishing the otherness often associated with strong biases against outgroups and perceived political opponents.

> "Identifying points of similarity allows groups to discover shared values and concerns, diminishing the otherness often associated with strong biases against outgroups and perceived political opponents

A complementary approach for bridging differences emphasizes encouraging intergroup contact.[154] This is often the basis of proposals for more deliberative decisionmaking structures, such as citizen assemblies, which bring representative groups together to collectively debate issues (see also chapter 5 on the importance of public reasoning and deliberation). Deliberation is distinct from simple discussion of differences; it involves structured engagements that are substantive, inclusive and even-handed in considering diverse perspectives.[155] Deliberative structures have been found to mitigate political polarization.[156] Suggested mechanisms for this effect include that deliberative structures allow people to practice empathy (by taking the perspective of those they perceive to be opponents) or experience others as equals working towards a shared goal.[157] Deliberative processes can enhance people's understanding of the issues at hand, increase confidence in cooperative approaches and encourage respect and tolerance for those with different views.

That said, the effectiveness of deliberation in tackling polarization depends on certain conditions.[158] Perhaps most important is relative equality between participants—structures where some groups or interests dominate others clearly work against the equal and fair consideration of all perspectives.[159] Enhancing equality in this respect might rely on efforts to address inequalities beyond the interpersonal dynamics of small deliberative groups.[160] Deliberation is also unlikely to overcome divides if the goals of participating groups are (or are perceived to be) fundamentally incompatible. So, arriving at some shared goals that all participants can agree on can be a precondition for a deliberative process to overcome divides.[161] This is not to say that depolarizing interventions based on deliberation depend on first achieving full equality; instead, working towards relative equality and a shared sense of purpose deserves additional attention in this strategy for tackling polarization.

Addressing perceptions of insecurity

Polarization and mistrust draw on real and perceived insecurities felt by strongly identified groups.[162] Easing narratives of insecurity can help in allaying the underlying fear and anxieties that might make people more receptive to polarizing messages about other groups. Social policies that tackle insecurities are clearly important in this respect, particularly those that build solidarity between groups facing common threats.[163]

An agenda of providing global public goods can expand the possibilities for navigating insecurity together, offering people and societies a greater sense of agency and control in a turbulent world.[164] Such an agenda presents an opportunity for building a new narrative of possibility and hope rather than anxiety, as well as a strategy for getting there. In this way, pursuing the provision of global public goods—a goal —can also be a means towards having a beneficial impact on stemming polarization.

“Frames associated with providing global public goods could power collective action on urgent challenges, given that the evidence on the political effects of emergency frames alone in advancing action on climate and broader sustainability challenges is mixed

In fact, the use of frames to address collective action is pervasive in the current debate on global challenges, given strong evidence that they affect how people interpret reality, form beliefs and develop value orientations about their needs and aspirations.[165] It has been argued that shifts in frames are associated with major changes in culture, society and the economy. For example, a key cultural change associated with the Enlightenment was the conviction that science and technology could improve living standards.[166] Today, action to address global challenges often draws on emergency frames, supported by science but also strategically deployed to stimulate collective action, as for climate change.[167] Frames associated with providing global public goods could power collective action on urgent challenges, given that the evidence on the political effects of emergency frames alone in advancing action on climate and broader sustainability challenges is mixed.[168]

Moreover, as discussed in chapter 4, cooperation can collapse if there is uncertainty about where the dangerous threshold often invoked in emergency frames lies. This feature of uncertainty has been mobilized by powerful opponents of regulation on challenges from tobacco to fossil fuels to hinder public support for collective action.[169] In addition, those who strongly oppose climate action tend not only to use uncertainty as an argument but also to emphasize purported negative impacts of climate action on consumers.[170]

However, the collapse of cooperation under uncertainty thresholds, discussed in chapter 4, can happen even without the strategic mobilization of uncertainty by opponents of climate action. If emergency frames engender fear when used exclusively, they can motivate people to retreat even more to their ingroup, particularly in contexts of uncertainty.[171] When this happens, it can exacerbate political polarization within countries: while fear is a powerful driver of ingroup cooperation, more entrenched and polarized groups are less likely to find common ground.[172] If people feel that they have little agency to affect climate change, relying on emergency frames alone can spur anxiety and distress, particularly in young people.[173]

In contrast, the most common way for people to have agency in addressing climate change—how they perceive capacities to act to mitigate climate change—is through being part of a process of collective action (a sense that individual actions are meaningfully embedded in a broader social process).[174] People tend to support climate change action if they believe policies will be effective and fair.[175] Moreover, there is less polarization over concrete ways of acting (for instance, less polarization on advancing renewable energy than on how much one should be concerned about climate change).[176] The urgency to act on climate change and other global challenges cannot be underemphasized,[177] particularly because many people do respond to new information about climate challenges in updating their beliefs.[178] Supplementing emergency frames with an articulation of the aspiration to provide global public goods could foster international collective action and ease political polarization.[179]

SPOTLIGHT 6.1

Identity, polarization and their societal and political consequences

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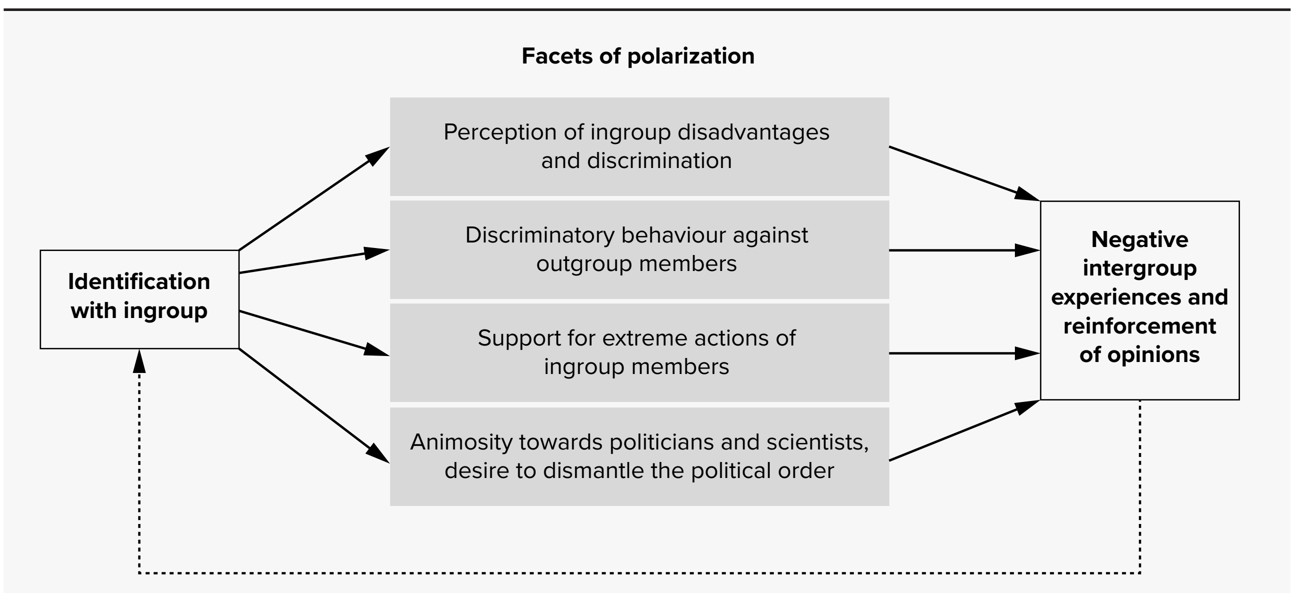
Polarization is a growing concern, affecting societies worldwide. It signifies a deepening divide between groups holding contrasting viewpoints on political matters and on approaches to addressing complex societal issues.[1] This polarization becomes evident in uncompromising stances on critical topics such as mitigating climate change,[2] controlling infectious disease[3] and combating misinformation.[4] To illustrate, discussions surrounding the adequacy of climate policies have intensified in recent years, with one faction advocating for more stringent measures and another insisting on less restrictive ones. These opinion-based groups are increasingly drifting apart, making reconciliation challenging. Nevertheless, as the global climate crisis and numerous other societal challenges require extensive and large-scale human cooperation transcending group boundaries,[5] polarization itself emerges as a significant societal obstacle, hindering our ability to address pressing issues of our time.

To effectively mitigate polarization and the danger it poses to addressing societal challenges, we must understand the nature of polarization and its consequences in the first place. Specifically, what are the facilitating and diminishing factors of polarization in response to societal challenges, and what are its consequences for attitudes towards behaviours?

A wide range of literature has shown that polarization is driven partly by people incorporating opinion-based groups into their self-concept[6]—in their beliefs about who they are and how they relate to others. We suggest that strong identification with one's group (ingroup) can pave the way for biased attitudes and discriminatory behaviours towards people with opposing viewpoints (outgroup). In addition, polarization results in strongly identified minorities who hold

Figure S6.1.1 How group identification might increase polarization



Source: Authors' creation based on Henkel and others (2023) and Sprengholz and others (2023a).

attitudes likely to undermine societal cohesion and democracy (figure S6.1.1). The rest of this spotlight reports evidence for these relations from studies on the Covid-19 pandemic and climate change.

From individual attitudes to opinion-based groups

Polarization frequently arises in discussions of topics central to individuals' identities when there is uncertainty surrounding available information. Consider climate change: both the adverse effects of climate change and the strategies to mitigate it hold major implications for people's lives. But predicting the exact consequences and outcomes is challenging given their inherently uncertain and multicausal nature. In social and information-rich environments characterized by such uncertainty, individuals tend to come together and form bonds. A key aspect of this shift from individual attitudes to social categorization is that people tend to identify with other people who share their beliefs, opinions and attributes, often leading to similar behaviours among them. This phenomenon of group formation and identification reflects how people seek common ground and solidarity when grappling with complex, uncertain issues of personal significance.

A large body of literature in psychology has shown that people's degree of group identification can be reliably measured using surveys.[7] Building on established group identification scales,[8] we developed a five-item survey to assess identification with opinion-based groups (for example, "I have a lot in common with people who are vaccinated" or "I have a lot in common with people who think the federal government's climate policy has gone too far"). Participants were asked to indicate their level of agreement with each item on a seven-point scale from 0, "do not agree at all," to 7, "very much agree." The items capture different dimensions of group identification.

With both Covid-19 vaccination[9] and climate policies,[10] many individuals hold high group identification (with an average level of group identification greater than 4). A December 2021 study in Germany found that 56 percent of unvaccinated participants and 67 percent of vaccinated participants reported strongly identifying with their own vaccination status. In a similar vein, a study in Germany on climate policies found that 53 percent of people who demanded stricter climate policies and 63 percent of those who wanted policies to do less reported high group identification. About 61 percent of people who considered current climate policies about all right strongly identified with their climate policy opinion group, compared with only 35 percent of people who did not care about climate policy.

So, not only is there a considerable prevalence of individuals with strong identification across different (opposite-minded) groups, but there is also substantial variation in the degree of identification between these groups. These differences could lead to differences in perceptions, attitudes and behaviours, explored next.

Perceived and actual discrimination between opinion-based groups

Being a part of and identifying with opinion-based groups is not inherently negative; in fact, it can serve as a source of connection and support, particularly during uncertain and crisis-ridden periods.[11] Group formation may benefit both groups and their individual members. For example, in the context of health decisions, people who identify as active and sportive may find groups of likeminded people that help them maintain their physical activity plans.[12] But the process of social categorization, grounded in attitudes, opinions and attributes, can also have unintended consequences. It might lead to distorted perceptions and discriminatory behaviours that reinforce one's own identity by establishing a sense of superiority over others.[13] This dual nature of group categorization and identification—support and cooperation within but discrimination and conflict between groups—underscores the importance of understanding its dynamics in response to societal challenges to mitigate potential harms.

In the Covid-19 vaccination study mentioned above, 82 percent of unvaccinated respondents perceived public discourse around vaccination as unfair, moralistic and patronizing, compared with only 23 percent of vaccinated respondents.[14] Importantly, this perception was moderated by respondents' vaccination status identification. That is, higher group identification was associated with perceiving the public discourse as slightly more positive among vaccinated respondents but with perceiving it as considerably more negative among unvaccinated respondents.

But how do such discriminatory perceptions relate to factual discrimination between opinion-based groups? To answer this question, participants had to distribute 100 euros between themselves and another person in a series of tasks. The other person was presented either as a member of the same group (same vaccination status or climate policy position—ingroup) or as a member of a different group (different vaccination status or climate policy position—outgroup). Intergroup discrimination was calculated by subtracting the amount allocated to an ingroup member in one task from the amount allocated to an outgroup member in the other task. In the vaccination study[15] vaccinated respondents showed larger intergroup discrimination (an average of 18.40 euros) than unvaccinated respondents (7.37 euros). That is, vaccinated respondents gave smaller amounts to unvaccinated respondents than unvaccinated respondents gave to vaccinated respondents, while the amount given to ingroup members was similar for both groups.

In the climate policy study,[16] there was also substantial intergroup discrimination, which varied according to the ingroup and outgroup. While people from the two extreme groups, who wanted either more or fewer climate protection policies, were most discriminatory toward each other, they discriminated equally against those who did not care about climate policy. Interestingly, those who found climate policies all right were more discriminated against by people who wanted less climate protection than by those who wanted more.

In both studies, discrimination against people in other-minded groups was strongly related to respondents' level of group identification. Specifically, the more that people identified with their ingroup, the stronger they discriminated against outgroups. These results provide support for our assumption that group identification undermines cooperative solutions across group boundaries.

Societal and political consequences

In the vaccination study, unvaccinated respondents were asked whether they would demonstrate or sign a petition against mandatory vaccination in December 2021.[17] This intention was used to predict whether they had attended a demonstration or signed a petition when they were surveyed again in February 2022. Respondents' behavioural intention predicted actual behaviour. Importantly, the effect was moderated by self-reported group identification, with a stronger intention–behaviour link between those who reported higher identification with the unvaccinated group. In another survey, vaccination status identification related to the perceived appropriateness of political action during the Covid-19 pandemic.[18] Vaccinated and unvaccinated respondents who had low identification with their vaccination status rated the political actions taken during the pandemic as similarly appropriate. In contrast, having a higher identification with vaccination status was associated with a larger perceived appropriateness for vaccinated respondents, whereas appropriateness ratings decreased for highly identified unvaccinated respondents.

Moreover, data collected from 10 countries showed that those who found past Covid-19 pandemic measures inappropriate had a stronger desire to punish politicians and scientists for their handling of the pandemic and were less willing to vote, instead favouring dismantling the entire political order. This suggests that identification with opinion-based groups is associated with several societal and political consequences that go beyond the specific opinion-based context and the interactions between these opinion-based groups.

Similar effects were observed for climate policy opinion groups.[19] Given that societies have seen extreme forms of protest for both more and less climate protection, we investigated whether identification played a role in how extreme protests are accepted. German participants who wanted less climate protection read a short text about a hypothetical subgroup called the freedom fighters, seeking the continued use of fossil fuels and demanding that citizens be able to freely decide how they travel, heat or eat. Participants who wanted more climate protection read about the climate fighters, advocating for immediate phaseout of fossil fuel use and demanding environmentally friendly travel, heating and eating.

Both subgroups drew attention to their causes by organizing demonstrations in many cities, damaging political party buildings and blocking roads to the parliament. About 17 percent of those wanting more climate protection and 22 percent of those wanting less showed increased support for the presented subgroup, 8 percent of those wanting more climate protection and 11 percent of those wanting less were willing to join a demonstration organized by the subgroup and 8 percent of those wanting more climate protection and 10 percent of those wanting less were willing to donate money for the defence of a subgroup member who was recently arrested and charged with criminal damage. Support for the respective subgroup increased with higher group identification, providing further evidence for the important role of group identification.

Potential implications

The question of how to tackle pressing societal challenges, such as climate change or global health crises, often gives rise to opposite opinions, which can lead to the formation of opposing opinion-based groups and societal polarization. Our argument, supported by evidence, suggests that as individuals increasingly identify with these groups, their attitudes and behaviours are more likely to be polarized. This creates a troubling cycle (see figure S6.1.1) where opinions are continually reinforced, resulting in groups that are unwilling to engage in peaceful interactions or seek common ground. In essence, identifying with opinion-based groups undermines the very cooperation that is crucial for addressing societal challenges on a universal scale.

Our understanding of the intricate interplay among individual attitudes, group identification and polarization is still in its early stages. Future research endeavours are essential to delve deeper into the various causal pathways at play and to pinpoint effective interventions for mitigating polarization. Social and behavioural scientists have proposed various interventions to reduce group-based discrimination and conflict—for example, through decategorization (emphasizing the unique individual characteristics of outgroup members) and recategorization (integrating ingroup and outgroup members within a common group). Some of these might be helpful in reducing polarization of opinions, but they remain to be critically tested in these domains. Another promising avenue involves participatory approaches, where individuals from opposing opinion-based groups are actively engaged in collaborative efforts to discover common ground. These approaches hold potential for bridging divides and fostering constructive dialogue among stakeholders.

NOTES

1. Pew Research Center 2014.
2. Falkenberg and others 2022.
3. Bor, Jørgensen and Petersen 2023; Flores and others 2022.
4. Lazer and others 2018.
5. Van Lange and Rand 2022.
6. Ellemers, Spears and Doosje 2002.
7. Stets and Serpe 2013.
8. Doosje, Ellemers and Spears 1995; Roth and Mazziotta 2015.
9. Henkel and others 2023.
10. Sprengholz and others 2023a.
11. Hogg 2007.
12. Eys, Bruner and Martin 2019.
13. Tajfel and others 1979.
14. Henkel and others 2023.
15. Henkel and others 2023.
16. Sprengholz and others 2023a.
17. Henkel and others 2023.
18. Sprengholz and others 2023b.
19. Sprengholz and others 2023a.

SPOTLIGHT 6.2

International collective action in a time of geopolitical upheaval

To characterize the geopolitical context, it is useful to draw from different views to explain (and sometimes to predict) the behaviour of states (or, with greater generality, politically autonomous units) in the international arena.

Realism—power is ever changing

The field of international relations considers how states interact internationally when there is no overarching authority. The field has multiple perspectives,[1] dating back at least to Thucydides, who inspired the realist disposition in international relations.[2] This perspective emphasizes how anarchy in world politics (due to the lack of an overarching authority) drives constant instability, given that states all struggle to advance their security and power (to compel others to act on one's behalf).[3] The distribution of power across countries, and its change over time, informs the security threats that states face—or believe they face—as a result of, for instance, the security dilemma, also known as the Thucydides trap.[4]

The distribution of power is ever-changing. More than whether the world is bipolar, unipolar or multipolar, what matters are the continually changing dynamics of power among states, which tend to be destabilizing. And human behaviour remains the same—driving states to be ever-more ambitious rather than sated. So, there is no endpoint of stability. Once a disagreement is settled, a new one is bound to emerge because of the changing dynamics of power between states, so that "disputes in world politics are less problems to be solved than relations to be managed."[5] Although not inevitably, these disputes can culminate in violent conflict.[6]

Liberalism—realizing aggregated preferences

The liberal perspective on international relations shares the realists' view that the international arena is anarchic but has a different disposition on state behaviour that makes the implications of anarchy less troubling. States are not agents as such but are assumed to represent the aggregate preferences of what emerges from domestic economic and political processes where individuals and groups (the ultimate agents here) exchange and interact to promote their diverse interests.[7] State behaviour is then determined by how each state pursues the realization of the preferences it represents, given the constraints imposed by the preferences that other states present. When preferences are mutually compatible, states coexist peacefully and cooperatively. When they are mixed (compatible in part, but with scope for mutual gains), states can negotiate some accommodation (more easily through coordination), perhaps facilitated by international institutions.[8] When they are incompatible and zero-sum (if one wins, the other loses), there is tension and potentially conflict.

Constructivism—recognizing that much is socially constructed

Some researchers have argued that social constructs, which can include norms, may constrain state behaviour and make "the world hang together."[9] Norms are sometimes supported by, and codified in, multilateral agreements and institutions.[10] In the more assertive elaborations of these constructive perspectives on international relations, even the notion of anarchy is presumed to be socially constructed—and what states make of it[11]—and thus to represent an entirely different disposition from realism and liberalism. But while constructivism is sometimes presented as an alternative to both realism and idealism, it is perhaps better understood as an approach (thus compatible with at least some theories in both realism and liberalism) that recognizes that shared beliefs and norms shape state behaviour, whether they seek to enhance their security and power (realists) or fulfil the preferences of their populations (liberals).[12]

Different dispositions

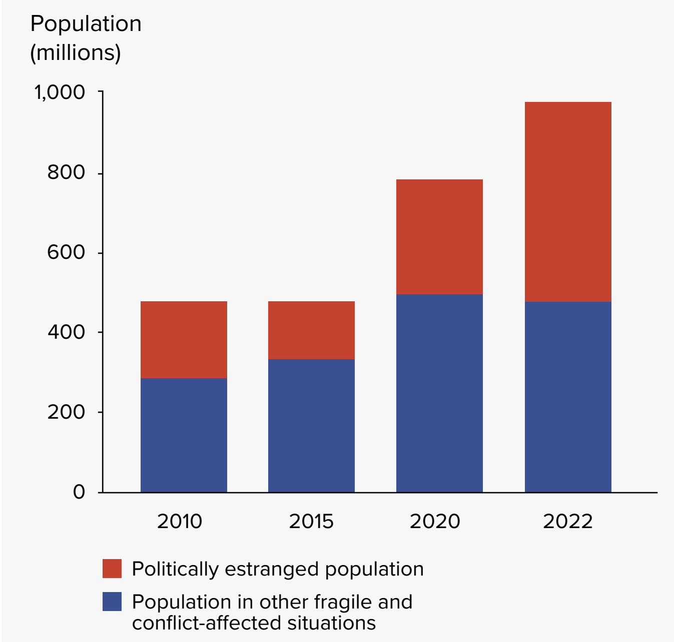
A crucial question is whether there is more to the interests of states than security in the realist perspective or more than the aggregation of individual preferences in aggregated state preferences in liberalism. Many theories under either disposition say no.[13] Others allow for interests or preferences to be determined not only by objective material conditions but also by the social context that shapes states' understanding of their interests or preferences.[14] For instance, some realists hold that states seek both power and purpose (resulting from notions of national identity, a set of widely shared beliefs within a country that are not reducible to the aggregation of individual views) and that these two goals together shape the interests of states. And the liberal theory of democratic peace holds that countries that self-identify, and identify others, as liberal democracies tend not to go to war, premised on a socially constructed notion of shared identity and values.[15]

The salience of the different dispositions ebbs and flows depending on what is actually happening in the world.[16] The realist disposition provided a helpful framework during the Cold War but was less successful in explaining its (for the most part) peaceful end, with some authors declaring that we had reached the end of history by the early 1990s[17]—anathema for any realist. The great strides in international cooperation even during the Cold War—for instance, the eradication of smallpox or the Montreal Protocol, as discussed in chapter 4—can be better understood through a liberal view. With the ongoing geopolitical upheaval and heightened geopolitical tensions, the realist disposition is acquiring more salience, with not just the possibility but the reality of violent conflict across countries very much present.

It may appear that models of country behaviour dominated by interests and competition are the most appropriate to characterize the current context. Although different theories in international relations may also offer plausible accounts, staying with this view would suggest that the international order built in the aftermath of World War II—centred on multilateralism, economic openness and security cooperation—appears to be fraying amid a new cascade of wars,[18] as well as the greater protectionism and surge in populist politics around the world.[19] By this account, the potential fragmentation in the international system that appears to emerge today would derive from structural shifts as new countries and coalitions seek to gain power and influence, as well as to respond to perceived threats to their security.[20] In addition, the scale and complexity of today's global challenges might be creating new pressures on international institutions that were built for an altogether different era.

The current geopolitical context is thus characterized by uncertainty, insecurity and potential for greater fragmentation and disorder. This is further compounded by the fact that many people live in countries whose governments experience unconstitutional changes in power, internationally contested elections or are under major sanctions (figure S6.2.1). The behaviour of some of these countries in the international context may be harder to predict or interpret, with the potential for greater regional instability or even violent conflict. Moreover, in addition to states, new agents play a role in providing global public goods, not just multilateral organizations but other entities, from multinational firms to civil society and philanthropic organizations. While the establishment of new international organizations has declined sharply in the 21st century, transnational public–private governance initiatives have exploded.[21]

Figure S6.2.1 Half a billion people live in politically estranged situations, about five times more than in 2010



Note: Politically estranged situations refer to countries where relations between donors of official aid and national authorities are frayed or broken because of unconstitutional changes in government, internationally contested elections or major sanctions.
Source: Cliffe and others 2023.

NOTES

1. A recent international relations textbook, Dunne, Kurki and Smith (2021), includes chapters on classical realism, structural realism, liberalism, neoliberalism, the English School, Marxism, poststructuralism, postcolonialism, normative international relations theory and green theory.
2. For a recent articulation of this perspective in its classical form, and its relevance in today's world in contrast with other perspectives, see Kirshner (2022), from which the description of the realism disposition in this spotlight is drawn.
3. This is the traditional definition of power proposed by Weber (2016), rearticulated by Dahl (1957, pp. 202–203): "my intuitive idea of power, then, is something like this: A has power over B to the extent that he can bet B to do something that B would not otherwise do." For a review of other approaches to defining and conceptualizing power, see Guinote (2017).
4. This occurs when efforts taken by a state to increase its security are perceived by others as making them less secure, even if there is no aggressive intention on the part of the state enhancing its security.
5. Kirshner 2022, p. 16.
6. Acemoglu and Wolitzky 2023.
7. Moravcsik (1997), which forms the basis of the description of the liberal disposition in this paragraph.
8. Katzenstein, Keohane and Krasner 1998.
9. Ruggie 1998.
10. Ruggie 1992.
11. Wendt 1992.
12. Finnemore and Sikkink 2001.
13. That is why the word "disposition" is used, given the multiple theories and variations that fit under each, in line with Kirshner (2022).
14. Checkel 1998.
15. Both examples are from Kirshner (2022).
16. Keohane 2020.
17. Fukuyama 1992.
18. Poast 2023.
19. Ikenberry 2018.
20. See Colgan and Keohane (2017), Ikenberry (2018), Jones and Malcorra (2020) and Shidore (2023).
21. Reinsberg and Westerwinter 2021, p. 73.

SPOTLIGHT 6.3

Geopolitics and the early history of the United Nations: Friend or foe?

Andrew Thompson, *Oxford University*

"The United Nations was not formed because nations were united." This is one way of explaining how the different countries of the world came together in San Francisco, California, in 1945 to discuss their common problems. Or, in the bleaker words of the second UN Secretary-General, the Swedish diplomat Dag Hammarskjöld, "the United Nations was not created in order to bring us to heaven, but in order to save us from hell."[1]

In truth, the United Nations has always been defined by geopolitics, not because it is simply or straightforwardly a creature of such but rather because geopolitics highlight its dual function sometimes to challenge and sometimes to uphold the geopolitical regime surrounding it. Put another way, the United Nations, throughout its history, has taken on tasks that states are unable or unwilling to; by the same token its ways of working reflect the rival conceptions of international cooperation latent within a prevailing state system.

What this means in practice is that the fledgling United Nations was animated as well as constrained by interstate rivalry and enabled as well as restricted by geopolitical change. Like many of the international organizations that either emerged from or expanded their remits after World War II, the United Nations was one of the makers—and not just the receivers—of the new global orders that sought to re-civilize Europe and to "make an old world new."

In a fundamental sense, the United Nations was unlike the League of Nations, which preceded it.[2] The fractured world order that emerged from World War I certainly led to changes in the international sphere: a raft of new regulatory agencies, an emergent discourse of protection for minority groups, and the rhetoric and reality of anticolonialism. But although the League of Nations held out the hope of a more international society, sharing liberal and democratic values with the interests of nations locked together, any such collective guardian of the peace required all sovereign states to sign up. This never happened.

After 1919 the world divided itself into different geopolitical zones, of which the membership of the League of Nations—anchored in Europe and practically coextensive with the British and French colonial systems beyond—was only one. The geopolitical realignments post-1945 were distinctive in two respects. First, the growth of global issues sped up markedly. Second, in championing a new global order, the United Nations was never to be captured by any single, major power bloc, however much the breakneck expansion of the United States meant that in this sphere, as in many others, US influence held a major sway.

The post–World War II global order was considerably more complex than that of the interwar era, notwithstanding the broadly bipolar equilibrium that eventually established itself. Many historians focus on the year 1945 as a sort of ground zero. Yet the decisive shifts happened later, with the gathering speed of decolonization, an intensifying Cold War and new forms of globalization. Despite attempts by European powers to retain control of their colonies, the 1950s demonstrated that old imperial models were fast losing traction. Cold War tensions between the capitalist and communist worlds were also heating up, and new regional configurations—including the Non-Aligned Movement—were emerging from a combination of the tectonics of empire on the one hand and superpower rivalry on the other.

So how do we characterize the state of postwar geopolitics, which the United Nations set about trying to tame? Before a breakpoint in about 1960, there was a US zone encompassing Latin America and much of the Pacific, except the western fringe and Korea, which were contested by China. Alongside the US zone was a UK zone, which extended over much of the Middle East until 1956; East, South and much of Central Africa; the Indian Ocean; and part of South East Asia. And there was a Soviet zone, which included China until the Sino-Soviet split of 1955–1956 divided the communist world. Not until after 1960, just as the United Nations was experiencing a massive increase in membership, particularly of African members, did these geopolitical zones solidify. The US global reach was consolidated, the Soviet Union became more active in the "Third World" and, beyond that, there was the recovery of Germany and Japan.

This sounds like distinctly unpropitious territory for global governance—indeed, by 1970 the veto power of UN Security Council members had begun to be exercised more regularly, a sure sign of the economic woes and escalating political tensions that marked the rest of that decade. Yet at a time of accelerating globalization, however much the state depended on power, power no longer depended on the state. International organizations were not passive bystanders in the face of the geopolitical upheaval of the 1970s: the oil and debt crises, civil wars and frequent military coups, and the global struggle between the North Atlantic Treaty Organization and the Warsaw Pact. Instead, they possessed power in their own right: the power to spotlight suffering and to make indifference a costly posture and the power to recognize new sovereignties and to make those sovereignties more recognizable.

The United Nations especially was coming of age. Carving out a more activist role for itself and seeking a wider meaning in world affairs, it implicitly, if not explicitly, challenged the state domination of the global political system. By arranging institutions correctly, UN civil servants—many of whom chose international over national politics—believed that they could better pursue collaborative solutions to the world's problems and better manage the consequences of increasing interdependency. The United Nations was in effect moving into territory previously occupied by nation-states; indeed, the weaker the system of interstate diplomacy, the more postwar international organizations were forced to assume the burdens of its lapses and failures. In this situation geopolitics was to take on a double significance—driving the calamities that put international organizations such as the United Nations in business yet also shaping the priorities for and the forms of international cooperation.

But to play an active part in world ordering required the United Nations to go far beyond anything the League of Nations had envisaged; the amalgam of functions it came to discharge grew to encompass peace and security, state-building and development, the proclamation and protection of basic human rights and the provision of emergency humanitarian relief. Different legal and institutional architectures developed around each of these functions, which made them seem more distinct than they actually were. The ways they played off each other can, however, be studied through the first generation of UN peacekeeping operations.[3]

In many ways the United Nations came of age, at least operationally, through its peacekeeping operations. Peacekeeping, as an instrument of conflict resolution, was closely identified with the United Nations. Because the United Nations did not have any of the built-in assets to act like a superpower, peacekeeping had a fundamentally self-restricting character: it was not intended to enforce the Security Council's collective will, which owing to the Cold War did not exist. Instead, UN peacekeeping, which relied on member states for personnel, supervised ceasefires, oversaw truces and interposed troops between warring parties.

Notwithstanding this self-restricting character, UN peacekeeping could not help but be affected by the power vacuums created by colonial disengagement. Nor could it sidestep the difficult question of the meaning of self-determination, at a time when the concept was elevated as an international norm, yet postcolonial states risked fracturing as a result of secessionist movements.

The aim of the initial operations was to place a buffer between belligerent parties, while ensuring host-state consent, the impartiality of UN forces and the use of force only as a last resort in self-defence. That all changed in Congo in 1960, when the United Nations adopted a far more expansive conception of peacekeeping.[4] Not only did the Congo crisis, as it was known at the time, transform the meaning of decolonization in Africa; it also transformed the fortunes of the United Nations. As the Belgians abruptly withdrew, leaving chaos and catastrophe behind, and East and West competed for African allegiance, the United Nations embarked on an unprecedented operation—a four-year mission, deploying a multinational force of almost 20,000 (predominantly African) troops to restore the unity of the country and enable the newly independent government to function. For the first time in UN peacekeeping, Ethiopian, Indian, Irish and Swedish forces, under the organization's control, were authorized to use offensive force to bring an end to the secession of the resource-rich province of Katanga.

What was arguably the most controversial UN peacekeeping operation—prior to those in the 1990s—led to multiple tragedies: the death of Hammarskjöld, when his plane crashed in Northern Rhodesia (present-day Zambia) on a mission to bring peace to the Congo, in circumstances that some continue to suspect involved foul play; a major international human rights controversy about violations committed by UN forces; and the United Nations teetering on the brink of bankruptcy, with peacekeeping having cost a staggering $10 million a month (over $100 million in today's dollars).

Like so many other postwar conflicts that the United Nations had to decide whether to insert itself into, the Congo crisis was internationalized from the very start. Paradoxically, peacekeeping had curbed neocolonial and Cold War involvement in Africa while becoming a focus of that involvement. The "muscular action" mandated by the Security Council prevented the breakup of Congo and was assessed positively at the time as a result. Yet the morphing of defensive peacekeeping into offensive fighting plunged the United Nations into crisis, painfully revealing the limits of the Hammarskjöld model: enforcement was rapidly abandoned in favour of observation and interposition.

Despite this negative military verdict, for Hammarskjöld security was never an end in itself but a necessary precondition for providing a structure that might hold Congo together. If anything, the Secretary-General saw the long-term contribution of the United Nations as lying more in the civilian field, comprising a complex state-building programme (setting up and running a parallel administration) and an equally complex relief operation (particularly to prevent the total collapse of the Congolese health system). Expelling Belgian mercenaries and defeating the Katangese secessionists were simply stepping stones towards these greater goals.

Understanding postwar peacekeeping operations is historically instructive: it reveals how the United Nations struggled to manage decolonization and to serve as a bridge between East and West during the Cold War. The legacy of that peacekeeping is also important for how the United Nations conceives of itself today. What postwar peacekeeping shows (even when it backfires) is that the United Nations possesses power—not only to declare a crisis but, crucially, to define the nature of the crisis to which it responds.

In declaring the Congo crisis, the United Nations positioned itself as the prime responder—thereby providing the institutional matrix into which other international organizations, such as the Red Cross, had to accommodate themselves. In defining the Congo crisis, the United Nations went further—to set out exactly what type of response was called for. If those who recognize a crisis possess the power to intervene, those who construct a crisis can similarly go a long way to determine how it should be managed.[5]

This question of crisis ordering, of what gets linked to what and why, is no less pertinent to today's geopolitics, an age of polycrisis in which global shocks are deeply interconnected. International norms are increasingly disregarded, not just in Ukraine and Gaza but in more than 100 armed conflicts, only some of which make the headlines. In the 21st century geopolitical rifting is complicated by a global environmental crisis that is escalating humanitarian needs and threatening the gains made in world poverty reduction and human development over the last quarter century.

Our capacity to cope, therefore, rests on recognizing that climate and conflict now often go hand in hand, with climate change set to become a risk multiplier for tomorrow's conflicts as well as an additional complication for existing ones. The greatest complications nevertheless remain geopolitical. However much human activity is the dominant force shaping our planet, considerations of territorial security are repeatedly trumping human security. As extreme weather events multiply, tackling the negative impacts of climate change will mean creating clearer pathways to intervention amid a rising tide of populism and intensifying polarization. New paths must be explored and creative methods given a chance.

Geographical representation and the power of engagement will be key considerations in any reform process, especially if the fundamental imbalances and historical injustices in the current global order are to be addressed. Much will hinge on the ability—and agility—of the United Nations to reinvigorate a postwar institutional architecture, now nearly 80 years old, and to close the gap between what multilateral institutions are expected to do and what they are capable of doing. Only by closing that gap, and adopting more radically inclusive approaches to problem-solving, will faith in multilateralism be enhanced and effective global cooperation improved. As the early history of the United Nations reveals, this is emphatically not the first time the organization has faced a geopolitical challenge of this scale, complexity or urgency.

NOTES

The author is grateful to Mr. Adama Dieng, former Special Adviser to the UN Secretary-General for the Prevention of Genocide, for his insightful comments on an earlier draft of this spotlight.

1. Hammarskjöld 1954.
2. For the comparison, see Darwin (2007).
3. See, especially, MacQueen (2014).
4. For a new account of the UN Congo operation, relating the military to the civilian aspects of peacekeeping, see Thompson (forthcoming).
5. For crisis declaration and definition, and the part each played in constructing new world orders, see the Changing Global Orders project, funded by the Oxford Martin School, of which the author is one of the four directors https://www.oxfordmartin.ox.ac.uk/changing-global-orders/ (accessed 24 January 2024).

(Mis)perceiving others

Leonardo Bursztyn, *University of Chicago*

Most people are influenced by others when making important decisions or when forming opinions. Perceptions about others should play a key role in these contexts. Indeed, people are influenced by what they think others think or do. But what if people misperceive others? If these misperceptions are common, many people might be making decisions based on incorrect information. More than that, important behaviours could then conceivably be changed by simply recalibrating people's beliefs about others.

This spotlight begins by examining misperceptions about gender norms. The conclusion is clear: misperceptions about gender norms are globally ubiquitous, and simple information provision could lead to improvements in women's labour market participation. The spotlight then summarizes a meta-analysis of the recent literature on misperceptions that concludes that misperceptions about others are widespread, asymmetric and much larger when about outgroup members. Moreover, experimental treatments to recalibrate misperceptions generally work as intended and often lead to important changes in behaviours. So, interventions correcting misperceptions could build empathy and cooperation across groups and reduce conflict and hostility.

Misperceived gender norms: Global evidence

A newly designed module from Gallup World Poll examines actual and perceived gender norms using nationally representative samples from 60 countries, which together cover more than 80 percent of the world population.[1] One aspect of gender norms examined is how people view whether women should be allowed to work outside the home and how people perceive others' views on the topic. The patterns are striking: in every single country examined the (often overwhelming) majority of people support the idea of women working outside the home. And in every single country, people underestimate the level of support by others.

The next question that comes to mind is whether gender norms are themselves the anomaly in terms of the accuracy of perceptions: perhaps people particularly misperceive others' opinions in this domain but not in other contexts. The results from a recent meta-analysis of the literature help answer this question.

Misperceptions about others across settings

A detailed review of 81 papers published across the social sciences over the past 20 years measures perceptions about others across a wide range of contexts.[2] The picture is clear: across societies individuals widely misperceive what others think, what others do and even who others are. These misperceptions cover a variety of topics, from beliefs about the size of immigrant populations to perceptions of partisans' political opinions to perceptions of the vaccination behaviours of others in a community. The analysis yields a few key stylized facts.

- Misperceptions about others prevail in various domains and are not simply due to measurement error. Assessing misperceptions requires eliciting perceptions about others and knowing the corresponding truth. For example, perceptions of a population's racial composition can be compared with an objective truth—that is, the population shares of each racial group, as reported in census data. For perceptions of other people's opinions about a topic, the truth refers to the relevant population's reported views (for example, their average level).
- Misperceptions about others tend to be asymmetric, with beliefs leaning heavily to one side when compared with reality. The asymmetry of misperceptions is the ratio of respondents on one side of the truth to those on the opposite side. In this definition the higher number always acts as

the numerator, regardless of whether beliefs are under- or overestimations of reality. Therefore, a ratio of 1 signifies a perfect balance, and a higher ratio indicates a more pronounced imbalance. Misperceptions about others typically tilt one way, and the tilt is large.

- Misperceptions about ingroup members are markedly less pronounced than those about outgroup members. In more than half the studied areas, most respondents have more accurate perceptions about their ingroup than about outgroup members. Additionally, perceptions about outgroup members tend to exhibit greater spread across respondents than those about ingroup members. This indicates that views about ingroup members are not only more precise on average but also more consistently aligned with reality. Moreover, perceptions of ingroup members are more symmetrically distributed around the truth than those about outgroup members.
- One's own attitudes and beliefs are strongly, positively correlated with misperceptions about others' attitudes and beliefs on the same issues. Moreover, respondents tend to think that other ingroup members share their characteristics, attitudes, beliefs or behaviours, while those in the outgroups are the opposite of themselves.

Does information provision aimed at correcting misperceptions work? Does it lead to behavioural changes? The answer is that these interventions are generally effective—but there are some nuances in the findings.[3] Interventions that are more qualitative and narrative, such as those that involve anecdotes, vignettes and storytelling, tend to have larger effects in correcting misperceptions. However, while some treatments lead to large changes in behaviours, large changes often occur only in studies that examine behavioural adjustments shortly after the interventions, suggesting a potential rigidity in the mapping between misperceptions and some behaviours: even though beliefs may have changed, the deeper underlying drivers of behaviour may not have. The findings mirror other recent work suggesting that qualitative and narrative-driven interventions may be particularly effective and may have longer lasting effects.[4] Understanding the most effective ways to correct misperceptions and generate long-lasting behavioural changes is an important avenue for future research—and one that could have meaningful policy implications.

Another, more conceptual path for future work involves better understanding the general forces that lead to persistent misperceptions. The origin, rigidity and persistence of misperceptions about others can in principle be explained by different conceptual frameworks, such as stereotyping,[5] motivated reasoning[6] and pluralistic ignorance.[7] But most existing study designs cannot disentangle the role of these different models. Enhancing understanding of the role of these mechanisms would allow for better policy design.

A final area for consideration is how to think of welfare in contexts of widespread misperceptions. One such normative consideration—out of the scope of the existing literature—is to examine whether informing people about the true state of the world to correct their perceptions is something that is always desirable. It is understood that many authoritarian regimes may maintain their political control by directly manipulating citizens' perceptions of each other.[8] In such contexts, would interventions that correct some perceptions about others expand political rights and freedom to more people around the world? To the extent that misperception might be self-fulfilling, can policy be designed to engineer misperceptions that lead to more socially desirable outcomes (as in the contexts of racial tolerance and gender equality)?

Lessons for building intergroup cooperation and reducing hostility

People tend to have much larger misperceptions about outgroup members than about ingroup members. In many cases these misperceptions exaggerate perceived differences across groups, as for Democrats and Republicans in the United States.[9] Such a phenomenon may not be surprising, given the growing focus on an us versus them mentality by the media and politicians. One potential implication relates to a long-standing hypothesis in social psychology that perceived similarity is a key input for someone to feel empathy towards outgroups. Information provision and intergroup contact can lead to an increase in perceived similarity with outgroups, which in turn generates greater altruism and empathy towards those groups.[10] Correcting misperceptions about outgroups thus has the potential to reduce hostility and increase cooperation and altruism—an important outcome in a world increasingly divided and polarized.

Across societies and across domains, people widely misperceive what others think, what others do and even who others are. The body of work reviewed here indicates that in many important contexts changes in behaviours and attitudes might be achieved with simple and cost-effective policy interventions through information provision in the form of statistics, vignettes, anecdotes or narratives.

NOTES

1. Bursztyn and others 2023. This work extends findings from Saudi Arabia, where the vast majority of young married men privately support women working outside of home but incorrectly believe that the majority of other men (including their own neighbours) oppose it (Bursztyn, González and Yanagizawa-Drott 2020).
2. Bursztyn and Yang 2022.
3. Bursztyn and Yang 2022.
4. Graeber, Roth and Zimmermann 2023.
5. Bordalo and others 2016.
6. Bénabou and Tirole 2016.
7. Bursztyn, Egorov and Fiorin 2020; Bursztyn, González and Yanagizawa-Drott 2020; Kuran 1997.
8. Kuran 1997.
9. Bordalo, Gennaioli and Shleifer 2022; Bordalo, Tabellini and Yang 2020.
10. Andries and others 2024.

Notes and references

Notes

SNAPSHOT

1 See UNDP (2020, 2022a).

2 Watson and others 2022.

3 See the United Nations Development Programme's Global Dashboard for Vaccine Equity at https://data.undp.org/insights/vaccine-equity.

4 Vaidyanathan 2024. These pledges still fall short of the annual loss and damages associated with climate change, which have been estimated to be as high as $400 billion a year.

5 https://about.bnef.com/blog/global-clean-energy-investment-jumps-17-hits-1-8-trillion-in-2023-according-to-bloombergnef-report/ (accessed 31 January 2024).

6 HDI data up to 2022 are from table 1 in the *Statistical Annex*. Values for 2023 are projections using the same data sources used for that table.

7 Msemburi and others 2023.

8 See UNDP (2022a).

9 Some 3 billion people report feeling worried today, an increase of 687 million people over the past decade; 2 billion people report sadness, 540 million people more than a decade ago; and 2.9 billion people experience stress, an increase of 596 million people over the past decade (Human Development Report Office calculations based on data from Gallup 2023). Daly and Macchia (2023) document an increase in the prevalence of feelings of emotional distress between 2009 and 2021.

10 See Kurlantzick (2022), Nichols (2021) and UNDP (2023b).

11 Funke, Schularick and Trebesch 2023.

12 Andre and others 2024.

13 Fernbach and Van Boven 2022.

14 Gur, Ayal and Halperin 2021.

15 Graeber, Roth and Zimmerman 2023; Vogt and others 2016.

16 Demeritt and Hoff 2023. Expanding agency is about enhancing the ability of people to be agents of change. Policies have not stressed enough the central role of agency as a key pillar of human development. Narrowing agency gaps allows people to participate in public reasoning and decisionmaking through institutions they have confidence in.

17 On the importance of co-ownership for political institutions, see Allen (2023).

18 On the mobilization of the future as a political idea, see White (2023).

OVERVIEW

1 Persson and Bennich 2023.

2 IRC 2023a; UNHCR 2023b, 2023c.

3 Msemburi and others 2023; Wang and others 2022;

4 Bollyky and others 2022; Lenton, Boulton and Scheffer 2022.

5 Bollyky and others 2022.

6 Henkel and others 2023.

7 Kumar and others 2022.

8 Druedahl, Minssen and Price 2021.

9 Gleeson and others 2023.

10 NASA 2023.

11 UNDP's Human Climate Horizons is an interactive visualization platform (https://horizons.hdr.undp.org/) consisting of a dynamic digital public resource that projects up to the end of the 21st century impacts of climate change on people and its implications for human development.

12 Albrecht 2012, p. 250. See also Clayton and Karazsia (2020), Stanley and others (2021) and Wullenkord and others (2021).

13 Hickman and others 2021.

14 Funke, Schularick and Trebesch 2016; Guiso and others 2019; Gyöngyösi and Verner 2022; Mian, Sufi and Trebbi 2014.

15 Funke, Schularick and Trebesch 2023.

16 Cerra, Fatás and Saxena 2023.

17 Aiyar and others 2023.

18 Aiyar and others 2023; Xing, Gentile and Dollar 2021.

19 Ganapati and Wong 2023.

20 Chen, Mrkaic and Nabar 2019; Lane and Milesi-Ferretti 2018.

21 Holland and Pazarbasioglu 2024.

22 WTO 2023.

23 As of 2023, based on data from the International Telecommunication Union (https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx, accessed 16 November 2023).

24 IOM 2022.

25 UNDP 2009.

26 Koczan and others 2021.

27 Engler and others 2020.

28 Stiglitz 1998.

29 See Alcalá and Ciccone (2004), Bartley Johns and others (2015); Frankel and Romer (2017) and IMF (2001). See Birdsall and others (1993) for reflections on the East Asian miracle. Trade also had differential impacts across population groups (Engel and others 2021).

30 White and others 2023.

31 Walter 2021b.

32 Alstadsæter and others 2023.

33 Minerals, energy, key crops, electronics, pharmaceuticals, basic metals, chemicals, financial services, professional services intellectual property (Seong and others 2022).

34 Contributions to conceptualizing global public goods gaining force at the turn of the 20th century (Kanbur, Sandler and Morrison 1999; Kaul, Grunberg and Stern 1999; Sandler 1997). A first wave of policy interest in global public goods is reflected in Kaul and Conceição (2006), Kaul and others (2003) and Zedillo and others (2006). For a recent review of the increasing importance of global public goods in today's world, see Buchholz and Sandler (2021).

35 Boese and others 2022; Card and others 2022; Iyengar, Sood and Lelkes 2012; McCoy and Somer 2019; Wagner 2021.

36 Levin, Milner and Perrings 2021.

37 See Van Bavel and others (forthcoming) for the costs of polarizing a pandemic.

38 Schimmelpfennig and others 2022.

39 As argued in Bednar (2021).

40 Bednar 2021.

41 Hobolt, Leeper and Tilley 2021.

42 Henkel and others 2023.

43 De Vries, Hobolt and Walter 2021.

44 Bearce and Jolliff Scott 2019.

45 Deitelhoff 2020; Dellmuth and Tallberg 2015; Nye Jr 2001; Schneider 2018.

46 See Conceição and Mendoza (2006) and chapter 3.

47 Sparkman, Geiger and Weber 2022.

48 Graeber, Roth and Zimmerman 2023.

49 The notion of agency linked with collective outcomes has been referred to as "collective agency." See, for instance, Ibrahim (2006),

Leßmann (2022), Pelenc, Bazile and Ceruti (2015) and Rauschmayer and others (2018).

50 See also Prados de la Escosura (2022).

51 O'Madagain and Tomasello 2022; Tomasello 2022.

52 UNDP 2023a.

53 UNDP 2023a.

54 UNDP 2023a.

55 UN 2023b.

56 For instance, the Stiglitz Commission for the Reform of the International Financial and Monetary System (convened in 2008, in the middle of the 2007–2008 global financial crisis) suggested establishing a Global Economic Coordination Council as an option (Stiglitz Commission 2009).

57 Through the 171 members of the Global Forum on Transparency and Exchange of Information for Tax Purposes. In 2022 information on almost EUR 12 trillion in assets was automatically exchanged. See OECD (2024b).

58 United Nations Secretary-General 2023.

59 Alstadsæter and others 2023.

60 Sen 1999, p. 18.

PART I

CHAPTER 1

1 HDI data up to 2022 are from table 1 in the *Statistical Annex*. Values for 2023 are projections using the same data sources used for that table.

2 See also Independent Panel for Pandemic Preparedness and Response (2021).

3 UNDP 2022a.

4 Rockström and others 2024; UNDP 2020b.

5 NOAA National Centers for Environmental Information 2023.

6 Ebi and others 2021.

7 NASA Earth Obervatory 2023.

8 Oatis 2023.

9 Mlaba 2023.

10 Obermeier and Rustad 2023.

11 If the war in Yemen continues until 2030, human development will be reversed by 40 years—or by one and a half generations (Moyer and others 2019.; UNDP and ESCWA 2023).

12 UN 2023d.

13 UN 2023d.

14 Sen (1999) argues that development is the process of expanding human freedoms in a variety of dimensions, including political freedom (such as freedom from tyranny and oppression), economic freedom (such as freedom from poverty and hunger), social opportunities (such as ability to access social services), transparency (such as freedom of expression) and security.

15 WEF 2023c.

16 Msemburi and others 2023.

17 Least Developed Countries have low levels of income and face vulnerabilities that make them "the poorest and weakest segment" of the international community (https://www.un.org/ohrlls/content/about-least-developed-countries).

18 See discussions in UNDP (2022a, 2022b).

19 See, for instance, Cerra, Fatás and Saxena (2023) and Göcke (2002).

20 Cerra, Fatás and Saxena 2023.

21 See, for instance, Yagan (2019) on employment hysteresis in the United States after the 2007–2008 global financial crisis.

22 See, for instance, Anzoategui and others (2019).

23 For instance, Schwandt and Von Wachter (2020) analyse the effects of recessions on health of those cohorts entering the labour market during a large recession.

24 For instance, in the context of the post–2007–2008 global financial crisis, Ball (2014) studies 23 OECD countries and finds evidence of both a loss in potential output and a reduction in the growth rate of potential output, which compounds over time.

25 See, for instance, Conceição and Kim (2014), Conceição, Kim and Zhang (2010), Conceição, Mukherjee and Nayyar (2011) and Molina and others (2014). See also the estimated effect on human development of political business cycles in Africa, studied by Iddrisu and Mohammed (2019) for 38 African countries from 1990 to 2015. See the effects of global shocks on a set of national human development indicators across 29 countries in West-Central Europe and Commonwealth of Independent States in Horváth, Ivanov and Peleah (2012). Additionally, global economic fluctuations have been found to affect HDI values through different components of the balance of payments in Egypt (see Emara and Mohamed 2023). See Kim and Conceição (2010) on the effects of conflict shocks on human development.

26 Molina and others 2014.

27 For instance, Camarena and others (2022) analyse the trend and cyclical component of social indicators such as the unemployment rate, income poverty and HDI value for 15 Latin American countries. They find that while the cyclical component explains 72.1 percent of the variance in the unemployment rate and 32.1 percent of the variance in monetary poverty, it explains only 3.3 percent of the variance in HDI value. Leite and Ferreira (2023), using within-country data for five regions in Brazil, find that HDI value is the social indicator with the lowest cyclical component among those analysed.

28 For instance, the origin of the modern use of economic cycles dates back to one century ago, when they were seen as alternating periods of crisis and prosperity in the studies of the National Bureau of Economic Research (Cerra, Fatás and Saxena 2023).

29 UNDP 2022a.

30 PISA is an OECD assessment that compares basic education attainment among 15-year-olds around the world by measuring abilities in basic mathematics, reading and science.

31 Johnson 2019.

32 Msemburi and others 2023. This figure is based on excess mortality computations. The number recorded by national authorities was much lower. See Johns Hopkins University (2023).

33 Rosenwald 2021.

34 Al Amin and others 2021; Lau and others 2022; Pujolar and others 2022.

35 Kaczorowski and Del Grande 2021; Ziedan, Simon and Wing 2022.

36 Keynejad 2023.

37 WHO 2022b.

38 Santomauro and others 2021.

39 UNICEF 2021.

40 Lee 2020.

41 Patel and others 2022, p. 2.

42 See Ravens-Sieberer and others (2023). For instance, anxiety prevalence increased from 15 percent before the pandemic to 30 percent in December 2020–January 2021 then fell to 25 percent in September–October 2022.

43 Schady and others 2023.

44 Schady and others 2023.

45 OECD 2023.

46 Dorn and others 2021.

47 Dorn and others 2021.

48 Bryant and others 2022.

49 Bryant and others 2022.

50 IMF 2021c.

51 IMF 2021c.

52 ILO 2023.

53 Alon and others 2022.

54 Alon and others 2022.

55 UNDP 2023a.

56 Flor and others 2022; Goldin 2022.

57 Gross national income in real purchasing power parity terms (Human Development Report Office calculations based on projections by the International Monetary Fund, World Economic Outlook database, October 2023, https://www.imf.org/en/Publications/WEO/weo-database/2023/October, accessed 1 December 2023).

58 Arellano, Bai and Mihalache 2020.

59 UN Global Crisis Response Group 2023.

60 UN Global Crisis Response Group 2023, p. 4.

61 Ecker and others 2023.

62 Molina and Jensen 2023. Somalia is excluded because an HDI value was not calculated for 2019.

63 Guterres 2023a.

64 Aas Rustad 2023; Arasmith, Østby and Aas Rustad 2022.

65 Institute for Economics & Peace 2023.

66 Buhaug and Gleditsch 2008.

67 Institute for Economics & Peace 2023.

68 De Maio 2010.

69 Hyndle-Hussein 2015.

70 SIPRI 2023.

71 The number of deaths in battle grew substantially in 2022. An estimate released in mid-2023 placed the number at 177,000–303,000 (Davies, Pettersson and Öberg 2023). The number of deaths is likely to be closer to the upper bound, based on reports of higher-than-anticipated estimates for the main conflicts that year (Cooper and others 2023; Pilling and Schipani 2023). Although uncertain, these estimates indicate that deaths in battle are reaching levels not seen since the end of World War II. This is consistent with the fact that in 2022 the world recorded the highest level of state-based armed conflicts since 1945. See Obermeier and Rustad (2023) for long-term conflict trends.

72 Persson and Bennich 2023.

73 Persson and Bennich 2023; Uppsala Conflict Data Program 2023.

74 Food and humanitarian aid often fail to reach affected population on time due to political obstacles, increasing civilian death tolls, as seen in Ethiopia, Gaza, Syrian Arab Republic, Sudan and Yemen.

75 Internationalized conflicts are civil conflicts with at least one or more third-party governments involved in the conflict through the contributing or deploying of combat personnel.

76 Obermeier and Rustad 2023.

77 IISS 2023.

78 Regan 2002.

79 Obermeier and Rustad 2023.

80 IRC 2023a; UNHCR 2023b; UNHCR 2023c.

81 OCHA 2023.

82 Nisbet, Lestrat and Vatanparast 2022.

83 UNHCR 2023a.

84 IOM 2022.

85 UNHCR 2023b.

86 OCHA 2023.

87 International Rescue Committee 2023.

88 Intergovernmental Panel on Climate Change 2023.

89 Aichele and Felbermayr 2015.

90 Jakob and others 2022.

91 NASA 2023.

92 Dance 2023.

93 UNDP 2022b.

94 While the focus of the discussion is between-country interdependence and inequalities, there is also interdependence between people and planet that is being mismanaged, resulting not only in climate change but also in other environmental challenges, such as declines in biodiversity (see Caillon and others 2017; Redvers and others 2022; Richardson and others 2022).

95 He and Silliman 2019; Reimann, Vafeidis and Honsel 2023.

96 UNDP 2024. For example, Human Climate Horizons platform projections show that the share of population living in 1-in 20-year floodplains in Kiribati could increase from 2.27 percent in the coming decades to 9.35 percent by the end of the century under a moderate emissions scenario.

97 Persson and Bennich 2023.

98 UN 2023d.

99 Persson and Bennich 2023.

100 World Bank 2022.

101 World Bank 2022

102 UN 2023c.

103 World Bank 2022.

104 UN 2023c.

105 World Bank 2022.

106 Global income inequality, as measured by the ratio of the average income of the richest 10 percent to the average income of the poorest 50 percent (Chancel and others 2022).

107 Chancel and others 2022.

108 Persson and Bennich 2023.

109 Chancel and others 2022. These patterns have important links to the process of globalization itself. Evidence suggests that from 1980 to 2010 between-country inequality fell as emerging economies were growing and catching up to high-income economies. During the same time global integration shifted low-skilled jobs to labour-abundant countries, the lower income earners in advanced countries lost income while the lower and middle-income earners in labour-abundant countries gained. This simultaneously drove an increase in within-country inequality in high-income economies. Within-country inequality also rose in low- and middle-income countries as the gains for the rich became disproportionately larger than those for the poor.

110 Chancel and others 2022.

111 UNDP 2023a.

112 UN 2022.

113 Olaberria 2022.

114 Coppedge and others 2022.

115 Persson and Bennich 2023.

116 Papada and others 2023.

117 UNESCO 2022.

118 Sen 1999.

119 Papada and others 2023.

120 UNESCO 2022.

121 UNDP 2022a.

122 Scheidel and others 2023.

123 UNDESA n.d.

124 McIver and others 2014.

125 Roy 2019.

126 Albrecht 2019; Cianconi and others 2023.

127 Crabtree 2022.

128 There is a question of how abstract climate change is. As stated at one level, the disasters literature overlaps with the eco-emotions literature, as disasters may have already affected certain people. Other issues might include people's worry about climate change affecting them directly (perhaps they live in a flood zone) or how good people are at putting themselves in another person's place. "Worry," for example, about climate change may mean very different things to different people.

129 Hickman and others 2021.

130 Klinenberg, Araos and Koslov 2020.

131 UNDP 2022b.

132 Rovenskaya, Gomez Echeverri and Patil 2023, p. 2.

133 Otto and others 2020.

134 UNDP 2022a.

135 Marquardt 2017; Rovenskaya, Gomez Echeverri and Patil 2023.

136 Marion Suiseeya, Elhard and Paul 2021; Otto and others 2020; Pattberg and Stripple 2008.

137 Around 2005, AIDS-related deaths reached nearly 2 million a year, which moderated to 1 million a year following advancements in antiretroviral therapy that make it possible for people to survive and live with AIDS, even as the prevalence of infection continues to be high (Roser and Ritchie 2023). Life expectancy jumped back up in many countries in Africa where it had fallen by 10–20 years in the mid-2000s.

138 Consider the largest-ever stimulus package of €2 trillion by the European Union to support recovery from the pandemic (European Commission 2023; Matina 2020). A centrepiece of the package was grants dedicated to assisting the hardest-hit member nations.

CHAPTER 2

1 Helleiner 2021; WEF 2022.

2 Stiglitz 2002.

3 Georgieva, Loayza and Mendez Ramos 2018.

4 See, for example, Escande (2023), Fink (2022) and Helleiner (2021).

5 McBride and Siripurapu 2022.

6 Altman and Bastian 2022; Seong and others 2022; Seong and others 2024.

7 Balsa-Barreiro and others 2020.

8 See, for example, Frankel and Romer (1999, 2017) on the relationship between economic interdependence (as proxied by international trade) and economic growth. Also consider how trade in medical equipment, personal protective equipment and vaccines was key to savinglives during the Covid-19 pandemic (OECD 2021); mRNA vaccine development relied heavily on cross-border, cross-regional partnerships for sourcing components (Kumar and others 2022), clinical development and trials, and manufacturing (Druedahl, Minssen and Price 2021). With

more equitable access and distribution, even more lives might have been saved and the duration of the pandemic shortened.

9 The recent Covid-19 pandemic and the 2007–2008 global financial crisis are illustrations of this.

10 Coyle 2023; Rodrik 2023; Stiglitz 2007, 2002b; White and others 2023.

11 Goldberg 2023.

12 Rodrik 2018, 2021.

13 As elaborated later in the chapter.

14 Mondliwa, Roberts and Ponte 2021.

15 And the “neat coloured boxes of nation states in political maps of the world belie the complexity of … interconnections” (Dalby 2020. p. 7).

16 While many people still live in small communities, more than half the world’s population now lives in cities, and both the number of cities and the world’s urban population is expected to increase—especially in low-income countries (UN-Habitat 2022).

17 In fact, recent archaelogical findings suggest that long-distance transportation of materials such as obsidian emerged very early in human evolution. Blegen (2017) reports finding obsidian that originated about 166 kilometres away from archaeological sites dated to about 200,000 years ago. Brooks and others (2018) and Deino and others (2018) show that social exchange over large distances may have started even earlier, as early as 320,000 years ago. Of course, in historical times there are multiple records of exchanges taking place over vast distances. A more recent well-known example is the so-called Silk Road, which dates back to the 1st century BCE and connected Central Asia, China, India, Persia, Arabia and Europe. Beckwith (2009) argues that the “road” in “Silk Road” downplays the engagements with peoples of Central Asia, as if the exchanges were merely a conduit from China to Europe, when in fact there were deep interactions across all of Eurasia, with pervasive and long-lasting economic and cultural exchanges

18 For example, Ganapati and Wong (2023) show that global transport costs for goods have declined substantially; the cost to transport 1 tonne of goods 1 kilometre has fallen approximately 35 percent since 1970, and the cost to transport $1 worth of goods 1 kilometre has fallen more than 50 percent.

19 Rodrik 2018.

20 Rodrik 2011; Stiglitz and Greenwald 2014.

21 A large body of literature maps the links among trade, economic growth and poverty reduction (see, for example, Dollar and Kraay 2004; Frankel and Romer 2017; Sala-i-Martin 2007). However, the literature also points to some nuance. For example, Dollar and Kraay (2003) find that both institutions and trade openness matter for economic growth and that countries with “better” institutions trade more. Furthermore, researchers have found that in the long run institutions matter more than trade for economic growth (see, for example, Rodrik, Subramanian and Trebbi 2004). Even the success of the so-called Asian Tigers has been ascribed to a mix of export-led growth strategies and industrial policies (Stiglitz 1996).

22 Nolan, Richiardi and Valenzuela 2019.

23 Hirte, Lessmann and Seidel 2020; Rodríguez-Pose 2012.

24 Autor, Dorn and Hanson 2013, 2016; Dix-Carneiro and others 2023.

25 Stiglitz and Greenwald 2014.

26 IMF 2023c.

27 WEF 2023b.

28 Goldberg and Reed 2023.

29 Aiyar and others 2023. While there are multiple definitions and measures of globalization, including the KOF Index of Globalisation, which measures globalization along economic, social and political dimensions (Gygli and others 2019), and the DHL Global Connectedness Index, which measures trade, capital, people and information flows (Altman and Bastian 2022), globalization in the economics literature is commonly referred to as international trade and finance openness and is measured by the sum of exports and imports as a share of global GDP (Aiyar and others 2023; Cevik 2023). Using this latter metric, Cevik (2023) finds no structural retreat of globalization. Furthermore, the indices mentioned above also show high globalization after a temporary downturn during the Covid-19 pandemic (Altman and Bastian 2022). That said, some researchers argue that the current trends of increasing trade barriers and other inward-looking policy measures examined in this chapter have yet to have a full effect on the level of globalization (Goldberg and Reed 2023).

30 Wolf 2024.

31 Lane and Milesi-Ferretti 2018. Their research finds that international financial integration, understood as as cross-border holdings of assets and liabilities, remains high, even though the pace of integration has declined since 2007/2008. Emerging and developing economies are playing an increasingly important role, offsetting some of the declines in cross-border banking among advanced economies.

32 Minerals, energy, key crops, electronics, pharmaceuticals, basic metals, chemicals, financial services, professional services and intellectual property (Seong and others 2022).

33 Xing, Gentile and Dollar 2021. Services—including finance, logistics, communication and, increasingly, digital services—enable global value chains and are playing an even more important role for global trade. In fact, trade in intermediate goods now slightly exceeds trade in final goods (Aiyar and others 2023).

34 Transport use for goods, whether counted by weight or by value, has more than doubled between 1965 and 2020 as emerging economies increasingly established themselves on the international market (Ganapati and Wong 2023).

35 IOM 2022.

36 IOM 2022.

37 UNDP 2009.

38 Engler and others 2020.

39 Bond 2022; Esses 2018; Koczan and others 2021.

40 For a review, see Koczan and others (2021), who, among many things, show that immigration has no significant effect on unemployment in the receiving country. Or consider Engler and others (2020), who find that a 1 percentage point increase in immigration in advanced economies increases economic output by almost 1 percent within five years.

41 Altman and Bastian 2022; UNCTAD 2022.

42 González and Ferencz 2018.

43 Gopalan, Reddy and Sasidharan 2022; Xing, Gentile and Dollar 2021.

44 ITU 2023.

45 Balsa-Barreiro and others 2020.

46 The trade blocs of the European Union, North America and the 10 nations of the Association of Southeast Asian Nations account for almost 70 percent of global trade (Broom 2023; Sytsma 2020).

47 For example, Sub-Saharan Africa, home to many countries heavily dependent on international trade for income, accounts for a minuscule share of global trade (around 3 percent; Coulibaly 2022).

48 Kamin, Arteta and Ruch 2023.

49 Iacoviello and Navarro (2019) show that an increase in the US interest rate by 100 basis points reduces foreign GDP by 0.5 percent in advanced economies and 0.8 percent in emerging economies after three years, amounts that are similar to the domestic effects of a monetary shock (found to reduce GDP in the United States by 0.7 percent after two years).

50 Iacoviello and Navarro 2019. See also IMF (2014).

51 See, for example, Stiglitz and Greenwald (2014).

52 Cortinovis, Crescenzi and Van Oort 2020; Crescenzi, Dyèvre and Neffke 2022; Xing, Gentile and Dollar 2021.

53 Narula and Pineli 2019.

54 Autor and others 2020b; De Loecker and Eeckhout 2018; De Loecker, Eeckhout and Unger 2020; Karabarbounis 2023; Karabarbounis and Neiman 2013; UNCTAD 2023.

55 Howard 2021.

56 J. Clapp 2021, 2023; Lianos and others 2022; Palazzo and Vollero 2022.

57 Wallach 2021. By way of illustration, in 2021 the market capitalization—the total value of a company’s shares in the stock market—of Apple was larger than the GDP of Brazil, Canada, Italy, the Republic of Korea, the Russian Federation and many more.

58 White and others 2023.

59 Lund and others 2020.

60 Coyle (2023, p. 8) suggests that globalization forces and technological advancements, not least in the reorganization of production and

trade processes, have led to such strong specialization patterns that "the scope of the market seems to have reached a limit that means there is a trade-off between continouing division of labour and the rigour of competition." In other words markets of "too big to fail" are now also accompanied by markets of "too few to fail."

61 White and others 2023.

62 Birshan 2023; Seong and others 2024.

63 WEF 2023a.

64 WEF 2023a.

65 Autor, Dorn and Hanson 2016.

66 Evidence from the 1980s and early 1990s showed a positive relationship between government spending and trade openness in a majority of countries. However, this relationship no longer seem to hold true (Trubowitz and Burgoon 2023; see also Anderson and Obeng 2021).

67 Autor and others (2020a) link political polarization in the United States with the implications of globalization, while Fetzer (2019) argues that it was the incidence of austerity policies in the United Kingdom that was the proximate causal factor.

68 Guriev and Papaioannou 2022; Trubowitz and Burgoon 2023. In 2002 Joseph Stiglitz's groundbreaking book Globalization and its Discontents (Stiglitz 2002) argued that the prevailing economic policies of globalization at the time—market liberalization, privatization and austerity policies—had failed to deliver on their promises of growth, stability and poverty reduction and had instead led to adverse outcomes such as loss of jobs and income, increased inequalities and stifled development for many countries. We build on this work but focus on how feelings of discontent and antiglobalization sentiment have seemingly globalized.

69 Guriev and Papaioannou 2022.

70 Guriev and Papaioannou 2022.

71 Walter (2021b) finds that antiglobalization sentiment has not increased among the general public but that antiglobalization narratives have become increasingly common in partisan discource.

72 Altomonte, Gennaro and Passarelli 2019; De Vries, Hobolt and Walter 2021.

73 Rodrik 2021.

74 See, for example, Bonomi, Gennaioli and Tabellini (2021) and Noury and Roland (2020); see also Funke, Schularick and Trebesch (2023) on the economic costs of populism.

75 Gyöngyösi and Verner 2022; Mian, Sufi and Trebbi 2014.

76 Tooze 2023.

77 Jordà and Taylor 2016.

78 Naoi 2020.

79 Autor and others 2024.

80 For example, in the European context Rommel and Walter (2018) show that those exposed to offshoring of jobs tend to favor parties that promote redistribution and social protection and that offshoring did not increase the likelihood of voting for nationalist parties on the right.

81 Naoi 2020; Walter 2021b.

82 Bardhan 2022; Mutz 2018. More broadly, researchers link feelings of ontological (in)security—security of one's being and place in the world (as opposed to security of survival)—to nationalistic sentiment and support for white supremacy. See, for example, Kinnvall and Kisić Merino (2023) and Stenner and Andreouli (2023).

83 Wolf 2023; see also Rodríguez-Pose (2018, 2022) and Rodríguez-Pose, Terrero-Davila and Lee (2023).

84 Algan and others 2021; Guiso and others forthcoming; Rodríguez-Pose, Terrero-Davila and Lee 2023.

85 UNDP (2022b) opened space for new metrics on subjective wellbeing, using data from the World Values Survey. It introduced the Index of Perceived Human Insecurity, which measures how secure people felt in their everyday life alongside a number of dimensions. The report found that six out of seven people worldwide reported feeling insecure about many aspects of their lives. UNDP (2022a) explored mental wellbeing by surveying data on feelings of stress, worry and sadness and exploring the connections between mental wellbeing and human development.

86 Some 3 billion people report feeling worried today, an increase of 687 million over the past decade; 2 billion people report sadness, 540 million more than a decade ago; and 2.9 billion people experience stress, an increase of 596 million over the past decade (Human Development Report Office calculations based on data from Gallup 2023).

87 Blanchflower 2023.

88 Daly and Macchia 2023; Yonzan, Gerszon Mahler and Lakner 2023.

89 De Vries, Hobolt and Walter 2021.

90 Altomonte, Gennaro and Passarelli 2019.

91 Ajzenman, Cavalcanti and Da Mata 2023; Guriev and Treisman 2019.

92 Alstadsæter and others 2023.

93 De Vries, Hobolt and Walter 2021.

94 Walter 2021b.

95 Bonomi, Gennaioli and Tabellini 2021.

96 Autor and others (2024) find that increases in US import tariffs in 2018–2019 led to retaliatory foreign tariffs that resulted in concentrated job loss in certain US regions and sectors. Despite the negative economic outcomes, voters in regions that were more exposed to tariffs were more likely to re-elect candidates that supported import tariffs.

97 McConnell and others 2018.

98 Ajzenman, Cavalcanti and Da Mata 2023.

99 Funke, Schularick and Trebesch 2023.

100 Funke, Schularick and Trebesch 2023.

101 Aas Rustad and Østby 2023; Arasmith, Østby and Aas Rustad 2022.

102 UN and World Bank 2018.

103 UNDP 2022b.

104 UN 2021.

105 Muriuki and others 2023.

106 Melin 2023.

107 Sklair 2020. Available at https://iiraorg.com/2021/01/22/globalization-and-the-challenge-of-the-anthropocene/ accessed 5 August 2023

108 Degroot 2022; Degroot and others 2021.

109 IPCC 2021b.

110 Vitousek and others 1997.

111 UCMP 2023.

112 Allan and others 2020.

113 IPCC 2021a.

114 UNDP 2020b.

115 Espagne and others 2023.

116 Dalby 2020.

117 Wu and Wan 2023.

118 For example Gourdel, Monasterolo and Gallagher (2023) find that introducing carbon pricing in China may decrease demand for Indonesian coal, reducing GDP by 4.4 percent and increasing public debt to 9.6 percent of GDP.

119 For example, Chepeliev, Osorio-Rodarte and van der Mensbrugghe (2021) find that regional and global collaboration around nationally determined contributions of greenhouse gas emissions reductions will reduce the burden of the climate transition on people living in poverty. Conversely, a scenario where countries meet their nationally determined contributions without regional cooperation result in a 0.45 percent increase in the number of people living in severe poverty.

120 Liu and others 2015.

121 Guerrero and others 2021; Pacheco 2012.

122 Marin and others 2022. That said, soybean production has also been linked to sustainability challenges (Song and others 2021).

123 Williams and others 2019.

124 Hughes and others 2018.

125 Keys and others 2019; Martín-López and others 2019; Pellowe and others 2023.

126 Williams and others 2019.

127 Dalby 2020, p. 8.

128 Wu and Wan 2023.

129 Feng, Li and Wang 2023.

130 Feng, Li and Wang 2023.

131 Kinnunen and others 2020.

132 OECD 2018.

133 Howard and Hendrickson 2020.

134 Degroot 2022.

135 Kinnunen and others 2020; Monterrosa and others 2020

136 UNCTAD 2023.

137 Anderson and others 2019.

138 FAO and others 2023.

139 IOM 2022.

140 Black and others 2011; McLeman and others 2021.

141 Lenton and others 2023. See also Xu and others (2020).

142 https://horizons.hdr.undp.org/.

143 Clement and others 2021; Rigaud and others 2018.

144 ITU 2023.

145 In 2020 the number of internet users reached 4.9 billion people, and more than half of the global population were active social media users (ITU 2022).

146 Consider the international implications of the failure of Silicon Valley Bank, where uncertainty and panic spread throughout the global tech and banking system, potentially accelerating the well-known contagion of behaviour at the heart of bank runs. Although management decisions were at the heart of the crisis, social media played an integral role, as information and rumors related to the bank's solvency quickly spread and may have contributed to the bank run (Cookson and others 2023).

147 For example, a recent Amnesty International Report found that the horrific persecutions and violence against the Rohingya people in Myanmar in 2017 were predated by flourishing hate speech and misinformation about the Rohingya on major social media platforms, aggravating an already atrocious situation for the minority (Amnesty International 2022). The violence forced thousands of people to flee, spreading the conflict cross national borders. Almost 1 million people reached neighbouring Bangladesh, where they to this day continue to face extremely challenging circumstances in the world's largest refugee camp (USA for UNHCR 2023).

148 Michaelsen 2020. This may have provided opportunities to restrict freedoms through persuasion and control of information as opposed to relying on violence (Guriev and Treisman 2019).

149 Altman and Bastian 2022.

150 González and Ferencz (2018) find that a 10 percent increase in bilateral digital connectivity leads to a 2 percent increase in trade in goods.

151 See chapter 6 in Xing, Gentile and Dollar (2021).

152 Buckley 2018.

153 Espagne and others 2023.

154 WTO 2023.

155 Creutzig and others 2022.

156 Cowls and others 2021; Creutzig and others 2022.

157 Creutzig and others 2022.

158 Creutzig and others 2022.

159 ITU 2023.

160 ITU 2022.

161 Cornelli, Frost and Mishra 2023.

162 Frank 2021. See also Cornelli, Frost and Mishra (2023) and UNDP (2020b, 2022a).

163 Cornelli, Frost and Mishra 2023; UNDP 2020b.

CHAPTER 3

1 A global public goods lens can help countries understand better ways to focus their contributions towards addressing shared global challenges. For instance, mitigating climate change requires all countries to reduce greenhouse gas emissions, but eradicating a disease depends on its being eliminated in the last country where the disease is still endemic. Particularly at a time when the international community is engaged in designing new treaties or improving existing ones to control pandemics or deal with global environmental challenges, it matters to know how national contributions aggregate to provide global public goods.

2 Such as the United Nations Secretary-General High-Level Advisory Board on Effective Multilateralism (https://highleveladvisoryboard.org/).

3 As proposed in G20 (2023a).

4 It states that the lengths of two sides of a right triangle (a and b), when squared, equal the length of the hypotenuse (c) squared ($a^2 + b^2 = c^2$).

5 This means that the Pythagorean theorem is globally nonrival in consumption and production. The nonrivalry of ideas such as the theorem was captured by Thomas Jefferson's analogy of the flame of a candle, which is not extinguished if it is used to light another candle (as quoted in Bryan and Williams 2021).

6 Although its use depends on other complementary factors, including the ability to understand it.

7 This means that the Pythagorean theorem is globally nonexcludable.

8 "Good" suggests social desirability but does not imply a moral assessment—there are many things that can be considered morally good under different ethical frameworks that are not global public goods. Global public goods have the two distinctive characteristics of being nonrival and nonexcludable in consumption or production. Full nonrivalry means that someone benefiting from a global public good does not take away from what is available for everyone else to enjoy. Full excludability means that the benefits are available to everyone without the possibility of excluding anyone.

9 Stiglitz 1999.

10 As elaborated also in Buchholz and Sandler (2021), which inspires and informs much of this paragraph.

11 This argument draws from Cornes and Sandler (1996). What matters is the incentive structure that shapes production and consumption. For instance, while a loaf of bread is fully rival and excludable, a collective that produces bread and distributes it equally among the members of the collective has an incentive structure equivalent to that of providing a public good (Cornes and Sandler 1996). Many countries decide to provide public services that could also be provided privately (from health and education to water and sanitation) (Cornes and Sandler 1996). And while ideas in the public domain are global public goods, if their use is restricted by exploiting monopoly power or intellectual property rights, some can be excluded. There are many reasons why these choices are justified. For example, while making knowledge excludable tends to be inefficient—because, given nonrivalry, there is no cost to enabling an additional person anywhere in the world to access knowledge once it has been created (remember the candle that is not extinguished by lighting another)—the incentives to generate new knowledge could be weakened if the artist writing a novel or mathematician researching a new theorem had no way to earn a living from the knowledge that would be eventually produced. At the same time, it is not necessary to make knowledge excludable in order to provide incentives to generate new ideas, since other institutions—from public funding of science, in which scientists are institutionally rewarded by claiming priority to a scientific discovery, to prizes for scientific or artistic breakthroughs (potentially funded by philanthropic organizations)—also encourage the creation of new knowledge (Dasgupta and David 1994).

12 See also Liang and others (2023). Still, there is a wide gap between the potential for information and communications technologies to enable this sharing of knowledge and its reality, given price and other barriers to access, as presciently envisioned in (Stiglitz 1999).

13 Social choices can often determine whether and how something is a global public good by shaping the incentive structures that the relevant agents face in contributing to the global public good, including how financing is structured. Some goods can have some characteristics that are—and others that are not—global public goods. Take money, and consider the three economic functions that it performs: store of value, unit of account and medium of exchange. While far from being a public good as a store of value, money is fully public as a unit of account. This point was made by Kindleberger (1986).

14 The advantages of a lens that reduces complexity has a cost in simplifying, for instance, interconnections between global challenges (for a perspective on these links, see Newell, Goldstein and Foster 2019) and being less relevant for global challenges that are not strictly linked with cross-border spillovers. But this lens brings analytical clarity and makes it easier to discern common features across global challenges that may seem not related and to clarify what lessons from what kind of successful efforts to address global challenges can be extrapolated to others. For example, finding commonalities between mitigating climate change and tackling the Covid-19 pandemic (as in Ringsmuth and others 2022) is disciplined with a global public goods approach by recognizing that they are provided in different ways, as explored in the chapter.

15 Externalities reflect uncompensated interdependence among agents (meaning that one agent makes decisions without regard to the impacts that the decision might have on other agents). International externalities reflect uncompensated interdependence between two or more countries and can be negative (as in a disease that spreads) or positive (as in disseminating knowledge about how to curb the spread of the disease). While not all externalities are related to public goods, global public goods always involve international externalities. We are grateful to Todd Sandler for suggesting this formulation. Cornes and Sandler (1996, p. 7) argue that in the analysis of public goods, "the concept of an externality is the basic one." Taking James Meade's approach, an externality can be seen as "an event which confers an appreciable benefit (inflicts an appreciable damage) on some person or persons who were not fully consenting parties in reaching the decision or decisions which led directly or indirectly to the event in question." As cited in Cornes and Sandler (1996, p. 39). This is only one of many ways to define an externality. For example, Kenneth Arrow defines an externality in the context of deviations from the axioms underpinning the Pareto efficiency of competitive markets (Arrow 1969), which Cornes and Sandler (1996) use to present a theory of externalities. For multiple examples and instances of the relationship between border-transgressing externalities and the provision of global public goods, see Kaul and Conceição (2006a) and Kaul and others (2003).

16 This reality is inspiring fresh perspectives on earth system governance (Biermann 2014, 2021; Biermann and Kalfagianni 2020; Burch and others 2019), polycentric governance for resilience (Folke and others 2019; Keys and others 2019a; Galaz 2022; Rockström and others 2021; Rockström and others 2023) and multilevel governance in climate change (Bulkeley 2005; Bulkeley and Newell 2023; Newell and Simms 2020; Stoddard and others 2021). A global public goods lens can also further inform and enrich these perspectives, as opposed to replacing or substituting for them.

17 They are rival in consumption.

18 For an early, and still canonical, presentation on managing local, regional and global environmental challenges as global public goods, see Barrett (2003a). For a more focused discussion on global commons, see Barrett (2006b).

19 As argued in Buchholz and Sandler (2021).

20 For instance, songbirds protect crops in North America during the spring and summer by feeding on insects but migrate to Central and South America for the winter. Degrading ecosystems in meridional regions can reduce the population of songbirds in North America, hurting crops there (Myers 1992, as cited in Buchholz and Sandler 2021). The negative effects on the bird population can be exacerbated by climate change (Youngflesh and others 2023).

21 Barrett (2003a) provides a list with dates of signature, ratification and other information about international environmental treaties up to about the turn to the 21st century. For a more comprehensive database going further in time and up to the present, see Mitchell and others (2020).

22 Additional illustrative examples related to water: on the impact of ocean acidification on marine ecosystems, see Doney and others (2020); on the importance of incorporating human activity in depictions of the global water cycle, see Abbott and others (2019); and on advances in the understanding of that relationship, see Allan and others (2020); on quantum sensing for gravity cartography that has applications for monitoring temporal variations in aquifers and geodesy, see Stray and others (2022); on the use of satellite data to identify hotspots of changes in river flows, see Wu and others (2023); and on improvements in understanding atmospheric ice nucleation (which is important for understanding global precipitation and the structure and reflectivity of clouds, which has crucial bearing on climate change), see Knopf and Alpert (2023). Changes in vegetation and dust patterns appear to have been critical in the abrupt end of the Green Sahara (which persisted for thousands of years, up to approximately 5,000 years ago), an insight that is now critical to understanding the implications of climate change in the Sahara and the Sahel going forward. On the Green Sahara, see Tierney, Pausata and deMenocal (2017), Tierney and others (2020a) and Tierney and others (2020b), and on the importance of understanding the past to inform the future of climate change and its interaction with society, see Degroot and others (2022).

23 Keys and others 2017.

24 Keys and others 2019b.

25 Keys and others 2012. For example, 89 percent of the rainfall over the Nile basin originates outside the basin itself (te Wierik and others 2021).

26 There is an extensive literature documenting the "great acceleration" in human-driven changes to planetary processes (see, for instance, Steffen and others 2015).

27 See Head and others (2022a) and Head and others (2022b) for evidence supporting the case for a new epoch. Crawford Lake, in Canada, was proposed by the Anthropocene Working Group as a "golden spike" (formally, a global boundary stratotype section and point) of the Anthropocene (McCarthy and others 2023). This designation is being considered by the broader community of geologists before a formal decision is made. The concept of the Anthropocene has transcended geology (see Malhi 2017 for a review), leading some to argue that rather than a formal new epoch in the geological time scale, it should instead be seen as a "emergent, unfolding, intensifying event" (Edgeworth and others 2023, p. 1; see also Bauer and others 2021, Gibbard and others 2022a and Gibbard and others 2022b). For a response to this view, see Waters and others (2023). Whether the Anthropocene is ultimately characterized as a formal unit in the geological timescale or a geological event does not detract from the widely accepted notion that humans are fundamentally transforming the planet in unprecedented ways, and it is in that spirit that the term is used in this Report, following UNDP (2020b).

28 On the depletion of the ozone layer, see Barrett (2003a). The global public goods literature on climate is extensive; see Buchholz and Sandler (2021), Keohane and Victor (2016) and Stiglitz (2015). For a recent take on preserving global diversity as a global public good, see Barrett (2022) and Buchholz and Sandler (2021).

29 Folke and others 2021.

30 Schell (1982, pp. 166–167), in his meditation of the implications of a nuclear war in the early 1980s, already echoed an intuition for the relevance of planetary public goods: "...[T]he earth's environment is seen not merely as a surrounding element in which it is more or less pleasant to live but as the foundation of human as other life. The oneness of the earth as a system of support for life is already visible around us. Today, no matter how strenuously statesmen may assert the 'sovereign' power of their nations, the fact is that they are all caught in an increasingly fine mesh of global life, in which the survival of each nation depends on the survival of all."

31 We are grateful to Belinda Reyers for these suggestions and for the further elaboration in this note. The biosphere as a planetary public good could be seen as playing two key roles, adapting the formulation in Mace and others (2014). First, is the role as a global source of diversity of organisms' functional traits. Organisms with different functional traits can differentially affect important global and regional ecosystem properties, such as primary production, decomposition or detoxification, and react differently to changes in the environment. When certain combinations of functional traits are lost in the face of environmental change, these key global and regional functions could be at risk. Second is the role as the library of life—in other words, the evolutionary potential to help us adapt, change and stay resilient as the world and human societies change. In the long term—over centuries to millennia—human wellbeing will depend on the biosphere's continued ability to support desired ecosystem services and processes in the face of often rapidly changing selective pressures.

32 A planetary public goods lens does not imply some sort of naturalistically determined imperative to provide these goods. Ultimately, the reality of the Anthropocene, which results from human agency, and the disruption to planetary processes with implications that do not stop, and cannot be stopped, at borders justify the potential usefulness of this lens. A planetary public goods lens also does not mean that there will not be any contestation, in part because the benefits of planetary public goods (like those for any global public good) accrue differently to different people across the globe, in part because the process of providing these goods is not neutral.

33 Knuth 1972; Maor 2019. Even though there are hundreds of different ways to prove the theorem, Pythagoras was perhaps the first to codify a rigorous proof—or, at least, his proof corresponds to the most ancient record found

to date (Loomis 1968). For a list of more than 100 proofs, see https://www.cut-the-knot.org/pythagoras/index.shtml (accessed 15 December 2023).

34 Ideas and knowledge are created and diffused in culturally contingent and evolving contexts, but individuals can still be central players, in the form of what Joel Mokyr called "cultural entrepreneurs" (Mokyr 2013, 2016). Sen (2009b) also describes the importance of Mary Wollstonecraft's writings in the 18th century advocating for the rights of women and the abolishment of slavery.

35 Global public goods can be provided by different agents at multiple scales—under multiple incentive structures that can motivate agents to contribute to their provision. For the multitude of agents involved in several aspects of transnational policymaking, see Pouliot and Thérien (2023) and Stone and Moloney (2019).

36 Many people depend on knowing and using the Pythagorean theorem for their livelihoods; others can go through life without even knowing what it states (not only not using it, but also not relishing its beauty).

37 In fact, some theories of economic development attribute to ideas the fundamental role in driving progress precisely because of their nonrivalry and because they are the foundation of even more and newer ideas (in this sense, they have important positive externalities), including on how to make more efficient, equitable and sustainable use of the limited physical resources on our (materially limited) planet (Jones 2023). The formal economic analysis of ideas as distinct from other (rival) goods was pioneered by Arrow (1962). That pathbreaking analysis established the implications of the nonrivalry of ideas (and the uncertainty associated with their potential impact) for both production and demand. Formal models of economic growth in which the generation of ideas is endogenous were pioneered by Romer (1986, 1990, 1993). Jones (2019) explains how the nonrivalry of ideas sits at the core of these endogenous growth models. Enhancing incentives to produce and use ideas drives these growth models, and given that ideas need to come from people (Jones 1995, 2020), other factors contribute, including enhancing the allocation of talent—namely by reducing gender or racial discrimination (Hsieh and others 2019; Jones 2022).

38 Although how far the idea is disseminated depends on multiple variables, from how it is stored to people's ability to make sense of it and use it. Many ideas may have emerged and never been disseminated. Rather than a statement on the nature of idea creation and dissemination, the intention here is to illustrate the features of a global public good for which the level of provision depends on the actions of the single agent that contributes the most.

39 To simplify, agents are countries producing and benefiting from a global public good. This crude simplification ignores the many interactions between the domestic context and countries' international actions. These include, for instance, the impact of the size of a country's population (Boadway and Hayashi 1999) and wealth inequalities within countries (Bardhan, Ghatak and Karaivanov 2007). In addition, as Murdoch, Sandler and Sargent (1997) show, the unitary model of countries as decisionmakers does not perform well when many agents in the country are engaged in determining the provision status of the public good in question. For instance, there are environmental agreements that mandate reductions in the emissions of both sulphur and nitrogen oxides for 25 countries in Europe. But while sulphur emissions tend to originate in a few industries, nitrogen oxide emissions are generated across a range of sectors and economic activities. Thus, through the 1980s, sulphur emissions in these countries declined by the treaty-mandated 30 percent or more, but the same countries had trouble reducing emissions of nitrogen oxides.

40 Until Hirshleifer (1983), all public goods (global or not) were implicitly assumed to follow a summation aggregation, so much of the original analysis of public goods and policy discourse (including on global public goods) continues to implicitly carry that assumption. The discussion of how global public good provision depends on different types of aggregations of country contributions is done discursively in this chapter, drawing on examples. For formal and more comprehensive treatments of aggregation "technologies," not only for global public goods but also for other public goods, see Kanbur, Sandler and Morrison (1999) and Sandler and Arce M. (2002). The relevance of distinguishing different aggregation technologies for international cooperation was explored in the final report of the International Task Force on Global Public Goods (Zedillo and others 2006), as well as some of the background material produced for the task force (in particular, Barrett 2006b). For a recent summary of the literature, see Buchholz and Rübbelke (2017). For instance, for airborne pollutants that, unlike greenhouse gas emissions, dissipate quickly in the atmosphere, the location of the countries originating and being affected by those pollutants, matters, along with prevailing winds. The reach may, therefore, not be global—in that case, one confronts the provision of transnational public goods that may be regional or subregional, as explored in Arce M. and Sandler (2002), Kanbur, Sandler and Morrison (1999), Sandler (1998) and Sandler and Arce M. (2002). There is no perfect substitutability, as with greenhouse gas emissions, because some countries may have a larger impact than others, and some countries may also be more affected. Thus, the provision is still determined by summing the contributions of the relevant countries, but with those that contribute more weighing more in the aggregate than those that contribute less—in a weighted summation.

41 Sandler 1997.

42 Rao 2022.

43 That same country, the United States, established a system to monitor tropical cyclones in the Western Hemisphere because the net national gains from that effort justified the investment, even though the benefits also accrue to many other countries and, potentially, the world (Sandler 1997). Through the US Centers for Disease Control and Prevention, it also monitors disease outbreaks and seeks to isolate new pathogens around the world. Both are presumably motivated by a desire to protect US citizens, but they also bring global benefits (Sandler 2015).

44 One implication of best-shot global public goods is that their provision is enhanced when countries coordinate their efforts based on their resources and capabilities. There is some evidence that countries recognize this. For instance, Kyle, Ridley and Zhang (2017) report that a 10 percent increase in US government funding for medical research for a specific disease is associated with a 2–3 percent reduction in funding for research on that disease by governments and foundations in 41 other countries as those countries presumably adjust funding to focus on their research strengths. Coordination could enhance the overall allocation of resources.

45 The concentration of greenhouse gases in the atmosphere is determined by the total level of emissions, net of the capacity of the biosphere to "absorb" them—that is, the sum of the emissions from each country.

46 For summation global public goods, each country's contribution adds equally (at the margin) to the overall provision.

47 Smith and others 2004.

48 To improve the provision of weakest-link global public goods, allocating resources beyond the country, or countries, with the least capacity to contribute makes little difference because that will make little difference in the overall provision. In contrast, it is imperative to enhance the ability to contribute for those least able to do so, because their contribution determines the overall level of provision of the global public good.

49 The discussion assumes that the provision of global public goods is driven by how countries interact in a world where states seek to advance their self-interest and have different levels of resources and capabilities (see box 3.2).

50 Sandler (2016, p. 42) says, "Averting a regional financial crisis through an infusion of funds is a best-shot public good."

51 There are efforts to coordinate, and even cooperate, on several scientific endeavours, such as nuclear fusion, for which ITER (https://www.iter.org/) brings together 35 countries, and particle physics, for which the European Organization for Nuclear Research (better known as CERN) brings together 23 countries (https://www.home.cern/).

52 For example, in codifying rules and pooling of resources to provide liquidity to countries facing balance of payments crisis, as with the creation of the International Monetary Fund after World War II.

53 For descriptions and analysis of multilayered and multiagent governance, see Slaughter (2004) and Stiglitz and Kaldor (2013).

54 This situation parallels the outcome of the prisoner's dilemma, when the sum of the

individual contributions is lower than what would be collectively desirable and feasible. Chen and Zeckhauser (2018) provide evidence that some countries "cheap ride" when it comes to contributions to reducing greenhouse gas emissions.

55 A country committing to contributions would be expected to change the incentives for others to do so in the future. Some models suggest that this might be the case (as in Boadway, Song and Tremblay 2007), but the question remains: what would make a country commit in the first place?

56 Beyond the possibility of countries having altruistic preferences (Goussebaïle and others 2023), fairness is required when there is a strong need for reciprocity (Fehr and Gächter 2000; Fehr and Schmidt 1999).

57 Since several greenhouse gases can stay in the atmosphere for decades (IPCC 2007).

58 For a discussion of the different dimensions of climate justice, see Dolšak and Prakash (2022). On the importance of reciprocity and perceptions of fairness in climate change mitigation, see Buchholz and Peters (2005), Buchholz, Peters and Ufert (2018), Buchholz and Rübbelke (2019), Carattini, Levin and Tavoni (2019) and Cairney, Timonina and Stephan (2023). For an argument as to why current financial flows to support mitigation are unfair, see Pachauri and others (2022). On the debate over whether the size of each country's economy should be accounted for using purchasing power parity or market exchange rates, see Pachauri and others (2023) and Semieniuk, Ghosh and Folbre (2023).

59 For a discussion about the importance of side payments in enhancing cooperation for environmental global public goods, see Barrett (2003a), who argues that in a side payment game, concerns with fairness do not drive individual country decisions, but an outcome that is seen as fair will still be especially compelling.

60 In the formal literature on providing public goods, this is the well-known "Warr neutrality result" (Warr 1983), which establishes that transfers of resources from richer to poorer agents do not affect the level of provision of (summation) public goods. The intuition is that while the agent receiving income contributes more (increases in income result in higher contributions to a public good), that contribution is offset by a proportional reduction in the contribution of the agent for which income is reduced. An implication of this result is that for (summation) global public goods, "new money" is typically required to enhance the provision level—other than the implications that income transfers may have for fairness and reciprocity. In the international context, philanthropic organizations have often played this role of providing new and additional income. In the end, any allocation of burdens of contributing to climate change is irreducibly normative and needs to be supported through ethical reasoning (Dooley and others 2021).

61 Because if any country does not contribute, there is no provision of the global public good at all. This is a very different situation from summation global public goods, where even with equal preferences and resources, countries face incentives to not contribute.

62 Sandler (1997) discusses how equity across countries can enhance prospects for the provision of weakest-link global public goods. This is also shown in Jayaraman and Kanbur (1999).

63 Whether the support is in income or in kind also matters, as does the relative efficiency that rich countries have in delivering in-kind support; see Vicary and Sandler (2002).

64 For a recent discussion of the prospects for providing weakest-link public goods, emphasizing the importance of transfers, see Caparrós and Finus (2020b).

65 Olson (1971) emphasized the general point that as the number of agents engaged in a prisoner dilemma situation increases, the likelihood of cooperation declines. For recent evidence on the limit of group sizes enabling cooperation at the local level, see Casari and Tagliapietra (2018). For a specific discussion in the case of weakest-link global public goods and how free-riding concerns related to international transfers to shore up weakest links are magnified the more rich countries there are, see Sandler (2016).

66 Sandler 2016.

67 This approach complements other efforts that sought to draw lessons from the Covid-19 pandemic for managing global challenges—for instance, from a systemic risk perspective (Ringsmuth and others 2022) and informed by approaches based on integrated social, economic and ecological systems on a changing planet (Crona, Folke and Galaz 2021; Galaz 2022; Galaz and others 2021; Keys and others 2019a). It is not meant to be a comprehensive review or assessment of a multifaceted and complex period, still beset by many unknowns, though some assessments take the form of official commissions of inquire (such as Clark 2022, Response 2022 and Sirleaf and Clark 2021), while others are informal (such as Cable and others 2022, Frenk and others 2022, Sachs and others 2022 and Williamson and others 2022). For a review and analysis of the legitimacy and impact of these assessments, see Becker and Nouwen (2019), Stone and Schmider (2023) and Weible and others (2020). For a "constructivist" critique on how these assessments are framed, see Shiffman and Shawar (2022). Assessments are likely to be dynamic and evolving, as the threats to global health in the 21st century multiply, and a commission has been established to analyse just that (Kanem, Murray and Horton 2023). A global public goods lens could bring an analytic frame to support these efforts. The analysis draws selectively from some of the events and choices that unfolded during the Covid-19 pandemic to further illustrate the analytical insights on providing global public goods discussed thus far. It is inspired by other attempts to use a global public goods lens to analyse the Covid-19 pandemic, such as Brown and Susskind (2020) and Sandler (2020, 2023).

68 As argued early in the Covid-19 pandemic by Caparrós and Finus (2020a).

69 See Arhin-Tenkorang and Conceição (2003) and Sonntag (2010) for a global public goods perspective on health challenges.

70 For a discussion of the context of uncertainty in shaping the Covid-19 response, see Collins, Florin and Renn (2020), Kreps and Kriner (2020) and Leach and others (2022). For a general analysis of responses to epidemics under uncertainty see Barnett, Buchak and Yannelis (2023).

71 For a further elaboration on the need for multiscale approaches to pandemic preparedness, see Wilkinson and others (2023).

72 Some estimates indicate that the economic burden in 2019 was $1.115–$3.346 trillion (in 2017 purchasing power parity international dollars) for tuberculosis, $678–$2,035 billion for AIDS and $564–$1,693 billion for malaria (Bloom, Kuhn and Prettner 2022).

73 When the eradication effort started in 1967, smallpox was endemic in 31 countries and caused as many as 15 million cases and about 2 million deaths a year (Fenner 1993).

74 Barrett (2007) For further analysis of disease eradication as a global public good, see Barrett (2003b, 2013b).

75 Sandler 2015.

76 For instance, those having nonhuman hosts may be very difficult or impossible to eradicate (Arhin-Tenkorang and Conceição 2003).

77 For a discussion of the conditions for disease eradication and the evolution of the initial efforts to eradicate polio, see Arhin-Tenkorang and Conceição (2003). A key person in the eradication of smallpox, D. A. Henderson, reported being sceptical about the feasibility of eradicating polio (Henderson and Klepac 2013). Because many of the difficulties envisioned by Henderson came to pass, the accumulation of costs in the eradication effort made the effort seem less attractive, but the benefits are so high that estimates suggest that eradicating polio would still bring net benefits even if it occurred in 2029 (Thompson and Kalkowska 2021), although the cost-effectiveness would be lower than earlier estimates (Thompson and Tebbens 2007). In addition, eradication efforts brought benefits in and of themselves (Badizadegan, Kalkowska and Thompson 2022). The analysis of the "polio endgame" continues to inform ongoing efforts to eradicate polio (Thompson, Kalkowska and Badizadegan 2022). However, the Covid-19 pandemic substantially disrupted eradication efforts (Burkholder and others 2023; Kalkowska and others 2023; Thompson 2022).

78 WHO 2019.

79 Barrett 2011; Cohen 2023.

80 While the analysis emphasizes the usefulness of having a conceptual framework for understanding global public good provision informed in part by different ways of aggregating individual country contributions, multiple other factors shape the provision of global public goods. For example, addressing the thinning of the ozone layer and mitigating climate change share many properties as global public goods, but the effectiveness of

the response to each has been markedly different. Sandler (2017) explores in detail how contextual factors have contributed to the different outcomes for global public goods that share many characteristics.

81 Assessments conducted since the outbreak of the Covid-19 pandemic have established that countries with more generic public health capacities were better able to control the disease, highlighting the importance not only of an emergency response but also of building surveillance and public health capacities (Neill and others 2023).

82 Usher 2020.

83 Laxminarayan, Reif and Malani 2014.

84 Saak and Hennessy 2018.

85 Suzman 2023.

86 An aspiration that emerged from the lessons of dealing with the Covid-19 pandemic (Saville and others 2022).

87 Gouglas, Christodoulou and Hatchett 2023.

88 African Centres for Disease Control and Prevention 2022.

89 WHO 2021.

90 The initial context of limited supply of vaccines may have provided incentives, even if not a justification, for countries to share little, but after this constraint was released, self-interested countries would have been better off sharing vaccines (Lampert and others 2022). As of 20 May 2022, when global vaccine supply was no longer a constraint (supply constraints for COVAX were heightened over the course of 2021; Gouglas, Christodoulou and Hatchett 2023), 80 percent of people in high-income countries had received a single dose, compared with 16 percent in low-income countries (WHO 2022a).

91 https://www.who.int/initiatives/act-accelerator/covax.

92 Usher 2021.

93 A similar challenge almost derailed the eradication of smallpox. Despite very strong incentives for each individual rich country to finance the eradication effort (and even for the United States to shoulder the cost alone), each country would have rather had others contribute instead (Barrett 2007; Fenner and others 1988). Smallpox was successfully eradicated during the Cold War largely because it eventually received strong support from both the Soviet Union and the United States. In 1958, the Soviet Union aligned its position in the WHO with a control effort focused on vaccination and surveillance (Fenner 1993). The United States breathed new life into the effort in the mid-1960s with a unilateral decision to support eradication in African countries. Interestingly, that decision appears to have been made for political expediency, not out of self-interest or for strategic reasons (Barrett 2007). But the WHO appears to have made a strategic move by proposing mandatory contributions that fell far short of the total international assistance needed. This made an agreement on mandatory contributions possible and unlocked enough voluntary contributions to successfully finance the eradication effort. Thus, success did not hinge on the WHO's ability to enforce the agreement to eradicate but on countries coordinating their actions (Barrett 2007).

94 Rogers and Mandavili 2020.

95 Emanuel and others 2020.

96 That rich countries had violated reciprocity norms. On the relationship between fairness and reciprocity, see Fehr and Gächter (2000), who refer to retaliatory actions or words to perceived violation of fairness norms as "negative reciprocity." Suzman (2023) offers an interpretation as to how these reciprocity violations were perceived by low- and middle-income countries, given the inequities in vaccine access.

97 Hu and others 2021; Wu and others 2020; Zhu and others 2020.

98 Haynes and others 2020; Jiang and others 2012.

99 Kiszewski and others 2021. When it comes specifically to mRNA vaccines, the US government invested at least $337 million between 1985 and 2019 into research and development that directly contributed to key innovations in the mRNA Covid-19 vaccine (Lalani and others 2023).

100 As argued in Brown and Susskind (2020).

101 Kim and others 2021.

102 Dyer 2020.

103 https://www.cdc.gov/museum/timeline/covid19.html (accessed 15 December 2023).

104 Le and others 2020.

105 Hanney and others 2020.

106 DiMasi and others 2020; Excler and others 2023.

107 Kim and others 2021.

108 https://www.cdc.gov/museum/timeline/covid19.html (accessed 15 December 2023).

109 Excler and others 2023.

110 Lalani and others 2023.

111 Kremer, Levin and Snyder 2020. For a proposal on how to improve on the ad hoc approach and deploy a more structured advanced market commitment that also ensures equitable access, see Towse and others (2021).

112 Sampat and Shadlen 2021. For an argument proposing ethical obligations to pharmaceutical companies during a global health emergency, see Emanuel and others (2021).

113 Countries are not the only relevant players, given the increasing complexity of international cooperation (Alter and Raustiala 2018). For example, Hale (2020) documented in 2018 more than 190 transnational initiatives aimed at addressing climate change with more than 12,000 substate and nonstate actors participating. Still, countries remain primarily players in the provision of global public goods.

114 For instance, national institutions (such as the US Centers for Disease Control and Prevention and the Pasteur Institute), networks (such as CGIAR), multistakeholder partnerships (such as the Global Fund to Fight AIDS, Tuberculosis and Malaria and Gavi, the Vaccine Alliance) and charitable foundations (such as the Wellcome Trust and the Bill & Melinda Gates Foundation) have also been increasingly active in contributing to the provision of global public goods.

115 Following the discussion in Buchholz and Sandler (2021).

116 The establishment of multilateral arrangements is tightly linked with the assumption that states are the key agents in providing global public good, as recognized in early contributions, going back to Stiglitz (1995).

117 Hoffman and others 2022.

118 On the determinants of environmental treaty effectiveness, see Finus, Cooper and Almer (2017) and Libecap (2014). For empirical evidence on treaty effectiveness, see Hoffman and others (2022).

119 As argued by Barrett (2006a).

120 WHO 2021.

121 To be precise, this goes beyond global public goods, because the nonexcludability property is not present and benefits are partially nonrival (for instance, because of congestion in the use of the club).

122 Axelrod and Keohane 1985. Clubs include the Intelsat communication network, the global air traffic control system and the internet. Partial nonrivalry implies that it is not necessarily wasteful to exclude countries, while excludability encourages countries to reveal their preferences for the good and to contribute accordingly (for instance, in the form of access fees). There have been proposals to advance climate change mitigation by establishing climate clubs, (Nordhaus 2015, 2020, 2021), but these proposals do not correspond to the definition of clubs used here.

123 Pecetta and others 2022; Shanmugaratnam and others 2021.

124 Athey and others 2022; Glennerster, Snyder and Tan 2022.

125 Pecetta and others 2023.

PART II

CHAPTER 4

1 Mantel 2009, p. 305.

2 As does any public policy set of measures and interventions, as argued in Shafir (2013). Merz and others (2023) call for identifying the behavioural drivers behind the planetary pressures of the Anthropocene. Davidson and others (2024) argue that standard models used in sustainability science (such as integrated assessment models for climate change, engineering–economic optimization approaches and agent-based models) need to be enhanced by incorporating institutional and behaviour elements.

3 Following Elster (2015b), collective action can arise out of horizontal interactions between decisionmakers within a group or through vertical measures that compel or oblige members of the group to contribute to the collective. Collective action implies multiscale

interactions across members of a collective and feedback from the properties of the collectives that influence members' behaviour, resulting in behaviour that can be analysed as a complex adaptive system, as argued in Bak-Coleman and others (2021).

4 In the broadest sense, collective action "can be defined as decentralized action by the members of a group to eliminate public bads that affect all of them or to create public goods that benefit all of them" (Elster 2015b, p. 382). The tight connection between collective action and public goods was articulated long ago by Olson (1971, 2012), inspiring a large literature in economics (put in context in his original contribution in Sandler 2015). Ostrom (1998) recognized the limitations of standard economic analysis of collective action and advocated for a richer description of human behaviour. Beyond economics collective action has been the subject of many formulations and approaches in fields such as sociology (Oliver 1993; Van Zomeren, Postmes and Spears 2008), political science (Medina 2013) and anthropology (DeMarrais and Earle 2017), among others.

5 This echoes Schill and others (2019) and Schlüter and others (2017) in the need to consider a broad range of human behavioural assumptions to address the challenges of the Anthropocene.

6 That is, beliefs are not only driven by an effort to be accurate; they can also be motivated in a self-serving way to make people feel better about themselves or about convictions they hold (Bénabou and Tirole 2016; Zimmermann 2020). There is evidence that people gain affection for their beliefs and have a hard time letting them go (Litovsky and others 2022). This can generate belief traps (Scheffer and others 2022), with negative social implications when the beliefs are harmful. For instance, if people feel threatened, regardless of whether there is an objective threat, they act accordingly: "[…] a fundamental fact about human beings: we are belief-driven creatures, but we are epistemically fallible – prone to serious errors in the formation and preservation of our beliefs. What we believe makes a difference in how we act and sometimes even fully determines how we act, but we can be and often are mistaken in our beliefs. If we falsely believe that the Other poses a threat, we react just as strongly and negatively as we would if our belief were true. The beliefs, not the facts, are what matter" (Buchanan 2020, p. 181).

7 Through social norms people conform with behaviour for the sake of seeing themselves and being seen by others as upstanding members of a community. In a widely cited case the introduction of fines by a school to punish parents who were late picking up their children led to an increase in parents being late, because what sustained cooperative behaviour before the fines were introduced (perhaps a social norm or an intrinsic commitment) was undermined by a financial incentive (Gneezy and Rustichini 2000). For a review of a broader set of cases, see Gneezy, Meier and Rey-Biel (2011). Bénabou and Tirole (2003) provide an early contribution to the analysis of when and how incentives can undermine intrinsic motivation. Incentives and other motivations are not always in opposition; they can also reinforce each other (see Rajapaksa and others 2019 for an example of a combination of approaches that enhanced water conservation).

8 We are grateful to Melissa Leach for this formulation. Anthropologists, sociologists, structural linguists and historians look at the interplay between structures of power and action in various ways.

9 We are grateful to Karla Hoff for this formulation. Kotchen, Rising and Wagner (2023) argue for the need to involve more insights from behavioural science to address climate change. Bastini and others (2023), Bergquist and others (2023) and Vlasceanu and others (2023) provide reviews and experimental results for possible behavioural interventions to mitigate climate change. Taberna and others (2023) show that behavioural uncertainty mediates the importance of physical factors in responding to changes in incentives to adapt to environmental shocks. Bergstrom and Hanage (2024) and Saad-Roy and Traulsen (2023) argue for the importance of a richer description of human behaviour to understand disease dynamics.

10 This corresponds to what Demeritt and Hoff (2018) and Hoff and Demeritt (2023) called the second wave of behavioural economics, while the behavioural choice corresponds to what they called the first wave. For a review of applications of the first wave of behavioural economics to development, see Kremer, Rao and Schilbach (2019), and for the second wave, see Hoff and Demeritt (2023).

11 One example is the endowment effect, where people demand more money to give up something they own than they are willing to pay to acquire it. Apicella and others (2014) showed that this was not universal but prevalent in groups exposed to notions and practices of ownership and market exchanges of goods and labour. For a broader review, see Apicella, Norenzayan and Henrich (2020).

12 On the instrumental power of hope and optimism to improve wellbeing and how different contexts shape them, see, for instance, Graham and Pinto (2019) and Lybbert and Wydick (2018). On aspirations, see Fruttero, Muller and Calvo-Gonzalez (2021) and Genicot and Ray (2017, 2020). For a discussion on aspirations and human development interventions, see Conradie and Robeyns (2013). On the relationship among aspirations, social norms and development outcomes, see La Ferrara (2019).

13 Evidence suggests that people see vaccines not only as self-protection but also as part of a social contract with their community to reduce the spread of infections (Böhm and Betsch 2022; Korn and others 2020).

14 A social contract between people and a national government can be struck on the basis of which national public goods are provided, rules are enforced and fiscal resources from individuals are mobilized to finance those public goods.

15 With some arguing that globalization, if anything, has strengthened the desire of more states to preserve sovereignty and autonomy (Krasner 1999).

16 The reality of the Anthropocene has stimulated debate on how enhancing global governance affects international law (see, for instance Kotzé 2019, Woolley and Harrington 2022 and Kotzé and Kim 2022). But countries would still need to voluntarily agree to adopt these proposed measures, so the analysis in this section can also be applied to understand the conditions that could make that discussion advance.

17 This distinction draws from Sen's (2009b) contrast between procedures of social choice to advance justice and Rawlsian approaches on the design of social contracts based on a theory of justice. Sen goes further, arguing that the pursuit of social contracts within each country limits the potential only for an impartial spectator from other countries to improve processes of social choice. Addressing global challenges requires systemic interventions, as argued in Chater and Loewenstein (2022). But given that at the global level systemic interventions have to be voluntarily agreed to by countries, even if a possible intervention can be specified, that still leaves open the question of how to go about getting sovereign countries to agree on it.

18 As Kirshner (2022. p. 15) argued, "Individuals are the ultimate actors in world politics; therefore assumptions about human behavior are inherent to (and consequential for) any paradigm, even if they remain implicit." That is the spirit under which the discussion in this chapter unfolds, trying to make explicit different human behavioural assumptions.

19 Sen 2009b. See also the discussion in chapter 3 of UNDP (2022b).

20 Burgio, Gómez and Arenas 2023; Hébert-Dufresne and others 2022.

21 Dannenberg and Gallier 2020.

22 For a discussion of the implications of these behavioural assumptions in international law, see van Aaken and Broude (2020) and Fikfak, Peat and van der Zee (2022).

23 This is sometimes designated homo economicus (Persky 1995).

24 It is also typically the baseline for expected human behaviour, against which several deviations (or biases) are established in the fields of behavioural economics and behavioural science more broadly.

25 Centola and Baronchelli 2015; Centola and others 2018.

26 Efferson 2021b.

27 For instance, in a context where countries have yet to coordinate and all must move in a certain direction, a country that does not trust that others will move in that direction (one that everyone desires) may decide to "play it safe" and stick to the status quo, so coordination can fail. This can be interpreted as the Dag Hammarskjöld quote, "It is when we all play safe that we create a world of utmost insecurity" (as cited recently by UN Secretary-General António Guterres (2023b).

28 Thomas Schelling argued that focal points can perform this coordination function (Schelling 1965, 1978). There is an extensive literature on interventions to overcome coordination failures, including results from experiments (reviewed in Devetag and Ortmann 2007, but see Avoyan and Ramos 2023 and Kendall 2022 for more recent reviews).

29 Although alternative analyses reject that these correspond to examples of mutually beneficial equilibria, pointing instead to the pervasive role of power and interests in setting these standards only in some cases (Krasner 1991).

30 Keohane and Victor 2016.

31 Buchholz and Sandler 2021.

32 While much is made of the fact that the non–legally binding nature of many international agreements makes them ineffective in supporting the provision of global public goods, just making a treaty legally binding is not a guarantee that states pursuing their self-interest will change their behaviour. Countries may choose to not enter into the agreement to begin with or to withdraw from it, as the exit of the United Kingdom from the European Union demonstrated (Barrett 2016).

33 Barrett 2016.

34 This can thus be modelled as an assurance (or stag hunt) game (Sandler 2016).

35 For a detailed description, see Barrett (2003a).

36 Barrett and Dannenberg 2022.

37 For the treaty to succeed, enough countries need to sign to make it in everyone's interest to be a party.

38 See Barrett (2003a) for a historical account of the negotiations informed by an analysis of the incentive structures put in place by the treaty that compelled high-income countries first, through trade incentives, and then low- and middle-income countries, through side payments, to sign and ratify the treaty.

39 Although other uncertainties can make communicable disease control difficult, as explored in Leach and others (2022).

40 Armstrong McKay and others 2022; Rockström and others 2009; Rockström and others 2021; Rockström and others 2023; Steffen and others 2015.

41 Brovkin and others 2021; Lenton 2013; Lenton and Williams 2013; Lenton and others 2008; Steffen and others 2018.

42 Kemp and others 2022a.

43 Barrett 2016.

44 These conditions are akin to the incentives countries face in providing a weakest-link global public good.

45 No such threshold was defined in the Montreal Protocol. For a different perspective on how uncertainty can make agreements on international environmental agreements difficult, see Ulph, Pintassilgo and Finus (2019).

46 Barrett 2016.

47 Burgess, Pielke and Ritchie 2022; Keen and others 2022; Kemp and others 2022b. And differences in damages across countries may foster cooperation (Waichman and others 2021). At the same time inequalities in resources may create a countervailing effect (Brown and Kroll 2021).

48 Barrett 2013a; Barrett and Dannenberg 2012.

49 If there is uncertainty about where the threshold lies, but there is a known upper bound, countries would need to cooperate to stay collectively below the upper bound. If the uncertainty is large, each country would know that being just a little bit below its individual contribution to the upper bound is unlikely to make the world go over the threshold. So, the situation resembles that of a summation global public good, in which each country faces an incentive to individually contribute just under what needs to happen to avoid going over the threshold—behaviour confirmed in experiments (Barrett and Dannenberg 2012, 2017). Schill and Rocha (2023) report that this uncertainty does not preclude cooperation to sustain local commons, but Ahsanuzzaman, Palm-Forster and Suter (2022) condition this result on the possibility of having effective communication at the local level.

50 Dannenberg and Barrett 2018; Dannenberg and Gallier 2020. On existential risks, see Ord (2020).

51 Barrett and Dannenberg 2014.

52 For an early review of deviations from the rational choice model in actual collective action behaviour, see Ostrom (1998), which also provides a set of ideas on how to expand behavioural assumptions to account for those observations. For recent reviews, see Dijk and Dreu (2021) and Van Lange and Rand 2022.

53 These departures should not assume that the standard selfish choice model gives a more accurate account of human behaviour but rather that a model of choices provides a reference against which to structure deviations. Thus, expressions such as cognitive biases and nonstandard preferences are not necessarily deviations from rationality but rather deviations from the standard selfish choice model. Attempts to empirically measure economic rationality have been shown to be unreliable (Nitsch and others 2022). The discussion of behavioural insights adopted here follows the language proposed by DellaVigna (2009), who grouped deviations from the standard selfish choice model in three categories: nonstandard preferences, nonstandard beliefs and nonstandard decisionmaking. Care must be taken in extrapolating insights from theory and experiments based on individual choices to group choices, given some early suggestive evidence that groups or teams may be less subject to behavioural biases (see Ambrus, Greiner and Pathak 2015; Charness and Sutter 2012; Feri, Irlenbusch and Sutter 2010; Kugler, Kausel and Kocher 2012.). However, more recent analysis suggests that behavioural insights are also relevant for group and team behaviour (Charness and Chen 2020). See Bechtoldt and others (2021) for a specific mobilization of insights from psychology to understand underinvestment in climate change adaptation. Before experimental evidence appeared, much of it reviewed here, Amartya Sen had already undertaken a critique of some of the behavioural assumptions of the selfish choice models (as in Sen 1973, 1977, 1997).

54 As argued in Boon-Falleur and others (2022) for the global public good of climate change mitigation and in Van Bavel and others (2020) for the global public good of Covid-19 control. See Van Bavel and others (2022) for a review of the interplay between cognition, norms, and institutions in shaping group cooperation.

55 Fehr and Schmidt (1999) documented that respondents in experiments exhibited inequality aversion, valuing others' payoffs positively if the others were worse off than the respondents and negatively if the others were better off. Another expression of social preference is pure altruism, where payoffs of others are never valued negatively (Andreoni 1989; Andreoni and Miller 2002; Charness and Rabin 2002). We are grateful to Wolfgang Buchholz for pointing out that Kantian optimization is an alternative to purely selfish utility maximization (Roemer 2019; Van Long 2020). Prosocial motives can sometimes be in tension, or even conflict, presenting cognitive challenges on how to resolve them in decisionmaking (Li and others 2022; Sinnott-Armstrong and McKee 2022). Other approaches to nonstandard preferences include Frank (1987) on endogenous preferences and Akerlof and Kranton (2000) on the role of identity.

56 Axelrod and Hamilton 1981. Recent advances in genetic, microbiological and analytical approaches have revolutionized our understanding of cooperation across all forms of life and all levels of biological organization (West, Griffin and Gardner 2007a; West and others 2021), from genes, to cells—and even viruses (Leeks, West and Ghoul 2021). For instance, bacteria depend on the excretion of products from individuals that benefit the bacterial group to enable scavenging for nutrients or for communication (Belcher and others 2022; West, Griffin and Gardner 2007a). Biologists have provided a unified theory that explains the emergence and maintenance of cooperation across the natural world based on the notion that an individual gains inclusive fitness (reproduction of its genes) through the impact on direct fitness (their own reproduction) or on indirect fitness (reproduction of related individuals due to the behaviour of the individual). Evolutionarily stable strategies describe interactions where cooperation evolves and is maintained (see Alger 2023 for a recent review), and longstanding debates on kin versus group selection are now mostly clarified (Birch 2019). Social preferences or their equivalent are not required. While this is also the case for humans in many instances (thus, the enduring relevance of the selfish choice model), human cooperation has distinct features, given in part the ability of humans to evolve culturally (Apicella and Silk 2019) and to engage in social learning (although that does not always imply cooperation; Burton-Chellew, El Mouden and West 2017, and cooperation does not always imply positive societal outcomes, as when it involves firms colluding or illicit networks). Still, there is debate on whether cultural evolution, discussed in spotlight 4.3, fits with these broader findings of cooperation

in the natural world, driven in part by issues of language and meaning attributed to the same terms (Micheletti, Brandl and Mace 2022; West, Griffin and Gardner 2007b).

57 Herrmann, Thöni and Gächter (2008) show that antisocial punishments also exist and that they can be socially beneficial when supported by strong norms of cooperation. The motivations for punishment and reward often go beyond what would be required to simply sustain self-interest in reciprocal relationships (Fehr and Gächter 2000, 2002). It has been argued that social preferences rather than selfish preferences are the rule (Bruhin, Fehr and Schunk 2018). Burton-Chellew (2022) argues that what has been interpreted as altruism in experiments may result from confusion over the rules and that humans are thus self-interested. Still, there is strong evidence that people often behave as if having other-regarding preferences. For instance, recent evidence from neural correlates of social preferences, which have been mobilized to inform economic behaviour in multiple perspectives (Camerer, Loewenstein and Prelec 2005), suggests that while strategic deliberation in how to advance self-interest may also play a role, emotional processing is a key mechanism. Pioneering studies include Corradi-Dell'Acqua and others (2013), Corradi-Dell'Acqua and others (2016), Gabay and others (2014) and Sanfey and others (2003). Wang and others (2020) find evidence that altruistic behaviours relieve physical pain. For a recent meta-analysis confirming the findings that emotional processing is key for social preferences, see Cutler and Campbell-Meiklejohn (2019). Rhoads, Cutler and Marsh (2021) establish that prosocial behaviour can be associated with strategic intent but may also be motivated purely by altruistic reasons. Much of this literature relies on functional magnetic resonance imaging (fMRI). For caution on how to interpret fMRI results in light of lack of knowledge about how the brain functions, see Bellucci and others (2020). Further, deviations from fairness are more aversive for individuals with more prosocial preferences (Liu and others 2019), and exceptionally altruistic behaviour (for instance, by kidney donors) cannot be accounted for by utilitarian reasoning (Amormino, Ploe and Marsh 2022; Rhoads and others 2023a; Rhoads and others 2023b).

58 Some of which may be associated with heritability (Benjamin and others 2012; Cesarini and others 2008).

59 Fehr and Charness forthcoming.

60 A different explanation for the experimental results interpreted as revealing social preferences is that participants were confused about the experiments, and as they started to understand what was at stake and learned, they behaved in a way consistent with the selfish choice model (see Burton-Chellew 2022, Burton-Chellew and West 2021, Burton-Chellew, El Mouden and West 2016 and Burton-Chellew, Nax and West 2015). There is also the possibility that nonselfish behaviour derives from personal norms rather than from social preferences (Capraro and Perc 2021; Capraro and others 2019).

61 The share of the population with inequality aversion social preferences ranges from 23 percent to 68 percent, and the share of altruists is between 12 percent and 47 percent. Student samples, often used in experiments, deviate from these populationwide distribution of preferences (for instance, the share of selfish preferences in student samples ranges from 29 percent to 58 percent; Fehr and Charness forthcoming). It also appears that prosocial preferences are more consistent and less context dependent than the choices people make that involve moral reasoning, such as when weighing ends-versus-means tradeoffs (Bénabou, Falk and Henkel 2024).

62 Iwasaki 2023.

63 As established in Thielmann, Spadaro and Balliet (2020), a recent meta-analysis of 770 studies reporting on 3,523 effects of a range of prosocial behaviours in interdependent situations modelled in six commonly studied economic games (dictator game, ultimatum game, trust game, prisoner's dilemma, public goods game and commons dilemma). When people mix private and social motivations (for example, a vaccine provides individual protection but also advances herd immunity), the social motivation often is a more powerful driver of behaviour (Böhm and Betsch 2022; Korn and others 2020; Pfattheicher, Petersen and Böhm 2022). Chang and others (2023) show that reminders, but not monetary incentives, increased the uptake of Covid-19 boosters in California in the United States. For a discussion of the conditions in which prosocial preferences support cooperation beyond groups, see Tilman, Dixit and Levin (2019).

64 See Fehr and Charness (forthcoming) for the theoretical implications of inequality aversion for cooperation and a review of confirmatory evidence.

65 Brekke and Johansson-Stenman 2008; Buchholz and Sandler 2017.

66 Elster 1989.

67 Legros and Cislaghi 2020; Tverskoi and others 2023.

68 Van Lange and Rand 2022.

69 Fehr and Charness (forthcoming) provide a discussion of the theory and a review of the evidence on how social image concerns can drive prosocial behaviour. Self-image concerns (how one sees oneself) also matter but appear to be less important than other-regarding motives (Vu and others 2023).

70 Lergetporer and others 2014.

71 Overly strict social norms across countries can trigger more violations, according to the findings of Aycinena and others (2022).

72 Some evidence suggests that rewards outperform punishment in promoting cooperation to provide public goods (Rand and others 2009).

73 Elster 1998, 2015b. Sociologists going back to Goffman (1959) have emphasized how guilt and stigma contribute to norm compliance. Social norm compliance and related emotions such as stigma have also been shown to affect economic outcomes—for example, unemployment (Lindbeck, Nyberg and Weibull 1999). Social norms can be so much part of people's mindset that they become embedded (Granovetter 1985). Basu (2010) argues that the "invisible hand" of Adam Smith would not be able to deliver if not for certain norms guiding behaviour. For further elaborations and implications of this reasoning, see Basu (2022, 2024).

74 Fehr and Schurtenberger 2018. Ohtsuki and Iwasa (2006) identify eight social norms of indirect reciprocity that can maintain evolutionarily stable strategies of cooperation in evolutionary models, but the number is reduced when assessments of who are good cooperators are private and noisy (Fujimoto and Ohtsuki 2023).

75 The evolutionary and psychological processes underpinning the norm of conditional cooperation (or social norms more widely) remain an area of active research (Gross and Vostroknutov 2022). There is evidence that norm psychology is universal but that different norms can emerge in different historical and cultural contexts (House and others 2020; Kanngiesser and others 2022), but see Heyes (2023) for a different view. There is evidence of universality in the positive moral valence of cooperation (documented for a set of cooperative behaviours observed in the ethnographic record of 60 societies across all regions of the world (Curry, Mullins and Whitehouse 2019; see also Rossi and others 2023 and Van Bavel and others 2022, who identify shared cross-cultural principles of prosocial behaviour). Compliance with cooperative behaviour can be explained as an internalization of social norms through cultural evolution (Gavrilets and Richerson 2017; but see Akdeniz and van Veelen 2021 for a different perspective and Bar-On and Lamm 2023 for the potential role of social identity). Tverskoi and others (2023) show that conformity with personal and social norms has more impact in decisionmaking than material benefits.

76 Due in part to processes of social comparison. See Bergquist and others (2023), Frank (2021) and Helferich, Thøgersen and Bergquist (2023) for applications to behaviours to mitigate climate change.

77 Constantino and others (2022) discuss the opportunities and challenges of harnessing social norms to address climate change.

78 Gelfand and others 2011; Jackson, Gelfand and Ember 2020.

79 Choi and others 2022; Jackson and others 2019.

80 Gelfand 2021. The threat can be either real or perceived, because, as Buchanan (2020, p. 181) put it, "[...] a fundamental fact about human beings: we are belief-driven creatures, but we are epistemically fallible—prone to serious errors in the formation and preservation of our beliefs. What we believe makes a difference in how we act and sometimes even fully determines how we act, but we can be and often are mistaken in our beliefs. If we falsely believe that the Other poses a threat, we react just as strongly and negatively as we would if our belief were true. The beliefs, not the facts, are what matter."

81 Gelfand 2021; Gelfand and others 2021.

82 Gelfand and others 2020.

83 Giuliano and Nunn 2020; Gelfand, Gavrilets and Nunn 2024; Nunn 2022.

84 Meyer 2010.

85 Pierotti 2013. On the mechanisms for this diffusion of norms (including the roles of media and international organizations) in a specific country, see Swindle (2023).

86 On the politics of backlash, see Alter and Zürn (2020a, 2020b). On the link with political polarization, see Röllicke (2023).

87 Sandler 2017; Schwerhoff 2016.

88 These insights have been characterized as opening a golden age for social science (Buyalskaya, Gallo and Camerer 2021).

89 Sometimes called nudge units.

90 Aumann (2019) argues that many of the cognitive biases emerge from contrived situations that are not what most people confront in their day-to-day life.

91 More precisely, choices reflecting a larger aversion to potential losses than the appeal of an equal-size gain relative to some point of reference (Kahneman and Tversky 1979; Tversky and Kahneman 1992). For a review of empirical estimates and efforts to quantify the strength of loss aversion, see Brown and others (forthcoming). However, there are also circumstances under which it does not appear to hold (Rakow, Cheung and Restelli 2020; Zeif and Yechiam 2022).

92 Camerer and others 1997.

93 Alesina and Passarelli 2019.

94 Litovsky and others 2022.

95 Olitsky and Cosgrove 2023.

96 Following the taxonomy proposed in Chetty (2015).

97 Allcott and Kessler 2019. Reck and Seibold (2023) provide a theoretical elaboration with an application to the design of retirement policies.

98 As advocated by Sunstein (2022).

99 See Milkman and others (2021) for successful reminders that increased vaccination uptake.

100 Van Bavel and others 2020.

101 Muthukrishna and Henrich 2019. The heterogeneity of experimental designs is also a barrier to the generalization of findings from experiments, as shown in Huber and others (2023).

102 Following Davis (2023), who makes this argument to improve international relations theory.

103 See Hecht and others (2023) for an account of how contextual factors affect behavioural interventions.

104 As argued in Stiglitz (2021).

105 We are grateful to Melissa Leach for this observation.

106 For the metrics of these cultural packages, Muthukrishna and Schaller (2020) and White, Muthukrishna and Norenzayan (2021) draw on a metric of cultural distance from the United States. Obradovich and others (2022) draw on social media behaviour of 2 billion people to create metrics for different cultural dimensions.

107 Brooks and others 2018; Kaaronen, Mulder and Waring 2023; Lawson and Gibson forthcoming; Richerson and others 2016; Waring, Goff and Smaldino 2017; Waring and others 2015.

108 Bar-On and Lamm 2023.

109 As defined in North (1990) comprising both formal and informal institutions that shape people's behaviour. Following Schimmelpfennig and Muthukrishna (2023), formal institutions can be considered "hardened culture," written down to allow for easier coordination and application but still underpinned by cultural norms.

110 Kaushik Basu (2018) argued that there is an "if and only if" condition.

111 One of the greatest impacts of international treaties is making salient in domestic constituencies an issue immediately after a treaty is adopted rather than as a result of the often long and drawn-out process of ratification and entering into force—that is, ideas seem to be more powerful than legal obligations (Hoffman and others 2022).

112 The discussion in this chapter is not meant to suggest that collective action can always be reduced to the atomistic behaviour of individual agents interacting to shape institutions. As noted at the beginning of the chapter, collective action can also be described as an emergent outcome in complex adaptive systems, with agents interacting at multiple levels of aggregation under constraints imposed by formal institutions.

113 See also Bednar (2023) and Bednar and Page (2018).

114 Efferson, Vogt and von Flüe forthcoming.

115 Otto and others 2020; Sparkman, Howe and Walton 2021; Winkelmann and others 2022.

116 Rode and Weber 2016.

117 Centola and others 2018; Centola and Baronchelli 2015.

118 Efferson (2021a) shows that this is particularly challenging outside of social coordination norms, which are often assumed to be in place (Szaszi and others 2018).

119 A replication of the study mentioned in box 4.3 on whether people return wallets failed to confirm the results when the reporting of the missing wallet was done physically rather than by e-mail (Yang and others 2023). But see Tannenbaum, Maréchal and Cohn (2023) and Zhang and others (2023).

120 Cohn, Fehr and Maréchal (2014) found that although Swiss bankers in general were honest, when their profession was made salient through priming, they behaved less honestly. In contrast, when people with other professions also had their professions made salient through priming, there was no change in behaviour. However, the results could not be replicated in other cultural contexts (Cohn, Fehr and Maréchal 2019). Rahwan, Yoeli and Fasolo (2019) conducted the same study in five different populations across three continents and found that the results did not generalize, in part because of differences in banking culture in different jurisdictions. An analysis of intrinsic honesty across 23 countries provides evidence consistent with the hypothesis that behaviours and institutions/culture coevolve (Gächter and Schulz 2016).

121 Henrich and others 2001. These exceptions are often observed in small-scale societies, and there is some evidence suggesting that, at least when it comes to cooperation, there might be greater similarity in behaviour across large-scale societies (Spadaro and others 2022)—that is, even though over time there were differences across cultures (some of which remain small scale and where those behaviours persist), there may be some convergence of behaviour when it comes to large-scale societies, but the evidence is still not conclusive.

122 Henrich, Heine and Norenzayan 2010b.

123 Apicella, Norenzayan and Henrich 2020; Henrich, Heine and Norenzayan 2010a.

124 Schäfer, Haun and Tomasello 2015. On the importance of cultural similarities across and between countries, see White, Muthukrishna and Norenzayan (2021).

125 This corresponds to a type of social preference that takes as a reference point not equality in incomes, as in the inequality aversion social preferences (Fehr and Schmidt 1999) considered earlier in the chapter, but the type of equality that is considered fair, which is different for different people, depending on their views of fairness. For an implication of this perspective for how to measure inequality without having absolute equality as a reference, see, for instance, Hufe, Kanbur and Peichl (2022).

126 As in Fleurbaey (1995), as noted in Almås, Cappelen and Tungodden (2020).

127 Almås, Cappelen and Tungodden 2020.

128 Almås and others 2017.

129 Almås and others 2010.

130 See Almås and others (2022) for documentation of the variation in the belief that the rich are selfish across and within countries.

131 Almas and others (2022) show that plotting country-level responses to the question from the World Values Survey, "Should the national government aim to reduce the economic differences between rich and poor?" against inequality in disposable income shows no correlation, but when the answer to the question is plotted against "Inequality is unfair," there is a strong positive correlation between beliefs that inequality is unfair and support for redistribution. However, there are other determinants of preferences for redistribution; see, for instance, Charité and others (2022).

132 See Thomas and Markus (2023).

133 This recognition can provide guidance on whom to target, how and for what. Is the purpose to simply change behaviour, or is it to enhance welfare—goals that may not always be aligned. We are grateful to Charles Efferson for these insights. See also Berger,

Efferson and Vogt (2023), Efferson, Vogt and Fehr (2020), Efferson, Vogt and von Flüe (forthcoming), Richerson, Boyd and Efferson (2024) and von Flüe, Efferson and Vogt (2024).

134 Brooks, Hoff and Pandey 2018.

135 Carlson and others 2022.

136 Balliet and Lindström 2023; Colnaghi and others 2023; Fiedler and others forthcoming.

137 Halevy 2017, 2023; Halevy, Chou and Murnighan 2012.

138 Halevy and Halali 2015; Halevy and others 2006.

139 Shiller (2017) describes how narratives shape macroeconomic outcomes. Levy (2022) explains the social processes that lead people to hold beliefs, often shaped by the context of the group with which they are affiliated, and the limits of assumptions that beliefs will be formed on the basis of individual rational processing of information. De Vries (2023) explores how four different foundational narratives about the European Union continue to shape political, economic and legal outcomes. For a recent review on the literature on the psychology of poverty, see Haushofer and Salicath (2023).

140 Gelfand, Gavrilets and Nunn 2024; Nunn 2022.

141 Ellis 2024; Richerson, Boyd and Efferson 2024; Waring, Wood and Szathmáry 2024.

142 Hoff and Demeritt forthcoming.

143 Hoff and Demeritt forthcoming. For a discussion on how these insights can be mobilized to imagine pathways to navigate the Anthropocene that ease planetary pressures and advance equitable human development, see Efferson (2023), Efferson, Vogt and von Flüe (forthcoming) and Ellis (2024).

144 Constantino and Weber 2021, p. 151. For evidence on how socially dominant groups can harbor biases against other groups, see Morehouse, Maddox and Banaji (2023).

145 Daley, Newell and Twena 2022; Fleurbaey and others 2018; Scoones and others 2020; Stirling 2015; Stoddard and others 2021.

146 As articulated in Amartya Sen's (Sen 1985, 2009b) notions of agency expressed both as achievements and as freedoms. For more recent articulations of similar ideas, see Bednar (2023) and Carugati and Levi (2021).

147 Shared interests can be conceived as falling along a spectrum, from none, where there is high potential for conflict, to complete, where there is high potential for cooperation, following West and Ghoul (2019), in an analysis of how cooperation and conflict coexist in the natural world. Most situations fall somewhere close to the endpoints, thus suggesting the potential for both conflict and cooperation. The provision of global public goods can be seen as exploring domains of the spectrum closer to where there are shared interests and thus where the potential for cooperation is higher.

148 Davidai and Tepper 2023. While these findings are at the individual level, a multilevel study of 43 countries confirmed an isomorphism in zero-sum beliefs that scales from the individual to the country level (Różycka-Tran and others 2018).

149 Davidai and Ongis 2019.

150 As reflected in reductions in helping others (Chernyak-Hai and Davidai 2022) or countries agreeing to host refugees (Piotrowski and others 2019).

151 Carvalho and others 2023.

152 Melis and Raihani 2023, p. 532.

153 O'Madagain and Tomasello 2022. In other words, it is the essence of what can be termed cultural cognition, as argued in Tomasello and Vaish (2013) and Tomasello and others (2005).

154 Gross and others 2020.

155 Melis and Raihani 2023, p. 532.

156 For instance, there is evidence that the care motive leads to higher levels of cooperation, driven by more optimistic beliefs, and shifts towards more social preferences than when cooperation is sought by activating an anger motivation (Ring, Schütt and Snower 2023). See also Akerlof and Snower (2016) and Bartke and others (2019).

157 Some evidence suggests that contributions to public goods and cooperative dynamics emerge voluntarily when people are given the choice of which public good to contribute to (Shi and others 2020). If this extends to countries in the international context, different countries could take the lead in volunteering to contribute to trigger cooperative dynamics.

158 Again, there are differences across people, with traits differing across domains on whether people are more or less likely to affiliate with groups (Kranton and others 2020). See also Doğan, Glowacki and Rusch (2022).

159 Romano and others 2017; Romano and others 2021a; Romano and others 2021b. For a description of correlates of people developing a more cosmopolitan orientation, see Zhang and others (2024).

160 Schimmelpfennig and others 2022.

161 Boeltzig, Johansson and Bramão 2023; Vasconcelos and others 2021.

162 Bechtel, Genovese and Scheve 2019.

163 Chinoy and others 2023.

164 Van Bavel and others forthcoming; Wagner and others 2020.

165 Bollyky and others 2022a; Bollyky and others 2022b; Bor, Jørgensen and Petersen 2023; Lenton, Boulton and Scheffer 2022.

166 Henkel and others 2023.

167 Berger, Vogt and Efferson 2022.

168 Berger, Efferson and Vogt 2023.

169 For a review of the social identity theory of collective action, see Van Zomeren, Postmes and Spears (2008). Whitehouse (2018) and Whitehouse and Lanman (2014) describe identity fusion, the visceral sense of oneness with the group, as eliciting cooperation within groups to the point of potentially leading to extreme self-sacrifice. See also Huettel and Kranton (2012).

170 Sen 2005, 2006, 2009a. Dulberg and others (2023) show how having multiple selves could have evolved as a solution to the perennial problem of balancing multiple needs in changing contexts.

171 This implies that the assumption that tipping can be triggered under what is assumed to be a social coordination norm may not hold and that interventions can be either ineffective or counterproductive (Efferson and others 2015).

172 Efferson, Vogt and Fehr 2020; Efferson and others 2015; Ehret and others 2022.

173 Under the assumption that many people are conditional cooperators (Berger, Efferson and Vogt 2023).

174 The ecological macro model places humans in the context of their relationships with predators and prey (Lehman and others 2021).

175 The period of rapid population growth can be described as one where humans entered into a mutualistic interaction with animals and plants rather than being their predator (see also Pollan 2002); this followed a first ecological transition when humans were able to outcompete their predators (Lehman and others 2021). In both transitions processes of cultural evolution were determinant. Mutualism is pervasive in many forms across many species in the natural world and tends to be maintained by either shared interest or enforcement, but it is likely to evolve in the first place as a result of shared interest, with enforcement evolving later to strengthen the mutualism (West and others 2021).

176 Colleran 2016.

177 Lehman and others 2021.

178 Lehman and others 2021.

CHAPTER 5

1 Sen 1991; UNDP 2022a. Goal-directed agency (exhibited by reptiles) and even intention-directed agency (exhibited by mammals) are not exclusive to humans, nor is the pursuit of self-interest, as in the models of selfish choices reviewed in chapter 4 (exhibited by great apes, for instance; Jensen, Call and Tomasello 2007 found evidence that chimpanzees are rational maximizers in an ultimatum game). Nonhuman animals appear also to follow (descriptive) social norms (based on the need to conform that humans share with other social, nonhuman animals) (Andrews, Fitzpatrick and Westra 2024; Westra and others forthcoming). But, according to O'Madagain and Tomasello (2022) and Tomasello (2022), humans are different in that they evolved the ability to define and pursue shared intentionality and agency, which have been argued to be the basis for the origins of cultural cognition (Tomasello and others 2005). While there are different views on the evolutionary pathways that led humans to be able to evolve injunctive and moral norms (Stanford 2017, 2018), this corresponds to an expression of human agency that transcends the pursuit of self-interest. It has also been argued that humans have a flexible moral psychology that enables, through processes of public reasoning and deliberation (see

chapter 6), to establish moral norms, and institutions that support them, that are inclusive of not just all humans but potentially other beings (Buchanan 2020, 2021; Buchanan and Powell 2018). For one psychological view on human agency, see Bandura (2001, 2006).

2 Sen 2016, p. 7.

3 Based on data from the World Values Survey (see figure 5.3 later in the chapter).

4 The distinction between wellbeing and agency aspects of development follows Sen's (1985, 1991) framing.

5 Sen 1991.

6 "Strategies for human development initially emphasized investing in education and health, and promoting equitable economic growth—the three dimensions of the HDI. These mobilize the individual agency of people and strengthen their productive capacity for their own private interest" (Fukuda-Parr 2003, p. 309).

7 Based on Dr. Engel's biopsychosocial model, briefly explained in Conti (2022).

8 Folke and others 2021; UNDP 2022a.

9 Following Elster (2015a), collective decision-making is the processes through which decisions emanating from collective belief formation and collective action get implemented. Those processes include arguing, voting and bargaining.

10 Turchin 2013.

11 This is equivalent to 47 percent of the global population. According to reporting on Sustainable Development Goal indicator 1.3.1 (https://www.social-protection.org/gimi/WSPDB.action?id=32, accessed 16 November 2023).

12 As of 2022, in preprimary, primary and secondary education. According to the database of the United Nations Educational, Scientific and Cultural Organization Institute of Statistics (http://data.uis.unesco.org/, accessed 16 November 2023).

13 Vaidyanathan 2024.

14 For instance, in 2023 the SDG Action Campaign mobilized 150 million actions (EIN Presswire 2023).

15 As of 2023, based on data from the International Telecommunication Union (https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx, accessed 16 November 2023).

16 Carleton and Greenstone 2022; Stiglitz and Stern 2017.

17 See Carleton and others (2022).

18 IEA 2023a.

19 Black and others 2023.

20 Papada and others 2023.

21 Tørsløv, Wier and Zucman 2022.

22 Based on OECD (2022) The mobilization of resources reached $83.3 billion in 2020, which is less than 0.1 percent of the $85 trillion of global GDP in that year. In 2022 global GDP surpassed the $100 trillion mark (International Monetary Fund World Economic Outlook database, April 2003, https://www.imf.org/en/Publications/WEO/weo-database/2023/April/weo-report.

23 Vaidyanathan 2024.

24 See Sénit (2020).

25 Tørres 2021.

26 Global Witness 2023.

27 Including the rise of negative experiences, such as anger, stress, sadness, physical pain and worry (Clifton 2022).

28 For evidence on economic insecurity and support for populism (in Europe), see Guiso and others (2019, forthcoming). While it has also been argued that economic insecurity has led to fractionalization (that is, the emergence of more, niche parties beyond those broadly representing different segments along the political spectrum) of the political system, there is a distinction between polarization and fractionalization in electoral systems; see Norris (forthcoming).

29 Funke, Schularick and Trebesch 2023; Rodrik 2021.

30 Prados de la Escosura 2022.

31 Support for democracy was also found to be strong and robust in a detailed study of Brazil, France and the United States (Adserà, Arenas and Boix 2023).

32 See Kurlantzick 2022; Nichols 2021; UNDP 2023b.

33 This question was suggested by the United Nations Development Programme, contributing towards the pilot of the measure for Sustainable Development Goal indicator 16.7.2.

34 The notion of agency linked with collective outcomes has been referred to as "collective agency." See, for instance, Ibrahim (2006), Leßmann (2022), Pelenc, Bazile and Ceruti (2015) and Rauschmayer and others (2018).

35 Confidence in institutions depends on multiple factors. For instance, Hirai (2020) presents a framework where confidence in institutions is linked to trust in their intentions and competence. Elster (2015a) also argues that trust in institutions is often underspecified in that it can mean different things (integrity, competence or even that the institution is feared). Another related concept is legitimacy of institutions (see Levi, Sacks and Tyler 2009 and chapter 4). In this and chapter 6, trust and confidence in institutions are used interchangeably to reflect the sense to which people consider that they are delivering what is expected of them.

36 Sen 1991; UNDP 2022a.

37 Sen 1977, p. 326.

38 There are many potential sources for these commitments and their relationship to sustaining cooperation, from social norms (see spotlight 4.3 in chapter 4) to inferences about other people's motives (Carlson and others 2022) to moral values (Stanford 2018) to individual and public reasoning about what should be the subject of moral concern that shapes different perspectives on moral progress (Buchanan 2020; Sauer and others 2021; Sterelny 2019). Commitments can also take the form of codes of conduct to, for example, punish actions against agents that defect during cooperation (even if this punishment harms the wellbeing of the punisher), which is a mechanism that sustains cooperation (Ostrom 2000)

39 Leßmann 2022.

40 Advancements in reducing inequality, addressing human insecurity and challenging biases against cooperation in social norms, as well as in enhancing spaces for deliberation, can influence the stressors and facilitators for large-scale collective action, as described by Jagers and others (2020).

41 For an elaboration on the relationship between agency and poverty, see Rahman (2023).

42 Rasmussen and Reher 2023.

43 For the definition of perceptions of insecurity and the link with the notion of human security, see UNDP (2022b).

44 For an elaboration on the connections between human security and constraints on people's engagement with collective action, see UNDP (2022b).

45 UNDP 2022a.

46 UNDP 2022b; Ziervogel, Cowen and Ziniades 2016.

47 Sen 2009, p. vii.

48 UNDP 2023a.

49 See, for instance, Schaeffer (2020).

50 UNDP 2023a.

51 UNDP 2023a.

52 UNDP 2023a.

53 Abdul Latif Jameel Poverty Action Lab 2020; UNDP 2023a.

54 UNDP 2023a.

55 UNDP 2022a.

56 Corat and Raimondo 2011.

57 Krause, Krause and Bränfors 2018; Stone 2015; UN Women 2015.

58 Krause, Krause and Bränfors 2018.

59 Stewart, Holdstock and Jarquin 2002; World Bank 2018.

60 For example, between 1992 and 2019, only 6 percent of peace agreement signatories were women. See Council on Foreign Relations (2023).

61 Gebhard and others 2020; Huang and others 2021. In part due to higher prevalence of pre-existing cardiovascular conditions, which were found to increase vulnerability to Covid-19 (Griffith and others 2020).

62 P. Clapp 2023; Dang and Nguyen 2021.

63 UN Women 2021. Several studies find evidence of increased domestic violence during the Covid-19 pandemic, in both developing (Agüero 2021; Decker and others 2022; Kifle and others 2024) and developed countries (Berniell 2021; Piquero and others 2021).

64 Blanchflower and Bryson 2022.

65 Brooks, Hoff and Pandey 2018; Hoff and Walsh 2019.

66 Lloyd's Register Foundation and Gallup 2022.

67 UNDP 2020b.

68 Jens Beckert has long emphasized the importance of future framings on enabling institutions to deliver "promisory legitimacy" in addition to process and outcome legitimacy (Beckert 2013; Beckert 2020; Beckert and Bronk 2018; Beckert and Suckert 2021).

69 UNDP 2019.

70 See UNDP (2019) for a review of the literature on the great divergence.

71 These are called joint products in the literature, and formally, this makes these cases instances of impure global public goods, because they also generate (private) country-specific benefits in recipient countries. See Cornes and Sandler (1996).

72 Can, because there might also be negative effects and trade-offs, as discussed in Cohen and others (2021), Finus and Rübbelke (2013) and Pittel and Rübbelke (2008). For a review of co-benefits of climate change mitigation, see Deng and others (2018).

73 Ürge-Vorsatz and others 2014.

74 Karlsson, Alfredsson and Westling 2020; Negev and others 2022.

75 Some of the costs, at least in macroeconomic terms, of pricing carbon appear to be overstated. See Metcalf and Stock (2020).

76 For details on these initiatives and the short-term costs of subsidies, see Buchholz, Dippl and Eichenseer (2017) for Germany and Hughes and Podolefsky (2015) for California.

77 Gerarden 2023.

78 Carvalho, Dechezleprêtre and Glachant 2017.

79 Bollinger and Gillingham 2019.

80 Gillingham and Stock 2018.

81 Nussbaum 2013.

82 Bernauer and Gampfer 2015.

83 Brumme and Rübbelke 2023.

84 Kremer 2006; Kremer and Leino 2004.

85 Amin 2016.

86 As explored in Chan (2019).

87 King 2006.

88 Glennerster and Jayachandran 2023.

89 Shiller and others 2018. State-contingent sovereign debt instruments have been supported by, among others, the International Monetary Fund (IMF 2017). If state-contingent debt instruments are more expensive than standard ones, there is a need to either subsidize this cost or coordinate their deployment, to avoid arbitrage. International financial institutions can play a role in this regard. Shiller (2006) argues that state-contingent debt instruments have properties that are similar to equity financing, noting that equity-like financing for sovereigns (unlike for corporates) is typically not available.

90 G20 2023a.

91 Haq and Streeten 1995.

92 For discussions related to economic governance in what the works describe as a fractured world, see Brown, El-Arian and Spence (2023) and Tucker (2022).

93 UN 2023b.

94 OPHI and UNDP 2023.

95 UNDP 2022b.

96 For instance, the Stiglitz Commission for the Reform of the International Financial and Monetary System (convened in 2008, in the middle of the global financial crisis) suggested establishing a Global Economic Coordination Council as an option (Stiglitz Commission 2009).

97 Notably, through the 171 members of the Global Forum on Transparency and Exchange of Information for Tax Purposes. In 2022 information on almost EUR 12 trillion in assets was automatically exchanged. See OECD (2024b).

98 OECD 2024a.

99 United Nations Secretary-General 2023.

100 Alstadsæter and others 2023.

101 Alstadsæter and others 2023.

102 The 2030 Agenda for Sustainable Development was an important step in that direction. More recently, the World Bank announced a new mission statement: "to end extreme poverty and boost shared prosperity on a livable planet by strengthening inclusion, resilience, and sustainability," which aligns with a forward-looking and planetary perspective (Development Committee 2023).

CHAPTER 6

1 The emergence and management of the deep interdependence documented in part I of the Report have been supported by international collective action. Many aspects of this interdependence are associated with post–World War II international organizations and regimes (Keohane 1982) and numerous global public goods (Kaul, Grunberg and Stern 1999; Kaul and others 2003).

2 As discussed in chapter 4, coordination across countries is often easier to achieve than cooperation.

3 This chapter considers polarization from different perspectives. The emphasis common to all perspectives is the divisiveness in society across political or identity lines: "It signifies a deepening divide between groups holding contrasting viewpoints on political matters and on approaches to addressing complex societal issues" (spotlight 6.1). Within this broad definition political polarization is understood as "the extent to which citizens become ideologically entrenched in their own values and political beliefs, thereby increasing the divide with citizens who hold different values and political beliefs" (van Prooijen 2021, p. 2). Another related concept is affective polarization, defined as the tendency to view outgroup members negatively and ingroup members positively in ways that often trigger visceral or emotional responses (Iyengar, Sood and Lelkes 2012). Affective polarization is particularly concerning because it reinforces ingroup solidarity and outgroup hostility, where interests and other motivations of behaviour become secondary to an overarching sense of belonging to the group. Thus, affective polarization has implications on behaviour that extend beyond differences in views, affecting many aspects of people's lives (where to live, who people choose as friends or partners). Thus, affective polarization can become a self-sustaining runaway process as people become more and more sorted and divided, deepening polarization even more (the discussion on affective polarization here is based on Baldassarri and Page 2021). There is evidence that polarization even implies different neurological responses to different attitudes (Leong and others 2020; Moore-Berg and others 2020).

4 Kosse and others 2020.

5 Charness and Chen 2020; Charness and Sutter 2012; Doğan, Glowacki and Rusch 2022.

6 Appiah 2019, p. 26. The same applies to the cultural similarity of people that affiliate with the same religion, even when they live in different countries (White, Muthukrishna and Norenzayan 2021).

7 Romano and others 2021b.

8 For the analysis of the difference in cooperation within and across countries, see Aaldering and Böhm (2020).

9 Buchan and others 2011.

10 Romano and others 2017. Kranton and others (2020) show that "groupy" and "nongroupy" attitudes by individuals stretch across different domains (from politics to simplified social contexts). See also the discussion later in the chapter on differences in attitudes towards global concerns among people within countries.

11 Baldassarri and Abascal 2020; Buchan and others 2009.

12 Bai, Ramos and Fiske 2020. Stereotyping in itself is also a barrier to cooperation, in that people who are perceived as conforming with one are seen as less trustworthy (Stewart and Raihani 2023). In a fascinating new study musical tastes and preferences are shown to become more diversified as people visit new cities and countries (Kim, Askin and Evans 2024).

13 Gorman and Seguin 2020.

14 Asking people to make judgements on different goals before coming to a decision—appealing to reason and subjecting beliefs to scrutiny—is effective in decreasing polarization and extremism (Kvam and others 2022).

15 Whitehouse 2018; Whitehouse and Lanman 2014.

16 Oeberst and Imhoff 2023.

17 For instance, users choose to engage with more partisan news after doing Google searches, so there is volition-conscious selection, not merely passive exposure to partisan information in "echo chambers" (Robertson and others 2023). Still, digital media can also drive

processes of affective polarization by shifting the focus of intergroup differences from one of divergence in opinions to one of sorting people into different groups (Törnberg 2022). See Tokita, Guess and Tarnita (2021) on how polarized information systems can reorganize social networks in ways that foster polarization. See also Santos, Lelkes and Levin (2021).

18 Jost, Baldassarri and Druckman 2022. While often discussed in binary terms in two-party systems, affective political polarization also happens in multiparty systems (see Martin-Gutierrez, Losada and Benito 2023) and can manifest itself beyond party lines when groups take opposing positions beyond party lines of issues.

19 Charness and Chen 2020.

20 Baldassarri and Page 2021. See also McCoy, Rahman and Somer (2018) and McCoy and Somer (2019).

21 Kingzette and others 2021.

22 Dimant 2024.

23 Lelkes 2016; Mason 2015. Theories of affective polarization build on work identifying the importance of social identity for people's self-esteem. Social identity theory posits that individuals categorize themselves and others into various social groups based on shared characteristics and that they derive a sense of self-worth from their affiliations with these groups. See Tajfel and Turner (2001).

24 This includes online behaviour (van der Does and others 2022).

25 See Iyengar, Sood and Lelkes (2012) and McCoy, Rahman and Somer (2018).

26 Boese and others 2022; Card and others 2022; Iyengar, Sood and Lelkes 2012; McCoy and Somer 2019; Wagner 2021.

27 Levin, Milner and Perrings 2021.

28 See Van Bavel and others (forthcoming) on the costs of polarizing the Covid-19 pandemic.

29 Vasconcelos and others 2021.

30 This draws heavily from Bednar (2021). See also Kawakatsu and others (2021), who explore how polarization hinders Madison's institutional design to address what he called the mischiefs of faction: Madison assumed that people would have different views on different issues and that they would not sort themselves into opposing groups on many or almost all issues (and thus that a greater diversity of interests in a political system with institutions supporting a pluralistic society would cure the mischief of factions; that is hindered with polarization). For a review of the literature on democratic resilience, see Holloway and Manwaring (2023).

31 McCoy and Somer 2019.

32 Iyengar and others 2019.

33 McCoy and Somer 2019.

34 Bradley and Chauchard 2022. These rifts often lend themselves to political mobilization, where political actors and leaders employ narratives of group-based grievances and us versus them competition in political campaigns.

35 Hobolt, Leeper and Tilley 2021.

36 Hobolt, Leeper and Tilley 2021.

37 Henkel and others 2023.

38 McCoy, Rahman and Somer 2018.

39 Stewart, McCarty and Bryson 2020.

40 As long argued by Ronald Inglehart (see Inglehart 2020 and Norris and Inglehart 2011). For a recent formulation of this argument that frames values as luxury goods (relative demand for values relative to material things increases as income grows) and how that relates to political polarization, see, Enke, Polborn and Wu (2022).

41 Stewart, Plotkin and McCarty 2021.

42 McCoy and Somer 2019.

43 UNDP 2022a.

44 McCoy, Rahman and Somer 2018.

45 McCoy, Rahman and Somer 2018; McCoy and Somer 2019.

46 McCoy and Somer 2019.

47 De Dreu and Nijstad 2008.

48 UNDP 2022a.

49 McCoy, Rahman and Somer 2018.

50 See Osborne and others (2023) for the psychological causes of authoritarianism, compounded by worldviews associated with perceptions of threat. Worldviews that see the world as competitive also yield more violations of democratic norms and practices that do not necessarily take the form of authoritarianism.

51 Papada and others 2023.

52 MacKuen and others 2010.

53 For evidence and discussions on how polarization hinders the provision of global public goods, and international cooperation more broadly, see Baldassarri and Page (2021), Levin and Weber (forthcoming) and Perrings, Hechter and Mamada (2021).

54 De Vries, Hobolt and Walter 2021; Ecker-Ehrhardt 2014.

55 Schneider (2018). Heinrich, Kobayashi and Lawson (2021) find that the channels run through nativism and antielitism, often ways in which political polarization is expressed.

56 Bechtel, Genovese and Scheve 2019.

57 For instance, Hurd (2022) argues for recognizing that cooperation cannot be considered unequivocally beneficial; rather, it generates benefits to some groups over others, and the political responses to this must be understood.

58 De Vries, Hobolt and Walter 2021; Ecker-Ehrhardt 2014; Zürn, Binder and Ecker-Ehrhardt 2012.

59 De Vries, Hobolt and Walter 2021.

60 Bearce and Jolliff Scott 2019.

61 Deitelhoff 2020; Dellmuth and Tallberg 2015; Schneider 2018.

62 Kertzer and others 2014.

63 Powers and others 2022.

64 Ecker-Ehrhardt 2012.

65 De Vries, Hobolt and Walter 2021.

66 De Vries and Hoffmann 2019.

67 More in De Vries, Hobolt and Walter (2021).

68 Margalit 2012.

69 Norris and Inglehart 2019.

70 De Vries, Hobolt and Walter 2021; Walter 2021a.

71 Walter 2021a.

72 Walter 2021a.

73 In addition to international relations and history, considered in spotlights 6.2 and 6.3, political science has also provided insights into how to enhance international collective action. See, for example, Cashore and Bernstein (2023), Colgan and Hinthorn (2023), Guy, Shears and Meckling (2023), Keohane and Victor (2016), Meckling and Karplus (2023), Meckling and others (2022), Peng and others (2021) and Victor, Lumkowsky and Dannenberg (2022).

74 Building on the case made in Kaul and Conceição (2006a), particularly in Kaul and Conceição (2006b).

75 For instance, the international concessional financing of the incremental cost of an investment that contributes to a global public good, compared with the size of the investment that a country would undertake considering only the country benefit alone (see King 2006).

76 Davidai and Tepper 2023.

77 Chernyak-Hai and Davidai 2022.

78 Chinoy and others 2023; Davidai and Ongis 2019.

79 Evolutionary approaches to cooperation suggest that, with mutuality and interdependence, an agent recovers the investment in the welfare of others with whom the agent is interdependent because the fitness of those others also contributes to the fitness of the sacrificing agent (Stanford 2017).

80 See also Rockström and others (2024).

81 See also Balliet and Lindström (2023) and Colnaghi and others (2023).

82 Ostrom 2007, 2009a; Ostrom and others 1999.

83 McEvoy and Cherry 2016.

84 Carattini, Levin and Tavoni 2019; Rinscheid, Pianta and Weber 2021.

85 Goussebaïle and others 2023.

86 On the impact of the Covid-19 pandemic on inequalities in power, for example, see Dávalos and others (2020).

87 Enke 2023b.

88 Enke 2020a; Enke and others 2023. Although this does not mean that education and income are irrelevant. For instance, Dechezleprêtre and others (2022), in a survey of 20 countries covering the major greenhouse gas emitters in both high- and lower income countries, show that support for climate change is associated with beliefs about the effectiveness of emissions-reduction policies, their distributional impacts on lower income households and their impact on respondents' households. At the same time, respondents with higher

levels of education and income report stronger support for climate policies, perhaps as a result of the way in which education and income interact with other factors in shaping respondents' beliefs. Also, the extent to which beliefs, rather than economic variables, matter in the context of protecting the national environment is unclear. Kahn and Matsusaka (1997) argue that both income and price factors, as well as beliefs, matter in the national context, at least in the state of California, United States. Grandin and others (2022) also find that economic variables matter, but through the relative position in terms of socioeconomic status—with higher status tending to be more supportive of the national environment.

89 Cappelen, Enke and Tungodden 2022; Enke and others 2023.

90 As argued by Enke (2023b).

91 Becker (2023) find that people in Kenya vastly underestimate intercountry inequalities and that when provided with the accurate degree of inequality, their tolerance for inequality declines, but their demand for international aid does not increase, suggesting that they would rather have inequalities addressed through other means. This is consistent with evidence across a wide range of countries showing that poorer people are not more supportive of redistribution (Hoy and Mager 2021). There is evidence that views on inequality and support for redistribution within countries are linked to beliefs about the extent to which the processes that generated those inequalities are fair (Almås, Cappelen and Tungodden 2020; Almås and others 2022; Andersen and others 2023; Cohn and others 2023; Reyes and Gasparini 2022). For a recent review on preferences towards redistribution, see Mengel and Weidenholzer (2022).

92 This holds even for people who are vulnerable and in need of humanitarian aid, as is often the case for refugees. Bauer, Boemelburg and Walton (2021) report that reframing refugees' identity as being, by its very nature, a source of strength and skills rather than portraying them with a stigmatized identity as weak and unskilled victims enhanced refugees' perseverance and boosted their confidence to help them succeed in the new host country.

93 Thomas and others (2020) emphasize that enhancing agency implies looking at a broader set of interventions beyond income transfers (see also Bossuroy and others 2022) and that what enhances agency and confers dignity is likely to be context specific, which implies the need to attend to cultural differences (see also Thomas and Markus 2023). There is evidence from a large study in China that moving out of poverty does not seem to change preferences towards inequality but does reduce selfishness (Li and others 2023).

94 Bechtel and Scheve 2013; Beiser-McGrath and Bernauer 2022.

95 Beiser-McGrath and others (2021) find that support in Japan for domestic carbon taxes to mitigate climate change is higher when people are told that other countries are also imposing carbon taxes. Beiser-McGrath and Bernauer (2019b) find that proposals to recycle revenue from carbon taxes gain popular support in Germany and the United States only when other high-income countries adopt similar carbon taxes. Beiser-McGrath and Bernauer (2019a) also find that the more countries participating in a climate agreement, the more popular that agreement is in China and the United States but also that lack of commitment from other countries to fulfilling the agreement's obligations does not reduce support for climate action. The effect appears to be heterogeneous across countries because what other countries do is more likely to influence the behaviour of high-income countries that already have strong domestic concerns about climate change and have made ambitious commitments (Dannenberg and others 2023).

96 Koliev, Page and Tallberg 2022.

97 Doshi, Kelley and Simmons 2019; Kelley and Simmons 2015.

98 Tingley and Tomz 2022.

99 Dellmuth and others 2021.

100 See Balliet and Van Lange (2013).

101 Falk and others 2018.

102 Nunn, Qian and Wen 2023.

103 Yamagishi and Yamagishi 1994.

104 Rathbun 2011.

105 Because many surveys do not specify the meaning of trust, trust in institutions could be understood to mean the integrity, legitimacy or competence of the institution, which are not the same things—see the criticism of the notion of trust in institutions in Elster (2015b).

106 Fairbrother 2016; Fairbrother, Johansson Sevä and Kulin 2019.

107 For a review on this, see Kaasa and Andriani (2022).

108 Herreros (2023) identifies this as the first of four potential mechanisms. The others include projecting perceptions of trust in institutions to the whole population (that is, if the state is seen as corrupt, most of the population is perceived that way), believing in the effectiveness of the state (for instance, in redressing inequalities) and believing that the state fosters trust by providing information on who is trustworthy.

109 Connaughton and Moncus 2020.

110 Dellmuth and Tallberg 2020.

111 Dellmuth and Tallberg 2021.

112 Torcal and Thomson 2023.

113 This relationship likely goes both ways. In the social trust approach, generalized trust among people is thought to spill over into trust in institutions. Alternatively, well-functioning institutions can be expected to support generalized trust through different channels—for instance, by dissuading opportunistic behaviour or enhancing social cohesion and belonging (Herreros 2023).

114 Steg 2023.

115 Mildenberger and Tingley 2019. Particularly because there is little evidence that personal climate change behaviour driven by individual beliefs spills over to influence collective action (Lacroix and others 2022). So, expecting that highly motivated individuals acting on climate change and behaving accordingly would encourage others to do the same is not likely: second-order beliefs (what people think others think) appear to matter crucially for collective action (Bouman and Steg 2019).

116 Andre and others 2024.

117 Sparkman, Geiger and Weber 2022.

118 This is the title of Sparkman, Geiger and Weber (2022).

119 Lees and others (2023) show that the misperceptions in the United States extend to the relative importance of addressing climate change compared with other policy priorities. Pearson and others (2018) show that misperceptions are pervasive in the United States for environmental concerns. Mildenberger and Tingley (2019) add evidence from China on climate change misperceptions. Duffy (2018) provides evidence of misperceptions across a wide range of issues in several countries.

120 Also known as collective illusion, where people mistakenly believe others have an opinion different from their own and go along with a view that they do not hold because they think most other people in the group hold this belief.

121 This includes maladaptive social norms (Smerdon, Offerman and Gneezy 2020). There is much literature on how pluralistic ignorance influences behaviour (Prentice and Miller 1993) and is associated with political regimes that transition rapidly once misperceptions are resolved (Elster 2015b; Frank 2021). Mastroianni and Dana (2022) show how misperceptions about attitude change can drive policies that are inconsistent with people's actual beliefs and preferences.

122 Bouman and Steg 2019; Welsch 2022.

123 Ahler 2014; Ahler and Sood 2018; Bursztyn and Yang 2022; Graeber, Roth and Zimmermann 2023; Yudkin, Hawkins and Dixon 2019.

124 Acemoglu and Wolitzky 2023.

125 Ahler 2014, p. 607.

126 Druckman and others 2023; Flores and others 2022; Pereira 2021; Sheffer and others 2023; Soontjens 2023; Walgrave and others 2023.

127 There is strong evidence that beliefs on how to act on climate change are shaped by worldviews and affiliation with groups (Bumann 2021; Dietz and Whitley 2018; Hornsey and others 2016; Krange, Kaltenborn and Hultman 2021; Mayer and Smith 2023) and that motivated reasoning is the mechanism that leads people to hold their beliefs (Bago, Rand and Pennycook 2023), though this has been contested (Bayes and Druckman 2021; Bowen, Dmitriev and Galperti 2023; Druckman and McGrath 2019). Krishnarajan (2023) argues that motivated reasoning can explain perceptions of the acceptability of the violation of democratic norms and practices.

128 Belief polarization can emerge without motivated reasoning if, in a context of abundant information and some initial misperceptions, people selectively choose what information

they rely on and share with their groups (Bowen, Dmitriev and Galperti 2023).

129 Hornsey and Lewandowsky 2022.

130 Nyhan 2020. Gustafson and others (2019) show how, in only four months, the policy proposal for the Green New Deal became polarized in the United States and how partisan media played a role in driving that polarization.

131 Fehr, Mollerstrom and Perez-Truglia 2022; Hvidberg, Kreiner and Stantcheva 2023; Xu and others 2023.

132 See also Alesina, Miano and Stantcheva (2020).

133 Judge and others 2023; Steg 2023.

134 Rojek-Giffin and others 2023.

135 Levy 2022; Morehouse, Maddox and Banaji 2023.

136 Ahler 2014; Fernbach and Van Boven 2022.

137 Mastroianni and Dana 2022.

138 Ahler and Sood 2018.

139 Carlson and Hill 2022.

140 Jørgensen and Osmundsen 2022.

141 Andre and others 2021; Mildenberger and Tingley 2019.

142 Ahler and Sood 2018.

143 Nyhan 2021; Nyhan, Porter and Wood 2022.

144 Changing laws, for instance, may or may not be effective in changing misperceptions (Eisner, Turner-Zwinkels and Spini 2021; Hoff and Walsh 2019).

145 Wu and others 2022.

146 For reviews of the implications for the economics of information in a context of disinformation, see Stiglitz and Kosenko (2024a, 2024b).

147 Fernbach and Van Boven 2022.

148 Gur, Ayal and Halperin 2021.

149 Graeber, Roth and Zimmermann 2023.

150 Vlasceanu and others 2024.

151 Dulberg and others 2023; Sen 2005, 2009a.

152 Crisp, Hewstone and Rubin 2001.

153 Sen 2009b.

154 Weiss, Ran and Halperin 2023.

155 Luskin and others 2022.

156 Caluwaerts and others 2023; Fishkin and others 2021; Strandberg, Himmelroos and Grönlund 2019.

157 Caluwaerts and others 2023.

158 Caluwaerts and others 2023.

159 Or, worse, where hidden agendas and interests shape the deliberation environment to bias outcomes towards powerful groups (Oreskes and Conway 2011; Supran and Oreskes 2021).

160 Powell 2022.

161 Powell 2022.

162 Buchanan 2020.

163 UNDP 2022b.

164 Framings have been shown to affect engagement and behaviour intentions of people on shared challenges such as climate change, with motivational framings more effective than sacrifice framings (Gifford 2014; Gifford and Comeau 2011).

165 Chuang, Manley and Petersen 2020; Cukier, Mayer-Schönberger and de Véricourt 2022; Siegrist and Bearth 2021. Judge, Fernando and Begeny (2022) show that changes in behaviour extend to collective, not just individual, action. This is premised on the broader determinants of human behaviour beyond self-interest motivations discussed in chapter 4. See also Wildavsky (1987). Even language can have an effect on, for instance, future-oriented economic behaviour: choices made under language that does not sharply distinguish between the present and the future are more future-oriented than those made under language with a sharp distinction (Ayres, Katz and Regev 2023).

166 This is the thesis of Joel Mokyr (see Greif and Mokyr 2017 and Mokyr 2013, 2016). For recent empirical evidence that supports his hypothesis, see Almelhem and others (2023).

167 Cointe and Guillemot forthcoming.

168 Patterson and others 2021. In part because of heterogeneity across the population on predisposition to act (Wiest, Raymond and Clawson 2015).

169 Oreskes 2015.

170 Cann and Raymond 2018.

171 Campante, Depetris-Chauvin and Durante 2024; Halevy 2023; Jost and others 2017; Lerner and Keltner 2001; Satici and others 2020; van Prooijen and others 2015; Wildavsky, Dake and Darwin 2001.

172 With cultural threat perceptions even predicting violent extremism (Obaidi and others 2023). While finding a common enemy or threat across groups can enhance intergroup cooperation (West and others 2006), that is more difficult or unlikely when issues such as climate change polarize (Chinn, Hart and Soroka 2020; Egan and Mullin 2017). Moreover, individuals who support slower action on climate change are grouped with climate change denialists by those who support stronger action on climate change, further exacerbating polarization (Bretter and Schulz 2023), particularly given the importance of social identities and groups in determining individual beliefs on the need to act on climate change (Hornung 2022). Polarization can also lead to the breakdown of collective action to address long-term challenges, even when people care a lot about the future, if beliefs about whether collapse will happen and how severe it is are polarized (Barfuss and Mann 2022; Barfuss and others 2020).

173 Adger and others 2022; Biermann and others 2022; Croasdale and others 2023; Hickman 2024; Hickman and others 2021.

174 Toivonen 2022.

175 Bergquist and others 2022; Dechezleprêtre and others 2022. An action-oriented dialogue also opens the space for plural valuations to emerge (Pascual and others 2023; Zafra-Calvo and others 2020).

176 Hamilton and others 2018.

177 Sustainable science has clearly articulated that urgent action is needed but also that to move forward, it is crucial to have a broader understanding of human motivations, as explored in chapter 4 (Clark and Harley 2020). Such understanding is needed when it comes to the estimated cost of reducing greenhouse gas emissions (Kotchen, Rising and Wagner 2023), particularly given that addressing climate change involves a portfolio of economic and other policies (Blanchard, Gollier and Tirole 2023).

178 Doran and others 2023. However, evidence also suggests that updating of beliefs may not occur in highly polarized contexts, even when people confront actual climate hazards, such as heatwaves (Anderson and Robinson 2024).

179 Bretter and Schulz (2023) argue that rather than focusing on combating climate denialism, seeking common ways to address climate change accounting and respecting differences in views about how quickly action should take place could reduce polarization around climate change.

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Statistical annex

Statistical annex

Readers guide

The tables provide an overview of key aspects of human development. The seven tables contain the family of composite human development indices and their components estimated by the Human Development Report Office (HDRO). The sixth table, on multidimensional poverty, is produced in partnership with the Oxford Poverty and Human Development Initiative.

Tables 1–7 are part of the 2023/2024 Human Development Report. The full set of seven statistical tables is available for download at https://hdr.undp.org/en/human-development-report-2023-24. Unless otherwise noted, tables use data available to the HDRO as of 31 October 2023. All indices and indicators, along with technical notes on the calculation of composite indices and additional source information, are available at https://hdr.undp.org/data-center.

Countries and territories are ranked by 2022 Human Development Index (HDI) value. Robustness and reliability analysis has shown that for most countries differences in HDI are not statistically significant at the fourth decimal place. For this reason countries with the same HDI value at three decimal places are listed with tied ranks.

Sources and definitions

Unless otherwise noted, the HDRO uses data from international data agencies with the mandate, resources and expertise to collect national data on specific indicators.

Definitions of indicators and sources for original data components are given at the end of each table, with full source details in *Statistical references*.

Methodology updates

The 2023/2024 Report retains all the composite indices from the family of human development indices—the HDI, the Inequality-adjusted Human Development Index (IHDI), the Gender Development Index (GDI), the Gender Inequality Index (GII), the Multidimensional Poverty Index (MPI) and the Planetary pressures-adjusted Human Development Index (PHDI). The methodology used to compute the indices is the same as the one used in the 2021/2022 Human Development Report. For details, see *Technical notes 1–6* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf.

Comparisons over time and across editions

Because national and international agencies continually improve their data series, the data—including the HDI values and ranks—presented in this report are not comparable to those published in earlier editions. For HDI comparability across years and countries, see table 2, which presents trends using consistent data, or https://hdr.undp.org/data-center, which presents interpolated consistent data.

Discrepancies between national and international estimates

National and international data can differ because international agencies harmonize national data using a consistent methodology and occasionally produce estimates of missing data to allow comparability across countries. In other cases international agencies might not have access to the most recent national data. When HDRO becomes aware of discrepancies, it brings them to the attention of national and international data authorities.

Country groupings and aggregates

The tables present weighted aggregates for several country groupings. In general, an aggregate is shown only when data are available for at least half the countries and represent at least two-thirds of the population in that grouping. Aggregates for each grouping cover only the countries for which data are available.

Human development classification

HDI classifications are based on HDI fixed cutoff points, which are derived from the quartiles of distributions of the component indicators. The cutoff points are HDI of less than 0.550 for low human development, 0.550–0.699 for medium human development, 0.700–0.799 for high human development and 0.800 or greater for very high human development.

Regional groupings

Regional groupings are based on United Nations Development Programme regional classifications. Least Developed Countries and Small Island Developing States are defined according to UN classifications (see https://www.un.org/ohrlls/).

Developing countries

The aggregates for developing countries are based on information from all developing countries that are included in a regional grouping.

Organisation for Economic Co-operation and Development

Of the 38 Organisation for Economic Co-operation and Development members, 33 are considered developed countries and 5 (Costa Rica, Chile, Colombia, Mexico and Türkiye) are considered developing countries. Aggregates refer to all countries from the group for which data are available.

Country notes

Data for China do not include Hong Kong Special Administrative Region of China, Macao Special Administrative Region of China or Taiwan Province of China.

As of 2 May 2016, Czechia is the short name to be used for the Czech Republic.

As of 1 June 2018, the Kingdom of Eswatini is the name of the country formerly known as Swaziland.

As of 14 February 2019, the Republic of North Macedonia (short form: North Macedonia) is the name of the country formerly known as the former Yugoslav Republic of Macedonia.

As of 1 June 2022, Türkiye is the name of the country formerly known as Turkey.

Symbols

A dash between two years, as in 2010–2022, indicates that the data are from the most recent year available during the period specified. Growth rates are usually average annual rates of growth between the first and last years of the period shown.

The following symbols are used in the tables:

..	Not available
0 or 0.0	Nil or negligible
—	Not applicable

Statistical acknowledgements

The Report's composite indices and other statistical resources draw on a wide variety of the most respected international data providers in their specialized fields. HDRO is particularly grateful to Eurostat; the Global Carbon Project; ICF Macro; the International Labour Organization; the International Monetary

Fund; the Inter-Parliamentary Union; the Luxembourg Income Study; the Organisation for Economic Co-operation and Development; the Socio-Economic Database for Latin America and the Caribbean; the United Nations Children's Fund; the United Nations Department of Economic and Social Affairs; the United Nations Educational, Scientific and Cultural Organization Institute for Statistics; the United Nations Environment Programme; the United Nations Statistics Division; the World Bank; and the World Inequality Database. The international education database maintained by Robert Barro (Harvard University) and Jong-Wha Lee (Korea University) was another invaluable source for the calculation of the Report's indices.

Statistical tables

The seven tables relate to the six composite human development indices and their components. Since the 2010 Human Development Report, four composite human development indices—the HDI, the IHDI, the GII and the MPI for developing countries—have been calculated. The 2014 Report introduced the GDI, which compares the HDI calculated separately for women and men. The 2020 Report introduced the PHDI, which adjusts the HDI for the excessive human pressure on the planet.

For indicators that are global Sustainable Development Goals indicators or can be used in monitoring progress towards specific goals, the table headers include the relevant goals and targets.

Table 1, Human Development Index and its components, ranks countries by 2022 HDI value and details the values of the three HDI components: longevity, education (with two indicators) and income per capita. The table also presents the difference in rankings by HDI value and gross national income per capita, as well as the rank on the 2021 HDI, calculated using the most recently revised historical data available in 2023.

Table 2, Human Development Index trends, 1990–2022, provides a time series of HDI values allowing 2022 HDI values to be compared with those for previous years. The table uses the most recently revised historical data available in 2023 and the same methodology applied to compute 2022 HDI values. The table also includes the change in HDI rank over the last seven years and the average annual HDI growth rate across four time intervals: 1990–2000, 2000–2010, 2010–2022 and 1990–2022.

Table 3, Inequality-adjusted Human Development Index, contains two related measures of inequality—the IHDI and the overall loss in HDI due to inequality. The IHDI looks beyond the average achievements of a country in longevity, education and income to show how these achievements are distributed among its residents. The IHDI value can be interpreted as the level of human development when inequality is accounted for. The relative difference between IHDI and HDI values is the loss due to inequality in distribution of the HDI within the country. The table presents the coefficient of human inequality, which is the unweighted average of inequalities in the three dimensions. In addition, the table shows each country's difference in rank on the HDI and the IHDI. A negative value means that taking inequality into account lowers a country's rank on the HDI. The table also presents the income shares of the poorest 40 percent, the richest 10 percent and the richest 1 percent of the population, as well as the Gini coefficient.

Table 4, Gender Development Index, measures disparities on the HDI by gender. The table contains HDI values estimated separately for women and men, the ratio of which is the GDI value. The closer the ratio is to 1, the smaller the gap between women and men. Values for the three HDI components—longevity, education (with two indicators) and income per capita—are also presented by gender. The table includes five country groupings by absolute deviation from gender parity in HDI values.

Table 5, Gender Inequality Index, presents a composite measure of gender inequality using three dimensions: reproductive health, empowerment and the labour market. The reproductive health indicators are maternal mortality ratio and adolescent birth rate. The empowerment indicators are the percentage of parliamentary seats held by women and the percentage of population with at least some secondary education by gender. The labour market indicator is participation in the labour force by gender. A low GII value indicates low inequality between women and men, and vice-versa.

Table 6, Multidimensional Poverty Index, captures the multiple deprivations that people in developing countries face in their health, education and standard of living. The MPI shows both the incidence of nonincome multidimensional poverty (a headcount of those in multidimensional poverty) and its intensity (the average deprivation score experienced by multidimensionally poor people). Based on deprivation score thresholds, people are classified as multidimensionally poor, in severe multidimensional poverty or vulnerable to multidimensional poverty. The table includes the contribution of deprivation in each dimension to overall multidimensional poverty. It also presents measures of income poverty —population living below the national poverty line and population living on less than $2.15 in purchasing power parity terms per day.

Table 7, Planetary pressures-adjusted Human Development Index, adjusts the HDI for planetary pressures in the Anthropocene to reflect a concern for intergenerational inequality, similar to the Inequality-adjusted HDI adjustment, which is motivated by a concern for intragenerational inequality. The PHDI value can be interpreted as the level of human development adjusted by carbon dioxide emissions per person (production-based) and material footprint per capita to account for the excessive human pressure on the planet. The table presents the relative difference between PHDI and HDI values as well as each country's difference in rank on the HDI and the PHDI. A negative value means that taking planetary pressures into account lowers a country's rank on the HDI.

Human development composite indices

TABLE 1

Human Development Index and its components

HDI RANK		Human Development Index (HDI)	SDG 3 Life expectancy at birth	SDG 4.3 Expected years of schooling	SDG 4.4 Mean years of schooling	SDG 8.5 Gross national income (GNI) per capita	GNI per capita rank minus HDI rank	HDI rank
		Value	(years)	(years)	(years)	(2017 PPP $)		
		2022	2022	2022[a]	2022[a]	2022	2022[b]	2021
Very high human development								
1	Switzerland	0.967	84.3	16.6	13.9[c]	69,433	6	1
2	Norway	0.966	83.4	18.6[d]	13.1[c]	69,190	6	2
3	Iceland	0.959	82.8	19.1[d]	13.8	54,688	16	4
4	Hong Kong, China (SAR)	0.956	84.3	17.8	12.3	62,486	6	3
5	Denmark	0.952	81.9	18.8[d]	13.0	62,019	6	8
5	Sweden	0.952	83.5	19.0[d]	12.7[c]	56,996	10	5
7	Germany	0.950	81.0	17.3	14.3	55,340	11	7
7	Ireland	0.950	82.7	19.1[d]	11.7[c]	87,468[e]	-3	9
9	Singapore	0.949	84.1	16.9	11.9	88,761[e]	-6	10
10	Australia	0.946	83.6	21.1[d]	12.7	49,257	14	5
10	Netherlands	0.946	82.5	18.6[d]	12.6	57,278	4	11
12	Belgium	0.942	82.3	18.9[d]	12.5[c]	53,644	9	13
12	Finland	0.942	82.4	19.2[d]	12.9[c]	49,522	11	11
12	Liechtenstein	0.942	84.7	15.5	12.4[f]	146,673[e,g]	-11	14
15	United Kingdom	0.940	82.2	17.6	13.4	46,624	13	17
16	New Zealand	0.939	83.0	19.7[d]	12.9	43,665	16	14
17	United Arab Emirates	0.937	79.2	17.2	12.8	74,104	-11	17
18	Canada	0.935	82.8	16.0	13.9[c]	48,444	8	16
19	Korea (Republic of)	0.929	84.0	16.5	12.6[c]	46,026	10	20
20	Luxembourg	0.927	82.6	14.2	13.0[h]	78,554[e]	-15	19
20	United States	0.927	78.2	16.4	13.6	65,565	-11	21
22	Austria	0.926	82.4	16.4	12.3[c]	56,530	-5	22
22	Slovenia	0.926	82.1	17.4	12.9[c]	41,587	13	24
24	Japan	0.920	84.8	15.5	12.7	43,644	9	22
25	Israel	0.915	82.6	15.0	13.4[c]	43,588	9	26
25	Malta	0.915	83.7	15.9	12.2	44,464	5	25
27	Spain	0.911	83.9	17.8	10.6	40,043	10	28
28	France	0.910	83.2	16.0	11.7[c]	47,379	-1	27
29	Cyprus	0.907	81.9	16.2	12.4	40,137	7	29
30	Italy	0.906	84.1	16.7	10.7	44,284	1	30
31	Estonia	0.899	79.2	15.9	13.5	37,152	9	32
32	Czechia	0.895	78.1	16.3	12.9[c]	39,945	6	31
33	Greece	0.893	80.6	20.0[d]	11.4	31,382	20	33
34	Bahrain	0.888	79.2	16.3	11.0	48,731	-9	34
35	Andorra	0.884	83.6	12.8	11.6	54,233[i]	-15	43
36	Poland	0.881	77.0	15.9	13.2	35,151	7	35
37	Latvia	0.879	75.9	16.6	13.3[c]	32,083	13	39
37	Lithuania	0.879	74.3	16.4	13.5	38,131	2	36
39	Croatia	0.878	79.2	15.6	12.3[c]	34,324	5	37
40	Qatar	0.875	81.6	13.3	10.1[c]	95,944[e]	-38	41
40	Saudi Arabia	0.875	77.9	15.2[j]	11.3	50,620	-18	37
42	Portugal	0.874	82.2	16.8	9.6	35,315	0	39
43	San Marino	0.867	83.4	12.4	10.5[k]	57,687[l]	-30	44
44	Chile	0.860	79.5	16.8	11.1[c]	24,431	15	42
45	Slovakia	0.855	75.3	14.7	13.0[c]	32,171	4	45
45	Türkiye	0.855	78.5	19.7[d]	8.8[c]	32,834	2	48
47	Hungary	0.851	75.0	15.1	12.2	34,196	-2	46
48	Argentina	0.849	76.1	19.0[d]	11.1	22,048	17	47
49	Kuwait	0.847	80.3	15.7[c]	7.4[c]	56,729	-33	50
50	Montenegro	0.844	76.8	15.1	12.6[c]	22,513	12	49
51	Saint Kitts and Nevis	0.838	72.0	18.4[d,m]	10.8[n]	28,442	3	51
52	Uruguay	0.830	78.0	17.4	9.1[c]	22,207	12	56
53	Romania	0.827	74.1	14.5	11.4[c]	31,641	-1	52
54	Antigua and Barbuda	0.826	79.2	15.5[c]	10.5[j]	18,784	18	54
55	Brunei Darussalam	0.823	74.6	13.7	9.2	59,246	-43	53
56	Russian Federation	0.821	70.1	15.7[c]	12.4	26,992	1	55
57	Bahamas	0.820	74.4	11.9[k]	12.7[c]	32,535	-9	67
57	Panama	0.820	76.8	13.2[c]	10.7[c]	32,029	-6	57
59	Oman	0.819	73.9	13.0	11.9	32,967	-13	58
60	Georgia	0.814	71.6	16.7	12.7	15,952	19	59
60	Trinidad and Tobago	0.814	74.7	14.1[o]	11.7[c]	22,473	3	60
62	Barbados	0.809	77.7	16.5[c]	9.9[p]	14,810	24	63

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HDI RANK		Human Development Index (HDI)	SDG 3 Life expectancy at birth	SDG 4.3 Expected years of schooling	SDG 4.4 Mean years of schooling	SDG 8.5 Gross national income (GNI) per capita	GNI per capita rank minus HDI rank	HDI rank
		Value	(years)	(years)	(years)	(2017 PPP $)		
		2022	2022	2022[a]	2022[a]	2022	2022[b]	2021
63	Malaysia	0.807	76.3	12.9	10.7 [c]	27,295	-7	68
64	Costa Rica	0.806	77.3	16.1 [c]	8.8	20,248	2	60
65	Serbia	0.805	74.1	14.5	11.5 [c]	19,494	3	60
66	Thailand	0.803	79.7	15.6	8.8 [c]	16,887	10	69
67	Kazakhstan	0.802	69.5	14.8	12.4 [c]	22,587	-6	65
67	Seychelles	0.802	71.7	13.9	11.2	28,386	-12	71
69	Belarus	0.801	73.2	14.0	12.2 [c]	18,425	5	65
High human development								
70	Bulgaria	0.799	71.5	13.9	11.4	25,921	-12	70
71	Palau	0.797	65.4	17.2 [k]	13.0 [k]	19,344 [l]	-2	64
72	Mauritius	0.796	74.0	14.6	10.0 [p]	23,252	-12	72
73	Grenada	0.793	75.3	16.6 [c]	9.9 [j]	13,593	18	73
74	Albania	0.789	76.8	14.5	10.1 [p]	15,293	7	74
75	China	0.788	78.6	15.2 [c]	8.1 [c]	18,025	0	74
76	Armenia	0.786	73.4	14.4	11.3	15,388	4	79
77	Mexico	0.781	74.8	14.5	9.2	19,138	-7	83
78	Iran (Islamic Republic of)	0.780	74.6	14.1	10.7 [c]	14,770	10	77
78	Sri Lanka	0.780	76.6	13.6 [c]	11.2	11,899	24	76
80	Bosnia and Herzegovina	0.779	75.3	13.3	10.5	16,571	-3	77
81	Saint Vincent and the Grenadines	0.772	69.0	16.3 [c]	11.0 [k]	14,049	9	80
82	Dominican Republic	0.766	74.2	13.6	9.2 [c]	18,653	-9	84
83	Ecuador	0.765	77.9	14.9	9.0	10,693	25	90
83	North Macedonia	0.765	73.9	13.0	10.2	16,396	-5	82
85	Cuba	0.764	78.2	14.5	10.5 [c]	7,953 [q]	40	92
86	Moldova (Republic of)	0.763	68.6	14.9	11.8 [c]	12,964	8	81
87	Maldives	0.762	80.8	12.2 [c]	7.8 [c]	18,847	-16	88
87	Peru	0.762	73.4	14.8 [c]	10.0 [c]	11,916	14	86
89	Azerbaijan	0.760	73.5	12.7	10.6 [c]	15,018	-7	95
89	Brazil	0.760	73.4	15.6	8.3 [c]	14,616	0	84
91	Colombia	0.758	73.7	14.4	8.9	15,014	-8	89
92	Libya	0.746	72.2	14.0 [j]	7.8 [r]	19,752	-25	90
93	Algeria	0.745	77.1	15.5	7.0 [c]	10,978	13	93
94	Turkmenistan	0.744	69.4	13.2	11.1 [c]	12,860 [l]	1	93
95	Guyana	0.742	66.0	13.0 [o]	8.6 [p]	35,783	-54	105
96	Mongolia	0.741	72.7	14.5 [c]	9.4	10,351	15	99
97	Dominica	0.740	73.0	13.6 [c]	9.2 [j]	12,468	-1	97
98	Tonga	0.739	71.3	16.3	10.9 [p]	6,360 [l]	34	95
99	Jordan	0.736	74.2	12.6 [c]	10.4	9,295	15	98
100	Ukraine	0.734	68.6	13.3	11.1 [p]	11,416	3	86
101	Tunisia	0.732	74.3	14.6 [c]	8.0 [c]	10,297	11	101
102	Marshall Islands	0.731	65.1	16.4	12.8 [k]	6,855	28	101
102	Paraguay	0.731	70.5	13.9 [s]	8.9	13,161	-9	99
104	Fiji	0.729	68.3	13.8	10.4	11,234	0	110
105	Egypt	0.728	70.2	12.9	9.8 [c]	12,361	-8	103
106	Uzbekistan	0.727	71.7	12.0	11.9	8,056	16	105
107	Viet Nam	0.726	74.6	13.1 [t]	8.5 [c]	10,814	0	108
108	Saint Lucia	0.725	71.3	12.7	8.6 [c]	14,778	-21	109
109	Lebanon	0.723	74.4	12.1 [u]	8.6 [k]	12,313 [v]	-11	104
110	South Africa	0.717	61.5	14.3	11.6	13,186	-18	105
111	Palestine, State of	0.716	73.4	13.2	9.9	6,936	18	110
112	Indonesia	0.713	68.3	14.0 [c]	8.6	12,046	-12	113
113	Philippines	0.710	72.2	12.8	9.0 [c]	9,059	5	118
114	Botswana	0.708	65.9	11.4	10.4	14,842	-29	124
115	Jamaica	0.706	70.6	12.5 [c]	9.2 [c]	9,695	-2	114
116	Samoa	0.702	72.6	12.4	11.4 [c]	4,970	25	112
117	Kyrgyzstan	0.701	70.5	13.0	12.0 [c]	4,782	28	116
118	Belize	0.700	71.0	12.4	8.8	9,242	-3	115
Medium human development								
119	Venezuela (Bolivarian Republic of)	0.699	71.1	13.5 [k]	9.6 [k]	6,184 [w]	14	120
120	Bolivia (Plurinational State of)	0.698	64.9	15.0	9.8	7,988	3	119
120	Morocco	0.698	75.0	14.6	6.1	7,955	4	122
122	Nauru	0.696	64.0	12.6 [c]	9.2 [j]	14,939	-38	117
123	Gabon	0.693	65.7	12.4 [c]	9.6	11,194	-18	123

Continued →

TABLE 1

HDI RANK		Human Development Index (HDI)	SDG 3 Life expectancy at birth	SDG 4.3 Expected years of schooling	SDG 4.4 Mean years of schooling	SDG 8.5 Gross national income (GNI) per capita	GNI per capita rank minus HDI rank	HDI rank
		Value	(years)	(years)	(years)	(2017 PPP $)		
		2022	2022	2022[a]	2022[a]	2022	2022[b]	2021
124	Suriname	0.690	70.3	11.0	8.4 [c]	12,310	-25	121
125	Bhutan	0.681	72.2	13.1 [c]	5.8 [c]	10,625 [v]	-15	125
126	Tajikistan	0.679	71.3	10.9 [c]	11.3 [p]	4,807	18	125
127	El Salvador	0.674	71.5	11.9 [s]	7.2	8,886	-7	127
128	Iraq	0.673	71.3	12.2 [t]	6.8 [p]	9,092	-11	128
129	Bangladesh	0.670	73.7	11.9	7.4	6,511	2	130
130	Nicaragua	0.669	74.6	12.6 [s]	7.3	5,427	4	129
131	Cabo Verde	0.661	74.7	11.5 [c]	6.1 [k]	7,601	-4	132
132	Tuvalu	0.653	64.9	12.1 [c]	10.6 [c]	4,754	15	131
133	Equatorial Guinea	0.650	61.2	12.1 [j]	8.3 [j]	10,663	-24	133
134	India	0.644	67.7	12.6	6.6	6,951	-6	135
135	Micronesia (Federated States of)	0.634	70.9	12.6 [j]	7.3 [j]	3,709	18	134
136	Guatemala	0.629	68.7	10.8 [c]	5.7 [c]	8,996	-17	136
137	Kiribati	0.628	67.7	11.8	9.1 [k]	3,440	21	137
138	Honduras	0.624	70.7	10.0 [s]	7.3 [c]	5,272	2	138
139	Lao People's Democratic Republic	0.620	69.0	10.2	5.9 [p]	7,745	-13	140
140	Vanuatu	0.614	70.5	11.8 [c]	7.2 [j]	3,244	21	141
141	Sao Tome and Principe	0.613	68.8	12.7 [o]	5.9 [c]	4,054	8	143
142	Eswatini (Kingdom of)	0.610	56.4	14.9 [c]	5.7	8,392	-21	142
142	Namibia	0.610	58.1	11.8 [x]	7.2 [p]	9,200	-26	139
144	Myanmar	0.608	67.3	12.1 [c]	6.5 [p]	4,038	6	145
145	Ghana	0.602	63.9	11.6	6.4 [p]	5,380	-10	144
146	Kenya	0.601	62.1	11.4 [x]	7.7	4,808	-3	147
146	Nepal	0.601	70.5	12.6	4.5 [c]	4,026	5	149
148	Cambodia	0.600	69.9	11.6 [k]	5.2	4,291	0	147
149	Congo	0.593	63.1	12.4 [c]	8.3 [p]	2,903	14	146
150	Angola	0.591	61.9	12.2	5.8 [x]	5,328	-11	150
151	Cameroon	0.587	61.0	13.4 [c]	6.5 [p]	3,681	3	152
152	Comoros	0.586	63.7	13.0 [c]	6.2 [y]	3,261	8	151
153	Zambia	0.569	61.8	11.0 [y]	7.3 [p]	3,157	9	154
154	Papua New Guinea	0.568	66.0	11.1 [x]	4.9 [p]	3,710	-2	155
155	Timor-Leste	0.566	69.1	13.2 [x]	6.0 [x]	1,629	24	153
156	Solomon Islands	0.562	70.7	10.3 [c]	5.9 [j]	2,273	14	155
157	Syrian Arab Republic	0.557	72.3	7.4 [k]	5.7 [k]	3,594 [z]	-2	157
158	Haiti	0.552	63.7	11.1 [j]	5.6 [p]	2,802	6	158
159	Uganda	0.550	63.6	11.5 [x]	6.2 [c]	2,241	12	160
159	Zimbabwe	0.550	59.4	11.0 [c]	8.8 [c]	2,079	15	159
Low human development								
161	Nigeria	0.548	53.6	10.5	7.6	4,755	-15	162
161	Rwanda	0.548	67.1	11.4	4.9	2,317	8	163
163	Togo	0.547	61.6	13.0 [c]	5.6 [c]	2,214	9	160
164	Mauritania	0.540	64.7	8.1	4.8 [p]	5,344	-26	164
164	Pakistan	0.540	66.4	7.9 [c]	4.4 [c]	5,374	-27	165
166	Côte d'Ivoire	0.534	58.9	10.1	4.2 [p]	5,376	-30	166
167	Tanzania (United Republic of)	0.532	66.8	8.6	5.6 [c]	2,578	-1	167
168	Lesotho	0.521	53.0	11.1 [c]	7.5 [c]	2,709	-3	168
169	Senegal	0.517	67.9	9.1	2.9 [c]	3,464	-12	170
170	Sudan	0.516	65.6	8.5 [c]	3.9	3,515	-14	169
171	Djibouti	0.515	62.9	8.0 [c]	3.9 [k]	4,875	-29	170
172	Malawi	0.508	62.9	11.5 [c]	5.2	1,432	10	172
173	Benin	0.504	60.0	10.3	3.1 [p]	3,406	-14	173
174	Gambia	0.495	62.9	9.0 [x]	4.5	2,090	-1	174
175	Eritrea	0.493	66.6	7.3 [c]	5.1 [j]	1,957 [z]	2	174
176	Ethiopia	0.492	65.6	9.9 [c]	2.4 [c]	2,369	-8	176
177	Liberia	0.487	61.1	10.5	5.3 [p]	1,330	8	177
177	Madagascar	0.487	65.2	9.2 [c]	4.6	1,464	4	177
179	Guinea-Bissau	0.483	59.9	10.5 [o]	3.7	1,880	-1	179
180	Congo (Democratic Republic of the)	0.481	59.7	9.6 [c]	7.2 [p]	1,080	9	180
181	Guinea	0.471	59.0	10.2 [c]	2.4 [c]	2,404	-14	182
182	Afghanistan	0.462	62.9	10.7 [c]	2.5	1,335 [z]	2	181
183	Mozambique	0.461	59.6	10.7 [c]	3.9	1,219	4	183
184	Sierra Leone	0.458	60.4	9.0 [o]	3.5 [c]	1,613	-4	184
185	Burkina Faso	0.438	59.8	8.1	2.3 [c]	2,037	-9	185

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HDI RANK		Human Development Index (HDI) Value	SDG 3 Life expectancy at birth (years)	SDG 4.3 Expected years of schooling (years)	SDG 4.4 Mean years of schooling (years)	SDG 8.5 Gross national income (GNI) per capita (2017 PPP $)	GNI per capita rank minus HDI rank	HDI rank
		2022	2022	2022[a]	2022[a]	2022	2022[b]	2021
186	**Yemen**	0.424	63.7	7.9[k]	2.8[r]	1,106[l]	2	186
187	**Burundi**	0.420	62.0	10.0[c]	3.3[c]	712	5	187
188	**Mali**	0.410	59.4	7.0[c]	1.6	2,044	-13	188
189	**Chad**	0.394	53.0	8.2[c]	2.3[c]	1,389	-6	189
189	**Niger**	0.394	62.1	7.2[c]	1.3[p]	1,283	-3	190
191	**Central African Republic**	0.387	54.5	7.3[c]	4.0[p]	869	0	191
192	**South Sudan**	0.381	55.6	5.6[c]	5.7[aa]	691[l]	1	192
193	**Somalia**	0.380	56.1	7.6[j]	1.9	1,072	-3	..
Other countries or territories								
	Korea (Democratic People's Rep. of)	..	73.6	..	..	..	..	..
	Monaco	..	86.9[ab]	18.7[c,d]	..	..	..	..
Human development groups								
	Very high human development	0.902	79.3	16.6	12.3	44,958	–	–
	High human development	0.764	75.2	14.5	8.6	15,484	–	–
	Medium human development	0.640	68.0	12.3	6.7	6,444	–	–
	Low human development	0.517	61.6	9.3	4.7	3,186	–	–
Developing countries		0.694	70.5	12.5	7.6	11,125	–	–
Regions								
	Arab States	0.704	71.3	11.9	7.8	14,391	–	–
	East Asia and the Pacific	0.766	76.2	14.5	8.2	16,138	–	–
	Europe and Central Asia	0.802	73.6	15.5	10.6	19,763	–	–
	Latin America and the Caribbean	0.763	73.7	14.8	9.0	15,109	–	–
	South Asia	0.641	68.4	11.9	6.6	6,972	–	–
	Sub-Saharan Africa	0.549	60.6	10.3	6.0	3,666	–	–
Least developed countries		0.542	64.9	10.1	5.0	3,006	–	–
Small island developing states		0.730	71.6	12.6	8.6	16,379	–	–
Organisation for Economic Co-operation and Development		0.906	80.1	16.6	12.2	46,318	–	–
World		**0.739**	**72.0**	**13.0**	**8.7**	**17,254**	**–**	**–**

Notes

a	Data refer to 2022 or the most recent year available.
b	Based on countries for which a Human Development Index value is calculated.
c	Updated by HDRO based on data from UNESCO Institute for Statistics (2023).
d	In calculating the HDI value, expected years of schooling is capped at 18 years.
e	In calculating the HDI value, GNI per capita is capped at $75,000.
f	Updated by HDRO using the mean years of schooling trend of Austria and data from UNESCO Institute for Statistics (2023).
g	Estimated using the purchasing power parity (PPP) rate and projected growth rate of Switzerland.
h	Updated by HDRO based on data from OECD (2023) and UNESCO Institute for Statistics (2023).
i	Estimated using the PPP rate of Spain.
j	Based on HDRO estimates using cross-country regression.
k	Updated by HDRO based on data from UNESCO Institute for Statistics (2023) and estimates using cross-country regression.
l	HDRO estimate based on data from IMF (2023), United Nations Statistics Division (2023) and World Bank (2023).
m	Refers to 2015 based on UNESCO Institute for Statistics (2023).
n	Refers to 2015 based on HDRO estimates using cross-country regression.
o	Updated by HDRO based on data from UNESCO Institute for Statistics (2023) and United Nations Children's Fund (UNICEF) Multiple Indicator Cluster Surveys for various years.
p	Updated by HDRO based on data from Barro and Lee (2018) and UNESCO Institute for Statistics (2023).
q	HDRO estimate based on cross-country regression and the projected growth rate from UNDESA (2023) and United Nations Statistics Division (2023).
r	Updated by HDRO based on data from Barro and Lee (2018) and estimates using cross-country regression.
s	Updated by HDRO based on data from CEDLAS and World Bank (2023) and UNESCO Institute for Statistics (2023).
t	Updated by HDRO based on data from UNICEF Multiple Indicator Cluster Surveys for various years.
u	Updated by HDRO based on data from UNICEF Multiple Indicator Cluster Surveys for various years and estimates using cross-country regression.
v	HDRO estimate based on data from IMF (2023) and World Bank (2023).
w	IMF 2023.
x	Updated by HDRO based on data from ICF Macro Demographic and Health Surveys for various years and UNESCO Institute for Statistics (2023).
y	Updated by HDRO based on data from ICF Macro Demographic and Health Surveys for various years.
z	HDRO estimate based on data from UNDESA (2023), United Nations Statistics Division (2023) and World Bank (2023).
aa	Refers to 2008 based on UNESCO Institute for Statistics (2023).
ab	In calculating the HDI value, life expectancy is capped at 85 years.

Definitions

Human Development Index (HDI): A composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge and a decent standard of living. See *Technical note 1* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf for details on how the HDI is calculated.

Life expectancy at birth: Number of years a newborn infant could expect to live if prevailing patterns of age-specific mortality rates at the time of birth stay the same throughout the infant's life.

Expected years of schooling: Number of years of schooling that a child of school entrance age can expect to receive if prevailing patterns of age-specific enrolment rates persist throughout the child's life.

Mean years of schooling: Average number of years of education received by people ages 25 and older, converted from education attainment levels using official durations of each level.

Gross national income (GNI) per capita: Aggregate income of an economy generated by its production and its ownership of factors of production, less the incomes paid for the use of factors of production owned by the rest of the world, converted to international dollars using PPP rates, divided by midyear population.

GNI per capita rank minus HDI rank: Difference in ranking by GNI per capita and by HDI value. A negative value means that the country is better ranked by GNI than by HDI value.

HDI rank for 2021: Ranking by HDI value for 2021, calculated using the same most recently revised data available in 2023 that were used to calculate HDI values for 2021.

Main data sources

Columns 1 and 7: HDRO calculations based on data from Barro and Lee (2018), IMF (2023), UNDESA (2022, 2023), UNESCO Institute for Statistics (2023), United Nations Statistics Division (2023) and World Bank (2023).

Column 2: UNDESA 2022.

Column 3: CEDLAS and World Bank 2023, ICF Macro Demographic and Health Surveys, UNESCO Institute for Statistics 2023 and UNICEF Multiple Indicator Cluster Surveys.

Column 4: Barro and Lee 2018, ICF Macro Demographic and Health Surveys, OECD 2023, UNESCO Institute for Statistics 2023 and UNICEF Multiple Indicator Cluster Surveys.

Column 5: IMF 2023, UNDESA 2023, United Nations Statistics Division 2023 and World Bank 2023.

Column 6: Calculated based on data in columns 1 and 5.

TABLE 2

Human Development Index trends, 1990–2022

HDI RANK		Human Development Index (HDI)								Change in HDI rank	Average annual HDI growth			
		Value									(%)			
		1990	2000	2010	2015	2019	2020	2021	2022	2015–2022[a]	1990–2000	2000–2010	2010–2022	1990–2022
Very high human development														
1	Switzerland	0.850	0.885	0.940	0.952	0.960	0.957	0.965	0.967	0	0.40	0.60	0.24	0.40
2	Norway	0.845	0.914	0.938	0.952	0.961	0.963	0.964	0.966	-1	0.79	0.26	0.25	0.42
3	Iceland	0.834	0.895	0.927	0.948	0.958	0.955	0.957	0.959	0	0.71	0.35	0.28	0.44
4	Hong Kong, China (SAR)	0.739	0.831	0.914	0.936	0.953	0.955	0.959	0.956	2	1.18	0.96	0.38	0.81
5	Denmark	0.839	0.890	0.913	0.936	0.946	0.946	0.947	0.952	1	0.59	0.26	0.35	0.40
5	Sweden	0.808	0.903	0.910	0.937	0.947	0.944	0.949	0.952	0	1.12	0.08	0.38	0.51
7	Germany	0.828	0.890	0.929	0.941	0.951	0.948	0.948	0.950	-3	0.72	0.43	0.19	0.43
7	Ireland	0.743	0.851	0.908	0.924	0.942	0.945	0.946	0.950	8	1.37	0.65	0.38	0.77
9	Singapore	0.780	0.863	0.921	0.935	0.945	0.942	0.942	0.949	-1	1.02	0.65	0.25	0.61
10	Australia	0.864	0.896	0.924	0.933	0.941	0.948	0.949	0.946	-1	0.36	0.31	0.20	0.28
10	Netherlands	0.847	0.892	0.917	0.932	0.941	0.938	0.941	0.946	1	0.52	0.28	0.26	0.35
12	Belgium	0.814	0.884	0.913	0.924	0.936	0.930	0.938	0.942	3	0.83	0.32	0.26	0.46
12	Finland	0.811	0.887	0.912	0.930	0.939	0.939	0.941	0.942	0	0.90	0.28	0.27	0.47
12	Liechtenstein	..	0.871	0.916	0.926	0.940	0.933	0.936	0.942	2	..	0.51	0.23	..
15	United Kingdom	0.804	0.863	0.913	0.923	0.933	0.920	0.931	0.940	3	0.71	0.56	0.24	0.49
16	New Zealand	0.812	0.894	0.924	0.933	0.937	0.935	0.936	0.939	-7	0.97	0.33	0.13	0.46
17	United Arab Emirates	0.717	0.790	0.828	0.860	0.933	0.930	0.931	0.937	19	0.97	0.47	1.04	0.84
18	Canada	0.861	0.890	0.911	0.927	0.932	0.928	0.934	0.935	-5	0.33	0.23	0.22	0.26
19	Korea (Republic of)	0.731	0.824	0.890	0.908	0.922	0.922	0.926	0.929	3	1.20	0.77	0.36	0.75
20	Luxembourg	0.793	0.864	0.912	0.914	0.925	0.921	0.927	0.927	-1	0.86	0.54	0.14	0.49
20	United States	0.875	0.894	0.916	0.924	0.933	0.923	0.921	0.927	-5	0.22	0.24	0.10	0.18
22	Austria	0.823	0.870	0.903	0.910	0.920	0.916	0.920	0.926	-1	0.56	0.37	0.21	0.37
22	Slovenia	..	0.823	0.890	0.903	0.918	0.910	0.916	0.926	1	..	0.79	0.33	..
24	Japan	0.846	0.883	0.903	0.913	0.918	0.917	0.920	0.920	-4	0.43	0.22	0.16	0.26
25	Israel	0.781	0.835	0.887	0.899	0.909	0.906	0.911	0.915	-1	0.67	0.61	0.26	0.50
25	Malta	0.726	0.779	0.862	0.887	0.905	0.901	0.912	0.915	3	0.71	1.02	0.50	0.73
27	Spain	0.762	0.828	0.868	0.889	0.904	0.894	0.904	0.911	0	0.83	0.47	0.40	0.56
28	France	0.790	0.844	0.880	0.893	0.905	0.900	0.906	0.910	-3	0.66	0.42	0.28	0.44
29	Cyprus	0.733	0.797	0.859	0.874	0.901	0.900	0.901	0.907	3	0.84	0.75	0.45	0.67
30	Italy	0.780	0.842	0.880	0.881	0.899	0.892	0.899	0.906	0	0.77	0.44	0.24	0.47
31	Estonia	0.741	0.798	0.864	0.883	0.893	0.891	0.890	0.899	-2	0.74	0.80	0.33	0.61
32	Czechia	0.748	0.810	0.872	0.891	0.896	0.891	0.891	0.895	-6	0.80	0.74	0.22	0.56
33	Greece	0.762	0.818	0.874	0.881	0.890	0.887	0.887	0.893	-3	0.71	0.66	0.18	0.50
34	Bahrain	0.733	0.775	0.807	0.859	0.888	0.884	0.884	0.888	3	0.56	0.41	0.80	0.60
35	Andorra	..	0.815	0.863	0.856	0.865	0.843	0.855	0.884	3	..	0.57	0.20	..
36	Poland	0.715	0.794	0.845	0.869	0.880	0.874	0.876	0.881	-2	1.05	0.62	0.35	0.65
37	Latvia	0.732	0.761	0.827	0.853	0.873	0.873	0.865	0.879	2	0.39	0.84	0.51	0.57
37	Lithuania	0.740	0.769	0.846	0.865	0.886	0.880	0.875	0.879	-2	0.39	0.96	0.32	0.54
39	Croatia	..	0.764	0.824	0.844	0.866	0.860	0.867	0.878	6	..	0.76	0.53	..
40	Qatar	0.764	0.793	0.829	0.852	0.869	0.863	0.864	0.875	0	0.37	0.44	0.45	0.42
40	Saudi Arabia	0.699	0.746	0.805	0.842	0.862	0.861	0.867	0.875	6	0.65	0.76	0.70	0.70
42	Portugal	0.703	0.793	0.831	0.850	0.864	0.861	0.865	0.874	0	1.21	0.47	0.42	0.68
43	San Marino	0.841	0.875	0.901	0.872	0.861	0.844	0.853	0.867	-10	0.40	0.29	-0.32	0.10
44	Chile	0.705	0.763	0.813	0.846	0.859	0.849	0.856	0.860	0	0.79	0.64	0.47	0.62
45	Slovakia	..	0.761	0.841	0.852	0.863	0.860	0.852	0.855	-5	..	1.00	0.14	..
45	Türkiye	0.598	0.669	0.750	0.821	0.842	0.835	0.841	0.855	9	1.13	1.15	1.10	1.12
47	Hungary	0.721	0.773	0.829	0.839	0.854	0.849	0.846	0.851	0	0.70	0.70	0.22	0.52
48	Argentina	0.724	0.780	0.834	0.850	0.853	0.841	0.844	0.849	-6	0.75	0.67	0.15	0.50
49	Kuwait	0.698	0.780	0.811	0.829	0.838	0.826	0.836	0.847	0	1.12	0.39	0.36	0.61
50	Montenegro	..	..	0.806	0.827	0.841	0.832	0.840	0.844	1	..	..	0.38	..
51	Saint Kitts and Nevis	..	..	0.790	0.829	0.838	0.832	0.832	0.838	-2	..	..	0.49	..
52	Uruguay	0.702	0.754	0.785	0.807	0.818	0.820	0.814	0.830	8	0.72	0.40	0.47	0.52
53	Romania	0.709	0.721	0.813	0.813	0.834	0.828	0.825	0.827	3	0.17	1.21	0.14	0.48
54	Antigua and Barbuda	..	..	0.808	0.818	0.831	0.820	0.819	0.826	1	..	..	0.18	..
55	Brunei Darussalam	0.779	0.789	0.825	0.832	0.827	0.827	0.824	0.823	-7	0.13	0.45	-0.02	0.17
56	Russian Federation	0.741	0.733	0.797	0.823	0.839	0.826	0.818	0.821	-3	-0.11	0.84	0.25	0.32
57	Bahamas	0.760	0.788	0.800	0.807	0.802	0.798	0.799	0.820	3	0.36	0.15	0.21	0.24
57	Panama	0.672	0.722	0.775	0.802	0.820	0.809	0.813	0.820	5	0.72	0.71	0.47	0.62
59	Oman	..	0.702	0.798	0.824	0.841	0.823	0.810	0.819	-7	..	1.29	0.22	..
60	Georgia	..	0.694	0.763	0.798	0.816	0.807	0.809	0.814	4	..	0.95	0.54	..
60	Trinidad and Tobago	0.656	0.708	0.785	0.812	0.813	0.815	0.804	0.814	-3	0.77	1.04	0.30	0.68
62	Barbados	0.728	0.760	0.792	0.798	0.806	0.803	0.803	0.809	2	0.43	0.41	0.18	0.33

Continued →

HDI RANK		Human Development Index (HDI) Value								Change in HDI rank	Average annual HDI growth (%)			
		1990	2000	2010	2015	2019	2020	2021	2022	2015-2022[a]	1990-2000	2000-2010	2010-2022	1990-2022
63	Malaysia	0.649	0.726	0.768	0.792	0.805	0.802	0.798	0.807	6	1.13	0.56	0.41	0.68
64	Costa Rica	0.659	0.709	0.769	0.792	0.811	0.811	0.804	0.806	5	0.73	0.82	0.39	0.63
65	Serbia	..	0.689	0.768	0.794	0.812	0.806	0.804	0.805	3	..	1.09	0.39	..
66	Thailand	0.581	0.663	0.743	0.789	0.801	0.800	0.797	0.803	6	1.33	1.15	0.65	1.02
67	Kazakhstan	0.672	0.680	0.766	0.799	0.810	0.806	0.801	0.802	-4	0.12	1.20	0.38	0.55
67	Seychelles	..	0.755	0.774	0.797	0.808	0.799	0.795	0.802	-1	..	0.25	0.30	..
69	Belarus	..	0.708	0.790	0.809	0.810	0.800	0.801	0.801	-11	..	1.10	0.12	..
High human development														
70	Bulgaria	0.698	0.723	0.790	0.809	0.813	0.802	0.796	0.799	-12	0.35	0.89	0.09	0.42
71	Palau	..	0.747	0.775	0.782	0.792	0.794	0.802	0.797	3	..	0.37	0.23	..
72	Mauritius	0.620	0.682	0.755	0.791	0.806	0.792	0.790	0.796	-1	0.96	1.02	0.44	0.78
73	Grenada	..	..	0.779	0.786	0.790	0.786	0.788	0.793	0	..	..	0.15	..
74	Albania	0.649	0.678	0.766	0.797	0.800	0.784	0.785	0.789	-8	0.44	1.23	0.25	0.61
75	China	0.482	0.586	0.698	0.741	0.775	0.781	0.785	0.788	18	1.97	1.76	1.02	1.55
76	Armenia	0.658	0.656	0.739	0.769	0.789	0.769	0.774	0.786	2	-0.03	1.20	0.52	0.56
77	Mexico	0.666	0.709	0.747	0.769	0.781	0.757	0.757	0.781	1	0.63	0.52	0.37	0.50
78	Iran (Islamic Republic of)	0.613	0.692	0.756	0.782	0.785	0.779	0.776	0.780	-4	1.22	0.89	0.26	0.76
78	Sri Lanka	0.641	0.689	0.735	0.760	0.775	0.777	0.783	0.780	6	0.72	0.65	0.50	0.62
80	Bosnia and Herzegovina	..	0.656	0.718	0.757	0.780	0.776	0.776	0.779	7	..	0.91	0.68	..
81	Saint Vincent and the Grenadines	..	0.691	0.756	0.777	0.789	0.785	0.773	0.772	-5	..	0.90	0.17	..
82	Dominican Republic	0.579	0.646	0.707	0.739	0.765	0.760	0.756	0.766	12	1.10	0.91	0.67	0.88
83	Ecuador	0.645	0.684	0.736	0.764	0.758	0.734	0.746	0.765	-1	0.59	0.74	0.32	0.53
83	North Macedonia	..	0.676	0.746	0.777	0.787	0.766	0.764	0.765	-7	..	0.99	0.21	..
85	Cuba	0.684	0.694	0.779	0.765	0.766	0.759	0.742	0.764	-4	0.15	1.16	-0.16	0.35
86	Moldova (Republic of)	0.688	0.655	0.716	0.749	0.773	0.765	0.767	0.763	5	-0.49	0.89	0.53	0.32
87	Maldives	..	0.635	0.692	0.728	0.753	0.737	0.753	0.762	13	..	0.86	0.81	..
87	Peru	0.620	0.675	0.725	0.758	0.774	0.758	0.755	0.762	-2	0.85	0.72	0.42	0.65
89	Azerbaijan	..	0.635	0.733	0.751	0.762	0.722	0.738	0.760	1	..	1.45	0.30	..
89	Brazil	0.620	0.668	0.722	0.752	0.764	0.758	0.756	0.760	0	0.75	0.78	0.43	0.64
91	Colombia	0.614	0.672	0.732	0.758	0.768	0.756	0.752	0.758	-6	0.91	0.86	0.29	0.66
92	Libya	0.724	0.746	0.774	0.749	0.756	0.737	0.746	0.746	-1	0.30	0.37	-0.31	0.09
93	Algeria	0.593	0.652	0.721	0.736	0.742	0.730	0.740	0.745	5	0.95	1.01	0.27	0.72
94	Turkmenistan	..	..	0.699	0.725	0.732	0.731	0.740	0.744	7	..	..	0.52	..
95	Guyana	0.496	0.570	0.650	0.686	0.711	0.727	0.721	0.742	27	1.40	1.32	1.11	1.27
96	Mongolia	0.579	0.595	0.700	0.739	0.749	0.740	0.730	0.741	-2	0.27	1.64	0.48	0.77
97	Dominica	..	0.721	0.735	0.719	0.745	0.738	0.737	0.740	8	..	0.19	0.06	..
98	Tonga	0.640	0.679	0.709	0.723	0.740	0.742	0.738	0.739	5	0.59	0.43	0.35	0.45
99	Jordan	0.622	0.681	0.727	0.738	0.744	0.740	0.736	0.736	-3	0.91	0.66	0.10	0.53
100	Ukraine	0.731	0.698	0.766	0.764	0.774	0.762	0.755	0.734	-18	-0.46	0.93	-0.35	0.01
101	Tunisia	0.566	0.651	0.713	0.724	0.740	0.734	0.729	0.732	1	1.41	0.91	0.22	0.81
102	Marshall Islands	..	..	..	0.688	0.722	0.727	0.729	0.731	17	..	..	..	..
102	Paraguay	0.604	0.656	0.700	0.738	0.746	0.742	0.730	0.731	-6	0.83	0.65	0.36	0.60
104	Fiji	0.630	0.669	0.699	0.716	0.730	0.722	0.715	0.729	2	0.60	0.44	0.35	0.46
105	Egypt	0.567	0.629	0.667	0.695	0.724	0.729	0.726	0.728	11	1.04	0.59	0.73	0.78
106	Uzbekistan	..	0.603	0.675	0.701	0.725	0.716	0.721	0.727	6	..	1.13	0.62	..
107	Viet Nam	0.492	0.599	0.676	0.697	0.717	0.726	0.718	0.726	7	1.99	1.22	0.60	1.22
108	Saint Lucia	0.666	0.692	0.731	0.736	0.733	0.724	0.717	0.725	-10	0.38	0.55	-0.07	0.27
109	Lebanon	..	..	0.749	0.756	0.760	0.742	0.725	0.723	-21	..	..	-0.29	..
110	South Africa	0.635	0.633	0.675	0.721	0.741	0.722	0.721	0.717	-6	-0.03	0.64	0.50	0.38
111	Palestine, State of	..	..	0.688	0.710	0.739	0.715	0.715	0.716	-2	..	..	0.33	..
112	Indonesia	0.526	0.597	0.667	0.698	0.718	0.712	0.707	0.713	1	1.27	1.11	0.56	0.96
113	Philippines	0.598	0.635	0.673	0.696	0.714	0.705	0.692	0.710	2	0.60	0.58	0.45	0.54
114	Botswana	0.587	0.581	0.652	0.688	0.703	0.701	0.680	0.708	5	-0.10	1.16	0.69	0.59
115	Jamaica	0.664	0.657	0.711	0.712	0.712	0.707	0.704	0.706	-7	-0.11	0.79	-0.06	0.19
116	Samoa	..	0.672	0.704	0.710	0.712	0.712	0.708	0.702	-7	..	0.47	-0.02	..
117	Kyrgyzstan	0.637	0.617	0.661	0.689	0.699	0.691	0.696	0.701	1	-0.32	0.69	0.49	0.30
118	Belize	0.609	0.657	0.720	0.714	0.718	0.705	0.698	0.700	-11	0.76	0.92	-0.23	0.44
Medium human development														
119	Venezuela (Bolivarian Republic of)	0.657	0.699	0.759	0.766	0.720	0.691	0.690	0.699	-39	0.62	0.83	-0.68	0.19
120	Bolivia (Plurinational State of)	0.546	0.625	0.661	0.688	0.715	0.691	0.691	0.698	-1	1.36	0.56	0.45	0.77
120	Morocco	0.448	0.525	0.604	0.656	0.684	0.683	0.688	0.698	5	1.60	1.41	1.21	1.40
122	Nauru	..	..	0.559	0.642	0.680	0.689	0.693	0.696	9	..	..	1.84	..
123	Gabon	0.599	0.626	0.656	0.692	0.702	0.704	0.687	0.693	-6	0.44	0.47	0.46	0.46

Continued →

HDI RANK		Human Development Index (HDI) Value 1990	2000	2010	2015	2019	2020	2021	2022	Change in HDI rank 2015-2022[a]	Average annual HDI growth (%) 1990-2000	2000-2010	2010-2022	1990-2022
124	Suriname	..	..	0.696	0.707	0.710	0.702	0.689	0.690	-13	..	..	-0.07	..
125	Bhutan	..	..	0.582	0.625	0.668	0.675	0.677	0.681	10	..	..	1.32	..
126	Tajikistan	0.616	0.548	0.631	0.651	0.668	0.656	0.677	0.679	2	-1.16	1.42	0.61	0.30
127	El Salvador	0.519	0.609	0.657	0.663	0.676	0.666	0.669	0.674	-4	1.61	0.76	0.21	0.82
128	Iraq	0.497	0.583	0.629	0.656	0.678	0.661	0.667	0.673	-3	1.61	0.76	0.57	0.95
129	Bangladesh	0.399	0.491	0.558	0.604	0.646	0.657	0.662	0.670	12	2.10	1.29	1.54	1.63
130	Nicaragua	0.487	0.563	0.611	0.644	0.661	0.652	0.665	0.669	0	1.46	0.82	0.76	1.00
131	Cabo Verde	..	0.590	0.649	0.658	0.667	0.649	0.650	0.661	-7	..	0.96	0.15	..
132	Tuvalu	0.564	0.599	0.623	0.656	0.654	0.655	0.653	0.653	-7	0.60	0.39	0.39	0.46
133	Equatorial Guinea	..	0.511	0.609	0.648	0.653	0.650	0.647	0.650	-4	..	1.77	0.54	..
134	India	0.434	0.490	0.572	0.619	0.638	0.638	0.633	0.644	4	1.22	1.56	0.99	1.24
135	Micronesia (Federated States of)	..	0.637	0.644	0.642	0.640	0.636	0.634	0.634	-4	..	0.11	-0.13	..
136	Guatemala	0.490	0.551	0.613	0.629	0.645	0.638	0.630	0.629	-3	1.18	1.07	0.21	0.78
137	Kiribati	..	0.547	0.584	0.625	0.636	0.629	0.627	0.628	-2	..	0.66	0.61	..
138	Honduras	0.513	0.553	0.596	0.610	0.629	0.621	0.620	0.624	1	0.75	0.75	0.38	0.61
139	Lao People's Democratic Republic	0.408	0.473	0.557	0.604	0.617	0.616	0.615	0.620	2	1.49	1.65	0.90	1.32
140	Vanuatu	..	..	0.578	0.592	0.614	0.612	0.614	0.614	4	..	..	0.50	..
141	Sao Tome and Principe	0.480	0.498	0.553	0.595	0.608	0.609	0.609	0.613	2	0.37	1.05	0.86	0.77
142	Eswatini (Kingdom of)	0.546	0.465	0.498	0.577	0.623	0.622	0.612	0.610	5	-1.59	0.69	1.70	0.35
142	Namibia	0.595	0.549	0.584	0.627	0.638	0.634	0.616	0.610	-8	-0.80	0.62	0.36	0.08
144	Myanmar	0.333	0.407	0.506	0.557	0.608	0.615	0.599	0.608	10	2.03	2.20	1.54	1.90
145	Ghana	0.445	0.500	0.571	0.586	0.599	0.601	0.600	0.602	1	1.17	1.34	0.44	0.95
146	Kenya	0.480	0.487	0.545	0.575	0.604	0.599	0.596	0.601	2	0.14	1.13	0.82	0.71
146	Nepal	0.395	0.461	0.543	0.568	0.598	0.593	0.591	0.601	3	1.56	1.65	0.85	1.32
148	Cambodia	0.379	0.431	0.542	0.564	0.596	0.596	0.596	0.600	2	1.29	2.32	0.85	1.45
149	Congo	0.541	0.509	0.581	0.610	0.596	0.598	0.598	0.593	-10	-0.61	1.33	0.17	0.29
150	Angola	..	0.380	0.516	0.591	0.597	0.594	0.590	0.591	-5	..	3.11	1.14	..
151	Cameroon	0.440	0.426	0.515	0.562	0.586	0.585	0.581	0.587	1	-0.32	1.92	1.10	0.90
152	Comoros	..	0.458	0.524	0.556	0.584	0.588	0.585	0.586	3	..	1.36	0.94	..
153	Zambia	0.417	0.418	0.528	0.563	0.574	0.569	0.565	0.569	-2	0.02	2.36	0.63	0.98
154	Papua New Guinea	0.394	0.456	0.497	0.540	0.562	0.567	0.564	0.568	5	1.47	0.86	1.12	1.15
155	Timor-Leste	..	0.495	0.639	0.621	0.627	0.633	0.574	0.566	-18	..	2.59	-1.01	..
156	Solomon Islands	..	0.488	0.553	0.562	0.568	0.566	0.564	0.562	-4	..	1.26	0.13	..
157	Syrian Arab Republic	0.563	0.587	0.661	0.552	0.564	0.561	0.558	0.557	-1	0.42	1.19	-1.42	-0.03
158	Haiti	0.441	0.485	0.449	0.549	0.559	0.557	0.551	0.552	-1	0.96	-0.77	1.74	0.70
159	Uganda	0.329	0.392	0.500	0.525	0.544	0.545	0.545	0.550	2	1.77	2.46	0.80	1.62
159	Zimbabwe	0.479	0.426	0.481	0.544	0.560	0.554	0.549	0.550	-1	-1.17	1.22	1.12	0.43
Low human development														
161	Nigeria	..	..	0.488	0.520	0.537	0.539	0.542	0.548	2	..	..	0.97	..
161	Rwanda	0.320	0.328	0.485	0.509	0.531	0.535	0.539	0.548	5	0.25	3.99	1.02	1.70
163	Togo	0.399	0.436	0.469	0.510	0.536	0.540	0.545	0.547	2	0.89	0.73	1.29	0.99
164	Mauritania	0.397	0.461	0.508	0.536	0.552	0.539	0.538	0.540	-4	1.51	0.98	0.51	0.97
164	Pakistan	0.394	0.434	0.496	0.525	0.537	0.536	0.537	0.540	-3	0.97	1.34	0.71	0.99
166	Côte d'Ivoire	0.425	0.454	0.470	0.501	0.529	0.530	0.530	0.534	4	0.66	0.35	1.07	0.72
167	Tanzania (United Republic of)	0.366	0.396	0.493	0.507	0.533	0.535	0.529	0.532	2	0.79	2.22	0.64	1.18
168	Lesotho	0.479	0.456	0.470	0.508	0.528	0.530	0.522	0.521	0	-0.49	0.30	0.86	0.26
169	Senegal	0.371	0.388	0.470	0.501	0.514	0.514	0.512	0.517	1	0.45	1.94	0.80	1.04
170	Sudan	0.322	0.420	0.489	0.514	0.521	0.518	0.516	0.516	-6	2.69	1.53	0.45	1.48
171	Djibouti	..	0.330	0.422	0.473	0.508	0.512	0.512	0.515	4	..	2.49	1.67	..
172	Malawi	0.299	0.378	0.461	0.498	0.514	0.512	0.509	0.508	1	2.37	2.00	0.81	1.67
173	Benin	0.350	0.412	0.481	0.509	0.506	0.501	0.502	0.504	-7	1.64	1.56	0.39	1.15
174	Gambia	0.323	0.392	0.449	0.467	0.492	0.492	0.490	0.495	5	1.95	1.37	0.82	1.34
175	Eritrea	..	..	0.458	0.473	0.487	0.490	0.490	0.493	0	..	..	0.62	..
176	Ethiopia	..	0.286	0.409	0.455	0.485	0.489	0.489	0.492	5	..	3.64	1.55	..
177	Liberia	..	0.434	0.460	0.472	0.485	0.483	0.484	0.487	0	..	0.58	0.48	..
177	Madagascar	..	0.438	0.488	0.499	0.498	0.486	0.484	0.487	-5	..	1.09	-0.02	..
179	Guinea-Bissau	..	..	0.441	0.470	0.488	0.482	0.482	0.483	-1	..	..	0.76	..
180	Congo (Democratic Republic of the)	0.377	0.376	0.424	0.457	0.476	0.477	0.475	0.481	0	-0.03	1.21	1.06	0.76
181	Guinea	0.270	0.345	0.415	0.449	0.470	0.471	0.467	0.471	2	2.48	1.86	1.06	1.75
182	Afghanistan	0.284	0.340	0.449	0.479	0.492	0.488	0.473	0.462	-8	1.82	2.82	0.24	1.53
183	Mozambique	0.239	0.303	0.407	0.445	0.465	0.467	0.459	0.461	1	2.40	2.99	1.04	2.07
184	Sierra Leone	0.314	0.319	0.416	0.438	0.457	0.453	0.456	0.458	1	0.16	2.69	0.80	1.19
185	Burkina Faso	..	0.296	0.372	0.413	0.446	0.446	0.445	0.438	2	..	2.31	1.37	..

Continued →

HDI RANK		Human Development Index (HDI) Value								Change in HDI rank	Average annual HDI growth (%)			
		1990	2000	2010	2015	2019	2020	2021	2022	2015-2022[a]	1990-2000	2000-2010	2010-2022	1990-2022
186	Yemen	0.357	0.434	0.496	0.455	0.430	0.430	0.425	0.424	-5	1.97	1.34	-1.30	0.54
187	Burundi	0.285	0.298	0.404	0.420	0.423	0.419	0.419	0.420	-1	0.45	3.09	0.32	1.22
188	Mali	0.236	0.315	0.406	0.409	0.421	0.407	0.408	0.410	0	2.93	2.57	0.08	1.74
189	Chad	..	0.292	0.364	0.388	0.398	0.396	0.393	0.394	0	..	2.23	0.66	..
189	Niger	0.212	0.260	0.336	0.367	0.390	0.391	0.389	0.394	2	2.06	2.60	1.34	1.96
191	Central African Republic	0.333	0.319	0.357	0.367	0.391	0.389	0.387	0.387	0	−0.43	1.13	0.67	0.47
192	South Sudan	..	..	0.406	0.381	0.391	0.386	0.381	0.381	-2	..	..	−0.53	..
193	Somalia	..	..	..	..	..	..	..	0.380	..	..	..	..	..
Other countries or territories														
	Korea (Democratic People's Rep. of)	..	..	..	..	..	..	..	..	..	...	..	..	..
	Monaco	..	..	..	..	..	..	..	..	..	...	..	..	..
Human development groups														
	Very high human development	0.785	0.828	0.870	0.889	0.901	0.895	0.896	0.902	—	0.53	0.50	0.30	0.44
	High human development	0.560	0.626	0.703	0.736	0.760	0.759	0.760	0.764	—	1.12	1.17	0.70	0.98
	Medium human development	0.443	0.497	0.574	0.615	0.635	0.634	0.630	0.640	—	1.16	1.45	0.91	1.16
	Low human development	0.354 [b]	0.398	0.473	0.501	0.516	0.515	0.515	0.517	—	1.18	1.74	0.74	1.19
Developing countries		0.513	0.569	0.639	0.672	0.691	0.689	0.688	0.694	—	1.04	1.17	0.69	0.95
Regions														
	Arab States	0.550	0.615	0.672	0.691	0.709	0.704	0.704	0.704	—	1.12	0.89	0.39	0.77
	East Asia and the Pacific	0.507	0.594	0.689	0.728	0.757	0.760	0.761	0.766	—	1.60	1.49	0.89	1.30
	Europe and Central Asia	0.663	0.680	0.746	0.782	0.802	0.792	0.797	0.802	—	0.25	0.93	0.61	0.60
	Latin America and the Caribbean	0.637	0.686	0.735	0.758	0.768	0.755	0.754	0.763	—	0.74	0.69	0.31	0.57
	South Asia	0.444	0.500	0.574	0.616	0.635	0.635	0.631	0.641	—	1.19	1.39	0.92	1.15
	Sub-Saharan Africa	0.404 [b]	0.429	0.502	0.533	0.549	0.547	0.546	0.549	—	0.60	1.58	0.75	0.96
Least developed countries		0.354	0.408	0.487	0.518	0.540	0.542	0.540	0.542	—	1.43	1.79	0.90	1.34
Small island developing states		0.605	0.650	0.694	0.721	0.731	0.727	0.722	0.730	—	0.72	0.66	0.42	0.59
Organisation for Economic Co-operation and Development		0.796	0.842	0.878	0.894	0.905	0.897	0.899	0.906	—	0.56	0.42	0.26	0.41
World		**0.601**	**0.645**	**0.698**	**0.724**	**0.739**	**0.736**	**0.735**	**0.739**	**—**	**0.71**	**0.79**	**0.48**	**0.65**

Notes

For HDI values that are comparable across years and countries, use this table or the interpolated data at http://hdr.undp.org/en/data, which present trends using consistent data.

a A positive value indicates an improvement in rank.

b Value reported with relaxed aggregation rule. For details, see *Reader's guide*.

Definitions

Human Development Index (HDI): A composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge and a decent standard of living. See *Technical note 1* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf for details on how the HDI is calculated.

Average annual HDI growth: A smoothed annualized growth of the HDI in a given period, calculated as the annual compound growth rate.

Main data sources

Columns 1–8: HDRO calculations based on data from Barro and Lee (2018), IMF (2023), UNDESA (2022, 2023), UNESCO Institute for Statistics (2023), United Nations Statistics Division (2023) and World Bank (2023).

Column 9: Calculated based on data in columns 4 and 8.

Columns 10–13: Calculated based on data in columns 1, 2, 3 and 8.

TABLE 3

Inequality-adjusted Human Development Index

HDI RANK		Human Development Index (HDI)	Inequality-adjusted HDI (IHDI)			Coefficient of human inequality	Inequality in life expectancy	Inequality-adjusted life expectancy index	Inequality in education[a]	Inequality-adjusted education index	Inequality in income[a]	Inequality-adjusted income index	SDG 10.1 Income shares held by (%)			Gini coefficient
		Value	Value	Overall loss (%)	Difference from HDI rank[b]		(%)	Value	(%)	Value	(%)	Value	Poorest 40 percent	Richest 10 percent	Richest 1 percent	
		2022	2022	2022	2022	2022	2022[c]	2022	2022[d]	2022	2022[d]	2022	2010–2022[e]	2010–2022[e]	2021	2010–2022[e]
Very high human development																
1	Switzerland	0.967	0.891	7.9	-3	7.6	3.0	0.959	2.0	0.906	17.7	0.814	19.9	25.8	9.9	33.1
2	Norway	0.966	0.903	6.5	0	6.3	2.4	0.951	2.3	0.914	14.3	0.847	22.9	22.4	8.9	27.7
3	Iceland	0.959	0.910	5.1	2	5.0	2.2	0.945	2.2	0.938	10.7	0.851	23.9	22.1	9.3	26.1
4	Hong Kong, China (SAR)	0.956	0.840	12.1	-17	11.7	2.2	0.968	8.7	0.829	24.1	0.738	..	..	17.9	..
5	Denmark	0.952	0.898	5.7	2	5.6	3.1	0.923	2.6	0.908	11.0	0.864	23.4	22.9	13.4	27.5
5	Sweden	0.952	0.878	7.8	-5	7.6	2.5	0.953	3.4	0.891	16.9	0.796	22.0	22.4	11.7	28.9
7	Germany	0.950	0.881	7.3	-2	7.1	3.3	0.907	3.8	0.921	14.3	0.817	20.9	25.2	13.3	31.7
7	Ireland	0.950	0.886	6.7	2	6.6	2.8	0.938	2.9	0.862	14.0	0.860	22.3	23.8	12.2	29.2
9	Singapore	0.949	0.825	13.1	-17	12.5	2.3	0.964	9.4	0.785	25.9	0.741	..	..	10.3	..
10	Australia	0.946	0.860	9.1	-4	8.8	3.3	0.946	4.7	0.880	18.5	0.763	19.5	26.6	9.9	34.3
10	Netherlands	0.946	0.885	6.4	3	6.4	3.1	0.931	4.7	0.877	11.4	0.850	23.8	21.6	6.9	26.0
12	Belgium	0.942	0.878	6.8	2	6.7	3.2	0.927	5.7	0.865	11.3	0.842	23.9	21.4	8.6	26.0
12	Finland	0.942	0.886	5.9	7	5.8	2.6	0.934	2.1	0.911	12.8	0.818	23.5	22.6	11.8	27.1
12	Liechtenstein	0.942	..	..	..	..	4.5	0.950	..	..	..	..	..	..	..	..
15	United Kingdom	0.940	0.865	8.0	2	7.8	3.5	0.923	3.3	0.906	16.7	0.773	20.0	25.0	12.7	32.6
16	New Zealand	0.939	0.856	8.8	-2	8.7	3.8	0.932	4.1	0.894	18.1	0.752	..	..	11.9	..
17	United Arab Emirates	0.937	0.859	8.3	1	8.2	4.4	0.871	9.8	0.815	10.4	0.894	23.0	20.0	15.3	26.0
18	Canada	0.935	0.864	7.6	4	7.4	4.0	0.928	2.3	0.885	16.0	0.785	20.4	24.4	13.9	31.7
19	Korea (Republic of)	0.929	0.841	9.5	-2	9.3	2.6	0.959	8.8	0.801	16.4	0.774	20.5	24.0	11.7	31.4
20	Luxembourg	0.927	0.839	9.5	-3	9.2	3.2	0.932	8.1	0.759	16.4	0.836	19.4	25.0	12.1	33.4
20	United States	0.927	0.823	11.2	-8	10.7	5.6	0.845	2.6	0.885	23.9	0.745	16.6	30.1	19.0	39.8
22	Austria	0.926	0.859	7.2	6	7.0	2.9	0.932	2.6	0.842	15.6	0.808	21.4	23.1	10.7	29.8
22	Slovenia	0.926	0.882	4.8	13	4.7	2.1	0.935	2.0	0.895	10.0	0.820	25.1	20.5	8.4	24.0
24	Japan	0.920	0.844	8.3	4	8.1	2.6	0.972	4.5	0.813	17.1	0.761	20.5	26.4	12.9	32.9
25	Israel	0.915	0.808	11.7	-7	11.1	3.1	0.933	6.3	0.811	24.0	0.698	16.1	27.6	16.0	38.6
25	Malta	0.915	0.837	8.5	1	8.3	4.2	0.939	5.2	0.804	15.5	0.778	21.0	25.1	10.7	31.4
27	Spain	0.911	0.796	12.6	-12	12.3	2.6	0.957	15.0	0.721	19.2	0.732	18.1	25.0	11.4	34.9
28	France	0.910	0.820	9.9	-1	9.8	3.6	0.937	7.8	0.769	17.9	0.764	21.2	24.5	9.0	30.7
29	Cyprus	0.907	0.827	8.8	3	8.7	2.5	0.928	8.7	0.791	14.8	0.771	21.3	26.3	8.9	31.7
30	Italy	0.906	0.802	11.5	-4	11.1	2.6	0.960	10.0	0.739	20.8	0.729	18.4	26.1	12.2	35.2
31	Estonia	0.899	0.835	7.1	6	6.9	3.2	0.881	1.9	0.877	15.7	0.754	21.1	23.5	16.3	30.7
32	Czechia	0.895	0.848	5.3	13	5.1	3.1	0.867	1.2	0.874	11.1	0.804	24.2	22.5	10.6	26.2
33	Greece	0.893	0.801	10.3	-3	10.2	3.5	0.900	10.3	0.789	16.8	0.722	19.2	25.2	10.0	33.6
34	Bahrain	0.888	..	..	..	..	4.4	0.871	8.8	0.749	..	..	..	..	24.3	..
35	Andorra	0.884	0.810	8.4	3	8.3	4.8	0.931	5.6	0.701	14.4	0.814	..	..	..	..
36	Poland	0.881	0.797	9.5	-3	9.3	3.9	0.843	4.2	0.845	19.8	0.710	22.3	23.1	15.2	28.8
37	Latvia	0.879	0.802	8.8	2	8.3	4.2	0.824	1.8	0.888	19.0	0.706	18.6	27.5	8.6	35.7
37	Lithuania	0.879	0.795	9.6	-4	9.1	4.2	0.801	2.9	0.879	20.4	0.715	19.0	28.5	12.5	36.0
39	Croatia	0.878	0.817	6.9	8	6.9	3.3	0.882	3.9	0.810	13.5	0.763	21.3	22.3	9.3	29.5
40	Qatar	0.875	..	..	..	..	4.0	0.909	11.2	0.627	..	..	..	..	22.4	..
40	Saudi Arabia	0.875	..	..	..	..	5.1	0.845	12.6	0.698	..	..	..	..	21.0	..
42	Portugal	0.874	0.774	11.4	-2	11.3	3.0	0.929	12.5	0.688	18.4	0.724	19.3	26.9	9.4	34.7
43	San Marino	0.867	..	..	..	..	2.5	0.951	5.6	0.657	..	..	..	..	..	..
44	Chile	0.860	0.704	18.1	-17	16.6	5.0	0.870	7.1	0.776	37.7	0.517	15.0	35.8	22.9	44.9
45	Slovakia	0.855	0.808	5.5	9	5.5	4.7	0.811	1.8	0.827	10.0	0.785	24.9	18.8	7.2	23.2
45	Türkiye	0.855	0.717	16.1	-13	15.6	6.0	0.846	11.9	0.700	28.9	0.622	15.5	31.6	18.8	41.9
47	Hungary	0.851	0.800	6.0	6	6.0	3.9	0.813	2.7	0.805	11.3	0.781	21.5	23.3	11.1	29.7
48	Argentina	0.849	0.747	12.0	0	11.7	7.3	0.800	5.3	0.825	22.6	0.631	15.0	30.8	15.1	42.0
49	Kuwait	0.847	..	..	..	..	5.0	0.880	22.1	0.533	..	..	..	..	19.0	..
50	Montenegro	0.844	0.756	10.4	3	10.1	2.5	0.853	7.8	0.774	19.9	0.655	16.8	26.0	8.6	36.8
51	Saint Kitts and Nevis	0.838	..	..	..	..	7.5	0.740	..	..	..	..	..	..	..	..
52	Uruguay	0.830	0.720	13.3	-7	12.8	5.9	0.839	7.3	0.726	25.1	0.611	15.9	30.8	13.4	40.8
53	Romania	0.827	0.739	10.6	0	10.4	4.9	0.792	5.4	0.740	20.9	0.688	17.9	24.2	14.5	34.6
54	Antigua and Barbuda	0.826	..	..	..	..	4.8	0.867	..	..	..	..	..	..	..	..
55	Brunei Darussalam	0.823	0.727	11.7	-2	11.5	7.6	0.776	14.9	0.585	12.1	0.847	..	..	12.4	..
56	Russian Federation	0.821	0.747	9.0	5	8.7	5.5	0.729	2.0	0.831	18.7	0.688	19.1	29.0	23.8	36.0
57	Bahamas	0.820	0.663	19.1	-16	17.8	8.9	0.762	6.9	0.703	37.6	0.546	..	..	19.6	..

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HDI RANK		Human Development Index (HDI)	Inequality-adjusted HDI (IHDI)			Coefficient of human inequality	Inequality in life expectancy	Inequality-adjusted life expectancy index	Inequality in education[a]	Inequality-adjusted education index	Inequality in income[a]	Inequality-adjusted income index	Income shares held by (%) (SDG 10.1)			Gini coefficient
		Value	Value	Overall loss (%)	Difference from HDI rank[b]		(%)	Value	(%)	Value	(%)	Value	Poorest 40 percent	Richest 10 percent	Richest 1 percent	
		2022	2022	2022	2022	2022	2022[c]	2022	2022[d]	2022	2022[d]	2022	2010–2022[e]	2010–2022[e]	2021	2010–2022[e]
57	Panama	0.820	0.647	21.1	–20	19.9	10.7	0.781	10.2	0.650	38.9	0.533	11.6	39.4	19.6	50.9
59	Oman	0.819	0.721	12.0	1	11.5	6.6	0.775	4.3	0.724	23.7	0.668	..	..	19.1	..
60	Georgia	0.814	0.728	10.6	4	10.3	6.7	0.741	2.7	0.864	21.4	0.602	19.1	26.2	18.5	34.2
60	Trinidad and Tobago	0.814	..	..	..	..	11.1	0.749	9.7	0.707	..	..	..	..	19.6	..
62	Barbados	0.809	0.617	23.7	–27	20.8	7.8	0.818	5.5	0.745	49.0	0.385	..	..	..	..
63	Malaysia	0.807	0.692	14.3	–5	13.8	5.4	0.819	11.4	0.636	24.8	0.638	15.7	31.2	20.1	41.2
64	Costa Rica	0.806	0.656	18.6	–12	17.6	6.0	0.829	11.1	0.658	35.6	0.517	13.1	35.7	17.7	47.2
65	Serbia	0.805	0.740	8.1	11	7.9	4.1	0.799	6.2	0.737	13.5	0.689	19.0	27.1	15.5	35.0
66	Thailand	0.803	0.681	15.2	–4	14.9	7.1	0.853	16.0	0.611	21.7	0.607	19.1	27.3	23.0	35.1
67	Kazakhstan	0.802	0.734	8.5	11	8.3	7.0	0.708	3.2	0.800	14.7	0.698	23.3	23.4	10.6	27.8
67	Seychelles	0.802	0.715	10.8	4	10.8	9.1	0.723	6.7	0.709	16.6	0.712	19.6	23.9	20.6	32.1
69	Belarus	0.801	0.750	6.4	18	6.2	3.3	0.792	2.8	0.774	12.7	0.688	24.8	20.7	8.7	24.4
High human development																
70	Bulgaria	0.799	0.703	12.0	4	11.6	5.3	0.751	5.8	0.721	23.7	0.640	17.0	32.6	16.6	40.5
71	Palau	0.797	0.633	20.6	–11	18.9	12.6	0.610	3.1	0.885	40.9	0.470	..	..	..	..
72	Mauritius	0.796	0.625	21.5	–15	21.0	10.0	0.748	21.7	0.579	31.4	0.564	18.8	29.9	15.9	36.8
73	Grenada	0.793	..	..	..	..	9.2	0.773	..	..	..	..	..	..	..	..
74	Albania	0.789	0.687	12.9	4	12.8	6.4	0.819	12.3	0.649	19.7	0.610	21.6	22.8	9.2	29.4
75	China	0.788	0.662	16.0	–1	15.3	5.4	0.853	10.3	0.622	30.3	0.547	18.2	29.4	15.7	37.1
76	Armenia	0.786	0.721	8.3	16	8.1	6.3	0.769	2.9	0.755	15.1	0.646	23.2	23.6	19.0	27.9
77	Mexico	0.781	0.641	17.9	–4	17.5	9.2	0.766	15.0	0.604	28.4	0.568	14.3	35.5	26.8	45.4
78	Iran (Islamic Republic of)	0.780	0.584	25.1	–24	24.3	8.3	0.770	37.1	0.472	27.5	0.547	16.3	31.7	18.1	40.9
78	Sri Lanka	0.780	0.630	19.2	–7	18.0	5.3	0.825	12.0	0.663	36.6	0.458	18.5	30.8	14.8	37.7
80	Bosnia and Herzegovina	0.779	0.667	14.4	6	13.8	4.0	0.817	10.9	0.641	26.5	0.567	19.8	25.1	9.4	33.0
81	Saint Vincent and the Grenadines	0.772	..	..	..	..	9.5	0.682	6.1	0.768	..	..	..	..	..	..
82	Dominican Republic	0.766	0.627	18.1	–6	18.1	16.6	0.695	14.6	0.582	22.9	0.609	17.5	30.2	28.6	38.5
83	Ecuador	0.765	0.630	17.6	–3	17.1	8.9	0.812	11.8	0.628	30.6	0.490	13.8	34.3	16.9	45.5
83	North Macedonia	0.765	0.679	11.2	10	11.1	4.4	0.793	8.4	0.643	20.5	0.613	18.1	22.9	7.7	33.5
85	Cuba	0.764	..	..	..	..	4.5	0.854	9.1	0.685	..	..	..	..	15.1	..
86	Moldova (Republic of)	0.763	0.698	8.5	16	8.4	9.0	0.681	2.7	0.787	13.6	0.635	24.3	22.1	11.3	25.7
87	Maldives	0.762	0.597	21.7	–11	20.9	4.8	0.891	29.3	0.422	28.6	0.565	22.1	23.3	35.6	29.3
87	Peru	0.762	0.607	20.3	–7	19.8	8.5	0.752	20.4	0.593	30.6	0.501	16.3	30.6	28.1	40.2
89	Azerbaijan	0.760	0.707	7.0	22	6.9	11.4	0.729	3.6	0.680	5.7	0.714	..	..	15.9	..
89	Brazil	0.760	0.577	24.1	–18	22.4	9.6	0.743	13.9	0.610	43.7	0.424	10.8	41.5	22.2	52.9
91	Colombia	0.758	0.568	25.1	–18	23.5	9.3	0.749	17.2	0.577	44.0	0.424	11.5	40.2	17.8	51.5
92	Libya	0.746	..	..	..	..	7.8	0.739	..	..	..	..	..	..	13.5	..
93	Algeria	0.745	0.588	21.1	–8	20.5	11.4	0.778	33.3	0.442	16.8	0.590	23.1	22.9	9.9	27.6
94	Turkmenistan	0.744	..	..	..	..	19.2	0.614	2.9	0.717	..	..	..	..	18.4	..
95	Guyana	0.742	..	..	..	..	16.2	0.593	10.4	0.582	..	..	..	..	19.6	..
96	Mongolia	0.741	0.645	13.0	11	12.9	7.5	0.749	11.9	0.632	19.2	0.566	20.2	25.7	14.8	32.7
97	Dominica	0.740	..	..	..	..	8.9	0.742	..	..	..	..	..	..	..	..
98	Tonga	0.739	0.654	11.5	14	11.2	8.4	0.722	4.3	0.780	20.7	0.497	20.0	26.8	..	33.5
99	Jordan	0.736	0.615	16.4	2	16.3	9.3	0.757	15.4	0.591	24.1	0.520	20.3	27.5	17.1	33.7
100	Ukraine	0.734	0.676	7.9	21	7.9	6.8	0.697	3.6	0.714	13.3	0.621	24.3	21.8	13.6	25.6
101	Tunisia	0.732	0.574	21.6	–11	21.1	9.8	0.753	30.7	0.465	22.9	0.540	20.1	25.6	10.9	32.8
102	Marshall Islands	0.731	0.620	15.2	7	14.9	17.6	0.573	4.8	0.840	22.5	0.495	18.9	27.5	..	35.5
102	Paraguay	0.731	0.582	20.4	–8	19.6	11.9	0.684	12.4	0.597	34.6	0.482	14.5	35.4	19.6	45.1
104	Fiji	0.729	0.632	13.3	14	13.2	12.5	0.650	8.6	0.667	18.5	0.581	21.3	24.2	..	30.7
105	Egypt	0.728	0.561	22.9	–9	22.1	10.7	0.689	36.9	0.433	18.7	0.592	21.8	27.5	18.1	31.9
106	Uzbekistan	0.727	..	..	..	..	9.0	0.723	1.8	0.717	..	..	..	..	17.4	..
107	Viet Nam	0.726	0.607	16.4	8	16.3	12.6	0.734	15.3	0.546	21.1	0.559	18.1	28.5	16.4	36.8
108	Saint Lucia	0.725	0.539	25.7	–11	24.6	9.3	0.716	25.2	0.478	39.2	0.459	11.0	38.6	..	51.2
109	Lebanon	0.723	..	..	..	..	5.8	0.789	..	..	20.2	0.580	20.6	24.8	20.5	31.8
110	South Africa	0.717	0.462	35.6	–23	32.2	19.5	0.514	17.3	0.648	59.9	0.295	7.2	50.5	19.3	63.0
111	Palestine, State of	0.716	0.587	18.0	3	17.3	10.3	0.738	10.2	0.626	31.4	0.439	19.2	25.2	17.4	33.7
112	Indonesia	0.713	0.588	17.5	6	17.3	12.8	0.648	15.5	0.569	23.6	0.553	18.3	30.7	14.8	37.9
113	Philippines	0.710	0.590	16.9	8	16.7	14.5	0.687	12.0	0.575	23.6	0.520	16.9	32.5	19.6	40.7
114	Botswana	0.708	0.488	31.1	–12	30.1	21.6	0.554	23.3	0.510	45.5	0.412	10.9	41.5	22.7	53.3

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HDI RANK		Human Development Index (HDI)	Inequality-adjusted HDI (IHDI)			Coefficient of human inequality	Inequality in life expectancy	Inequality-adjusted life expectancy index	Inequality in education[a]	Inequality-adjusted education index	Inequality in income[a]	Inequality-adjusted income index	SDG 10.1 Income shares held by (%)			Gini coefficient
		Value	Value	Overall loss (%)	Difference from HDI rank[b]		(%)	Value	(%)	Value	(%)	Value	Poorest 40 percent	Richest 10 percent	Richest 1 percent	
		2022	2022	2022	2022	2022	2022[c]	2022	2022[d]	2022	2022[d]	2022	2010–2022[e]	2010–2022[e]	2021	2010–2022[e]
115	Jamaica	0.706	0.584	17.3	5	16.3	8.8	0.710	6.3	0.613	33.7	0.458	..	..	19.6	..
116	Samoa	0.702	0.602	14.2	14	13.9	11.0	0.720	7.0	0.673	23.7	0.450	17.9	31.3	..	38.7
117	Kyrgyzstan	0.701	0.634	9.6	27	9.4	9.4	0.703	3.4	0.734	15.3	0.495	22.5	24.0	15.6	29.0
118	Belize	0.700	..	..	..	..	9.1	0.713	14.8	0.545	..	..	..	..	19.6	..
Medium human development																
119	Venezuela (Bolivarian Republic of)	0.699	0.600	14.2	15	14.0	12.0	0.692	8.7	0.636	21.1	0.491	..	..	19.0	..
120	Bolivia (Plurinational State of)	0.698	0.560	19.8	2	19.7	17.2	0.573	15.0	0.633	26.9	0.484	15.7	30.3	19.6	40.9
120	Morocco	0.698	0.508	27.2	–5	26.1	10.5	0.757	41.9	0.353	25.9	0.490	17.4	31.9	15.1	39.5
122	Nauru	0.696	..	..	..	..	13.4	0.586	..	..	18.5	0.617	20.5	25.4	..	32.4
123	Gabon	0.693	0.526	24.1	–1	24.0	19.8	0.564	20.6	0.527	31.4	0.489	16.8	27.7	11.0	38.0
124	Suriname	0.690	..	..	..	..	11.5	0.685	18.4	0.477	..	..	..	..	19.6	..
125	Bhutan	0.681	0.465	31.7	–10	30.3	14.0	0.691	48.2	0.289	28.6	0.503	22.3	22.7	18.1	28.5
126	Tajikistan	0.679	0.585	13.8	14	13.7	15.0	0.670	6.0	0.637	19.9	0.468	19.4	26.4	12.1	34.0
127	El Salvador	0.674	0.548	18.7	6	18.4	9.2	0.719	22.6	0.440	23.3	0.520	16.6	28.7	13.7	38.8
128	Iraq	0.673	0.519	22.9	2	22.6	12.6	0.690	29.7	0.398	25.5	0.508	21.9	23.7	20.1	29.5
129	Bangladesh	0.670	0.470	29.9	–4	29.1	14.1	0.709	37.3	0.362	35.9	0.404	21.2	26.0	11.6	31.8
130	Nicaragua	0.669	0.507	24.2	2	23.6	9.6	0.759	25.8	0.439	35.3	0.390	14.3	37.2	19.6	46.2
131	Cabo Verde	0.661	0.471	28.7	–1	27.2	8.8	0.768	27.4	0.380	45.4	0.357	15.4	32.3	13.9	42.4
132	Tuvalu	0.653	0.545	16.5	10	16.2	14.2	0.592	9.2	0.628	25.1	0.437	17.4	30.8	..	39.1
133	Equatorial Guinea	0.650	..	..	..	..	29.1	0.450	..	..	..	..	..	..	17.4	..
134	India	0.644	0.444	31.1	–6	30.5	17.3	0.607	36.9	0.359	37.4	0.401	20.0	27.8	21.7	34.2
135	Micronesia (Federated States of)	0.634	..	..	..	..	13.4	0.679	..	..	25.8	0.405	16.2	29.7	..	40.1
136	Guatemala	0.629	0.453	28.0	–4	27.4	14.3	0.642	35.0	0.317	32.8	0.457	13.1	38.1	19.6	48.3
137	Kiribati	0.628	0.528	15.9	11	15.8	22.3	0.570	9.6	0.571	15.5	0.451	23.0	22.9	..	27.8
138	Honduras	0.624	0.480	23.1	6	22.3	9.7	0.705	21.6	0.408	35.6	0.386	11.6	34.6	19.6	48.2
139	Lao People's Democratic Republic	0.620	0.466	24.8	3	24.7	19.4	0.608	31.3	0.331	23.6	0.502	17.8	31.2	17.1	38.8
140	Vanuatu	0.614	..	..	..	..	13.4	0.673	..	..	19.1	0.425	19.9	24.7	..	32.3
141	Sao Tome and Principe	0.613	0.459	25.1	1	23.9	10.7	0.670	18.7	0.446	42.4	0.322	16.8	32.9	9.0	40.7
142	Eswatini (Kingdom of)	0.610	0.372	39.0	–11	36.3	24.4	0.423	24.1	0.460	60.5	0.264	10.5	42.7	19.3	54.6
142	Namibia	0.610	0.399	34.6	–6	32.9	20.8	0.464	25.0	0.426	53.0	0.321	8.6	47.3	21.6	59.1
144	Myanmar	0.608	0.475	21.9	10	21.7	20.8	0.576	26.9	0.404	17.6	0.461	21.9	25.5	26.5	30.7
145	Ghana	0.602	0.378	37.2	–5	36.2	22.5	0.524	35.1	0.348	51.0	0.295	14.3	32.2	15.2	43.5
146	Kenya	0.601	0.438	27.1	3	26.5	20.1	0.517	19.7	0.460	39.6	0.353	18.2	31.8	15.2	38.7
146	Nepal	0.601	0.424	29.5	1	28.7	14.3	0.665	39.8	0.301	31.9	0.380	20.4	26.4	9.7	32.8
148	Cambodia	0.600	0.438	27.0	5	26.4	15.3	0.650	28.1	0.355	35.8	0.364	..	..	26.8	..
149	Congo	0.593	0.385	35.1	0	33.1	23.3	0.508	20.9	0.490	55.1	0.228	12.4	37.9	20.5	48.9
150	Angola	0.591	0.344	41.8	–12	40.2	28.3	0.462	34.2	0.351	58.1	0.252	11.5	39.6	26.0	51.3
151	Cameroon	0.587	0.362	38.3	–6	37.3	27.4	0.457	31.7	0.403	52.9	0.257	13.0	35.0	15.9	46.6
152	Comoros	0.586	0.334	43.0	–14	41.9	25.6	0.500	47.6	0.298	52.4	0.250	13.6	33.7	14.2	45.3
153	Zambia	0.569	0.344	39.5	–9	36.0	24.1	0.488	20.4	0.437	63.4	0.191	9.4	43.5	23.2	55.9
154	Papua New Guinea	0.568	0.407	28.3	8	28.0	21.0	0.558	35.7	0.305	27.2	0.398	15.1[f]	31.0[f]	18.1	41.9[f]
155	Timor-Leste	0.566	0.407	28.1	9	26.7	19.3	0.609	44.9	0.313	16.1	0.354	22.8	24.0	17.6	28.7
156	Solomon Islands	0.562	..	..	..	..	12.0	0.687	..	..	22.5	0.365	18.4	29.2	..	37.1
157	Syrian Arab Republic	0.557	..	..	..	..	12.7	0.703	..	..	..	..	..	..	20.7	..
158	Haiti	0.552	0.335	39.3	–9	38.3	25.5	0.501	37.3	0.311	52.1	0.241	15.8	31.2	19.6	41.1
159	Uganda	0.550	0.377	31.5	6	30.7	20.4	0.534	27.9	0.380	43.6	0.265	16.1	34.5	19.3	42.7
159	Zimbabwe	0.550	0.370	32.7	2	30.6	24.4	0.458	14.6	0.512	52.9	0.216	15.1	34.8	21.1	50.3
Low human development																
161	Nigeria	0.548	0.369	32.7	3	32.1	39.7	0.312	37.8	0.339	18.6	0.475	18.7	26.7	11.6	35.1
161	Rwanda	0.548	0.377	31.2	8	30.3	19.3	0.585	27.4	0.348	44.3	0.264	15.8	35.6	19.9	43.7
163	Togo	0.547	0.345	36.9	0	36.5	27.7	0.462	37.7	0.340	44.1	0.262	15.6	33.0	14.8	42.5
164	Mauritania	0.540	0.351	35.0	2	34.7	25.1	0.515	44.0	0.214	35.0	0.391	19.9	24.9	10.8	32.6
164	Pakistan	0.540	0.360	33.3	4	32.8	26.8	0.523	43.5	0.207	28.2	0.432	22.7	25.5	15.7	29.6
166	Côte d'Ivoire	0.534	0.318	40.4	–8	40.0	30.4	0.417	46.1	0.227	43.4	0.340	18.0	29.0	21.0	37.2
167	Tanzania (United Republic of)	0.532	0.372	30.1	12	29.5	20.6	0.572	27.0	0.312	41.1	0.289	17.4	33.1	18.2	40.5
168	Lesotho	0.521	0.332	36.3	–2	34.8	33.6	0.338	19.6	0.450	51.4	0.242	13.5	32.9	14.5	44.9
169	Senegal	0.517	0.334	35.4	1	34.3	16.3	0.617	47.1	0.185	39.3	0.325	17.9	30.8	14.3	38.3
170	Sudan	0.516	0.331	35.9	–1	35.4	24.4	0.530	42.5	0.210	39.3	0.326	19.9	27.8	15.4	34.2

Continued →

TABLE 3

HDI RANK		Human Development Index (HDI)	Inequality-adjusted HDI (IHDI)			Coefficient of human inequality	Inequality in life expectancy	Inequality-adjusted life expectancy index	Inequality in education[a]	Inequality-adjusted education index	Inequality in income[a]	Inequality-adjusted income index	SDG 10.1 Income shares held by (%)			Gini coefficient
		Value	Value	Overall loss (%)	Difference from HDI rank[b]		(%)	Value	(%)	Value	(%)	Value	Poorest 40 percent	Richest 10 percent	Richest 1 percent	
		2022	2022	2022	2022	2022	2022[c]	2022	2022[d]	2022	2022[d]	2022	2010–2022[e]	2010–2022[e]	2021	2010–2022[e]
171	Djibouti	0.515	0.341	33.8	5	33.1	24.7	0.496	45.8	0.191	28.7	0.419	15.8	32.3	15.9	41.6
172	Malawi	0.508	0.359	29.3	11	29.0	19.7	0.530	28.0	0.356	39.3	0.244	17.9	31.0	15.0	38.5
173	Benin	0.504	0.309	38.7	-6	38.5	32.4	0.415	43.7	0.220	39.3	0.324	18.0	30.0	14.0	37.9
174	Gambia	0.495	0.311	37.2	-2	36.4	22.0	0.515	47.0	0.212	40.1	0.275	17.5	30.6	13.6	38.8
175	Eritrea	0.493	..	..	..	..	20.1	0.573	..	..	..	..	..	..	13.8	..
176	Ethiopia	0.492	0.324	34.1	2	33.7	21.9	0.548	42.8	0.204	36.5	0.304	19.4	28.5	13.8	35.0
177	Liberia	0.487	0.310	36.3	-1	36.2	30.0	0.443	42.1	0.271	36.4	0.249	18.8	27.1	12.2	35.3
177	Madagascar	0.487	0.328	32.6	4	31.8	22.3	0.541	28.3	0.293	44.9	0.223	15.7	33.5	15.2	42.6
179	Guinea-Bissau	0.483	0.310	35.8	1	35.5	29.2	0.434	42.1	0.240	35.3	0.287	19.4	27.6	12.0	34.8
180	Congo (Democratic Republic of the)	0.481	0.315	34.5	4	34.1	30.8	0.423	26.8	0.371	44.8	0.198	15.5	32.0	14.6	42.1
181	Guinea	0.471	0.285	39.5	-1	38.9	34.9	0.390	50.1	0.181	31.6	0.328	21.6	23.1	8.6	29.6
182	Afghanistan	0.462	0.300	35.1	1	34.2	24.6	0.498	48.8	0.195	29.2	0.277	..	..	16.2	..
183	Mozambique	0.461	0.270	41.4	-4	40.4	28.6	0.435	38.3	0.263	54.4	0.172	12.7	41.2	31.1	50.5
184	Sierra Leone	0.458	0.277	39.5	0	39.3	34.5	0.407	47.5	0.193	35.9	0.269	19.6	29.4	15.0	35.7
185	Burkina Faso	0.438	0.261	40.4	-4	40.0	30.5	0.425	46.1	0.163	43.4	0.258	16.1	35.3	15.6	43.0
186	Yemen	0.424	0.285	32.8	4	32.1	26.7	0.493	46.4	0.168	23.2	0.279	18.8	29.4	24.2	36.7
187	Burundi	0.420	0.273	35.0	1	34.7	25.1	0.484	39.5	0.234	39.5	0.179	17.9	31.0	14.7	38.6
188	Mali	0.410	0.277	32.4	4	32.0	32.0	0.412	41.0	0.147	23.0	0.351	18.7	28.1	11.8	36.0
189	Chad	0.394	0.238	39.6	-1	39.6	37.7	0.316	42.9	0.173	38.2	0.245	18.2	29.7	13.8	37.5
189	Niger	0.394	0.262	33.5	1	33.4	27.8	0.468	35.0	0.159	37.4	0.241	19.0	31.1	16.6	37.3
191	Central African Republic	0.387	0.237	38.8	0	38.6	35.0	0.345	35.2	0.217	45.5	0.178	15.3	33.1	31.0	43.0
192	South Sudan	0.381	0.222	41.7	0	41.4	35.9	0.351	39.6	0.210	48.9	0.149	12.5[f]	33.2[f]	15.5	44.1
193	Somalia	0.380	..	..	..	..	36.8	0.351	..	..	47.4	0.188	..	..	12.4	..
Other countries or territories																
..	Korea (Democratic People's Rep. of)	..	..	..	..	..	11.3	0.731	..	..	..	..	..	..	11.9	..
..	Monaco	..	..	..	..	..	3.5	0.965	..	..	..	..	..	..	..	..
Human development groups																
	Very high human development	0.902	0.807	10.5	—	10.2	4.5	0.871	5.9	0.819	20.2	0.737	18.9	27.3	16.0	—
	High human development	0.764	0.628	17.8	—	17.3	8.3	0.779	14.0	0.594	29.6	0.536	17.3	31.3	17.1	—
	Medium human development	0.640	0.447	30.2	—	29.7	17.4	0.609	34.6	0.370	37.1	0.396	19.3	28.7	20.2	—
	Low human development	0.517	0.341	34.0	—	33.8	28.9	0.455	39.2	0.251	33.4	0.348	18.8	29.1	15.4	—
Developing countries		0.694	0.524	24.5	—	24.2	14.9	0.662	25.0	0.452	32.5	0.480	18.2	29.9	17.9	—
Regions																
	Arab States	0.704	0.534	24.1	—	23.7	13.8	0.681	32.9	0.395	24.5	0.566	20.8	26.8	17.3	—
	East Asia and the Pacific	0.766	0.640	16.4	—	16.0	7.9	0.797	12.3	0.593	27.9	0.554	18.2	29.6	16.5	—
	Europe and Central Asia	0.802	0.708	11.7	—	11.5	7.5	0.762	6.5	0.733	20.4	0.636	19.6	26.9	15.7	—
	Latin America and the Caribbean	0.763	0.605	20.7	—	20.0	9.8	0.746	14.7	0.605	35.3	0.490	13.0	37.1	21.8	—
	South Asia	0.641	0.443	30.9	—	30.3	17.7	0.613	37.7	0.343	35.5	0.414	20.3	27.6	19.6	—
	Sub-Saharan Africa	0.549	0.363	33.9	—	33.6	27.9	0.451	33.6	0.322	39.4	0.330	16.4	32.4	16.0	—
Least developed countries		0.542	0.363	33.0	—	32.7	23.4	0.529	36.2	0.286	38.6	0.316	18.0	30.5	16.6	—
Small island developing states		0.730	0.558	23.6	—	23.2	14.9	0.675	22.0	0.497	32.7	0.518	..	..	18.9	—
Organisation for Economic Co-operation and Development		0.906	0.803	11.4	—	11.1	4.7	0.881	6.7	0.809	21.8	0.725	18.2	28.3	15.9	—
World		**0.739**	**0.576**	**22.1**	**—**	**21.7**	**13.1**	**0.695**	**21.7**	**0.508**	**30.3**	**0.542**	**18.4**	**29.4**	**17.5**	**—**

Notes

a	See http://hdr.undp.org/en/composite/IHDI for the list of surveys used to estimate inequalities.
b	Based on countries for which an Inequality-adjusted Human Development Index value is calculated.
c	Calculated by HDRO from period life tables from UNDESA (2022).
d	Data refer to 2022 or the most recent year available.
e	Data refer to the most recent year available during the period specified.
f	Refers to 2009.

Definitions

Human Development Index (HDI): A composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge and a decent standard of living. See *Technical note 1* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf for details on how the HDI is calculated.

Inequality-adjusted HDI (IHDI): HDI value adjusted for inequalities in the three basic dimensions of human development. See *Technical note 2* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf for details on how the IHDI is calculated.

Overall loss: Percentage difference between the IHDI value and the HDI value.

Difference from HDI rank: Difference in ranks on the IHDI and the HDI, calculated only for countries for which an IHDI value is calculated.

Coefficient of human inequality: Average inequality in the three basic dimensions of human development.

Inequality in life expectancy: Inequality in distribution of expected length of life based on data from life tables estimated using the Atkinson inequality index.

Inequality-adjusted life expectancy index: HDI life expectancy index value adjusted for inequality in distribution of expected length of life based on data from life tables listed in Main data sources.

Inequality in education: Inequality in distribution of years of schooling based on data from household surveys estimated using the Atkinson inequality index.

Inequality-adjusted education index: HDI education index value adjusted for inequality in distribution of years of schooling based on data from household surveys listed in Main data sources.

Inequality in income: Inequality in income distribution based on data from household surveys estimated using the Atkinson inequality index.

Inequality-adjusted income index: HDI income index value adjusted for inequality in income distribution based on data from household surveys listed in Main data sources.

Income shares: Percentage share of income (or consumption) that accrues to the indicated population subgroups.

Income share held by richest 1%: Share of pretax national income held by the richest 1 percent of the population. Pretax national income is the sum of all pretax personal income flows accruing to the owners of the production factors, labour and capital, before the tax/transfer system is taken into account and after the pension system is taken into account.

Gini coefficient: Measure of the deviation of the distribution of income among individuals or households in a country from a perfectly equal distribution. A value of 0 represents absolute equality, a value of 100 absolute inequality.

Main data sources

Column 1: HDRO calculations based on data from Barro and Lee (2018), IMF (2023), UNDESA (2022, 2023), UNESCO Institute for Statistics (2023), United Nations Statistics Division (2023) and World Bank (2023).

Column 2: Calculated as the geometric mean of the values in the inequality-adjusted life expectancy index, inequality-adjusted education index and inequality-adjusted income index using the methodology in *Technical note 2* (available at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf).

Column 3: Calculated based on data in columns 1 and 2.

Column 4: Calculated based on IHDI values and recalculated HDI ranks for countries for which an IHDI value is calculated.

Column 5: Calculated as the arithmetic mean of the values in inequality in life expectancy, inequality in education and inequality in income using the methodology in *Technical note 2* (available at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf).

Column 6: Calculated based on complete life tables from UNDESA (2022).

Column 7: Calculated based on inequality in life expectancy and the HDI life expectancy index.

Column 8: Calculated based on data from CEDLAS and World Bank (2023), Eurostat's European Union Statistics on Income and Living Conditions (2023), ICF Macro Demographic and Health Surveys (various years), LIS (2023), United Nations Children's Fund Multiple Indicator Cluster Surveys (various years) and UNESCO Institute for Statistics (2023), using the methodology in *Technical note 2* (available at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf).

Column 9: Calculated based on inequality in education and the HDI education index.

Column 10: UNU-WIDER 2023.

Column 11: Calculated based on inequality in income and the HDI income index.

Columns 12, 13 and 15: World Bank 2023.

Column 14: World Inequality Database 2022.

TABLE 4

Gender Development Index

						SDG 3		SDG 4.3		SDG 4.4		SDG 8.5	
		Gender Development Index		Human Development Index		Life expectancy at birth		Expected years of schooling		Mean years of schooling		Estimated gross national income per capita[a]	
				Value		(years)		(years)		(years)		(2017 PPP $)	
		Value	Group[b]	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
HDI RANK		2022	2022	2022	2022	2022	2022	2022[c]	2022[c]	2022[c]	2022[c]	2022	2022
Very high human development													
1	Switzerland	0.971	2	0.949	0.977	85.9	82.5	16.7	16.5	13.5 [d]	14.3 [d]	56,928	82,109 [e]
2	Norway	0.986	1	0.957	0.970	85.1	81.7	19.5 [f]	17.8	13.2 [d]	12.9 [d]	61,067	77,164 [e]
3	Iceland	0.975	1	0.946	0.969	84.3	81.4	20.5 [f]	17.8	13.9	13.7	45,506	63,420
4	Hong Kong, China (SAR)	0.972	2	0.943	0.970	86.9	81.8	17.9	17.8	12.0	12.8	51,563	75,270 [e]
5	Denmark	0.981	1	0.942	0.960	83.8	80.0	19.4 [f]	18.2 [g]	13.2	12.8	51,753	72,387
5	Sweden	0.983	1	0.941	0.957	85.1	81.9	20.7 [f]	17.5	12.8 [d]	12.5 [d]	47,828	66,019
7	Germany	0.966	2	0.932	0.964	83.5	78.5	17.4	17.3	14.0	14.5	41,022	70,040
7	Ireland	0.991	1	0.943	0.951	84.4	81.0	19.5 [f]	18.8 [g]	11.9 [d]	11.4 [d]	66,876	108,424 [e]
9	Singapore	0.991	1	0.945	0.954	86.3	82.0	17.0	16.8	11.6	12.3	76,611 [h]	99,844 [e]
10	Australia	0.978	1	0.935	0.956	85.5	81.7	22.0 [f]	20.2 [g]	12.8	12.6	41,131	57,496
10	Netherlands	0.960	2	0.925	0.964	83.9	80.9	18.9 [f]	18.2 [g]	12.4	12.8	44,139	70,575
12	Belgium	0.975	1	0.929	0.952	84.4	80.2	19.9 [f]	18.0	12.5 [d]	12.6 [d]	43,720	63,804
12	Finland	0.989	1	0.937	0.947	84.9	79.8	20.3 [f]	18.3 [g]	13.1 [d]	12.7 [d]	42,302	56,914
12	Liechtenstein	0.949	3	0.924	0.974	86.1	83.0 [i]	14.5	16.4	12.1 [j]	14.0 [j]	114,829 [h]	179,045 [e]
15	United Kingdom	0.976	1	0.926	0.949	83.8	80.4	18.2 [f]	17.1	13.4	13.4	35,910	57,591
16	New Zealand	0.970	2	0.924	0.953	84.7	81.3	20.2 [f]	19.2 [g]	12.9	13.0	34,940	52,542
17	United Arab Emirates	0.986	1	0.923	0.936	81.4	77.7	19.8 [f]	16.4	12.6	12.9	51,510	84,088 [e]
18	Canada	0.988	1	0.929	0.940	84.8	80.9	16.5	15.4	14.0 [d]	13.8 [d]	39,765	57,230
19	Korea (Republic of)	0.948	3	0.900	0.950	87.1	80.7	16.1	16.8	12.0 [d]	13.3 [d]	31,063	61,037
20	Luxembourg	0.993	1	0.920	0.927	84.8	80.4	14.3	14.1	12.9 [k]	13.0 [k]	66,697	90,256 [e]
20	United States	1.005	1	0.928	0.923	81.0	75.5	17.3	15.6	13.7	13.5	53,469	77,898 [e]
22	Austria	0.972	2	0.912	0.938	84.6	80.2	16.8	15.9	12.0 [d]	12.6 [d]	41,899	71,616
22	Slovenia	0.999	1	0.924	0.925	84.6	79.6	18.3 [f]	16.6	12.9 [d]	12.8 [d]	35,264	47,843
24	Japan	0.968	2	0.904	0.933	87.8 [l]	81.8	15.4	15.5	12.4	13.0	33,478	54,395
25	Israel	0.991	1	0.910	0.918	84.5	80.6	15.6	14.5	13.5 [d]	13.4 [d]	37,415	49,792
25	Malta	0.980	1	0.903	0.922	85.7	81.6	16.6	15.2	12.0	12.4	33,971	54,099
27	Spain	0.988	1	0.902	0.913	86.5	81.2	18.4 [f]	17.2	10.5	10.7	32,835	47,543
28	France	0.986	1	0.903	0.916	86.0	80.4	16.4	15.6	11.5 [d]	11.9 [d]	38,135	57,263
29	Cyprus	0.977	1	0.895	0.916	83.7	80.1	16.6	15.8	12.4	12.5	31,777	48,470
30	Italy	0.969	2	0.890	0.918	86.0	82.0	17.1	16.2	10.6	10.9	31,413	57,808
31	Estonia	1.022	1	0.908	0.888	83.0	75.0	16.8	15.1	13.8	13.3	31,199	43,737
32	Czechia	0.988	1	0.888	0.899	81.2	75.1	16.9	15.8	12.8 [d]	13.1 [d]	30,761	49,404
33	Greece	0.969	2	0.878	0.907	83.3	78.0	20.2 [f]	19.9 [g]	11.1	11.7	24,821	38,227
34	Bahrain	0.937	3	0.847	0.904	80.5	78.2	17.0	15.7	10.8	11.2	22,722	64,700
35	Andorra	..	..	..	..	85.8	81.4	12.8	12.8	11.5	11.7	..	..
36	Poland	1.009	1	0.884	0.876	80.8	73.2	16.7	15.2	13.3	13.0	27,366	43,446
37	Latvia	1.022	1	0.887	0.868	80.1	71.5	17.3	15.9	13.6 [d]	13.0 [d]	26,345	38,716
37	Lithuania	1.028	2	0.891	0.867	79.1	69.5	17.1	15.8	13.6	13.4	33,012	43,912
39	Croatia	0.993	1	0.875	0.881	82.0	76.4	16.5	14.7	12.1 [d]	12.6 [d]	27,573	41,433
40	Qatar	1.027	2	0.893	0.869	83.1	80.6	15.3	12.6	11.8 [d]	9.7 [d]	47,964	114,135 [e]
40	Saudi Arabia	0.928	3	0.832	0.897	79.5	76.7	15.5 [m]	14.8 [n]	10.7	11.7	24,647	69,723
42	Portugal	0.998	1	0.873	0.874	84.9	79.3	17.1	16.6	9.6	9.5	31,845	39,199
43	San Marino	0.966	2	0.853	0.883	84.7	82.0	12.0	12.9	10.7 [o]	10.5 [o]	50,410	65,363
44	Chile	0.973	2	0.847	0.870	81.9	77.2	17.1	16.5	11.0 [d]	11.2 [d]	18,612	30,337
45	Slovakia	1.002	1	0.856	0.854	78.8	71.9	15.3	14.2	13.0 [d]	13.0 [d]	26,634	37,967
45	Türkiye	0.941	3	0.825	0.876	81.5	75.4	19.6 [f]	19.8 [g]	8.1 [d]	9.6 [d]	20,538	45,077
47	Hungary	0.989	1	0.846	0.855	78.3	71.6	15.4	14.7	12.1	12.4	27,203	41,768
48	Argentina	0.995	1	0.841	0.845	79.3	72.9	20.9 [f]	17.1	11.4	10.9	16,933	27,265
49	Kuwait	1.014	1	0.848	0.836	82.8	78.9	17.8 [d]	13.8 [d]	8.3 [d]	7.0 [d]	28,018	75,232 [e]
50	Montenegro	0.978	1	0.833	0.852	80.3	73.5	15.6	14.6	12.1 [d]	13.2 [d]	17,543	27,750
51	Saint Kitts and Nevis	..	..	..	..	75.7	68.7	19.7 [f,p]	17.0 [p]	11.1 [m]	10.6 [q]	..	..
52	Uruguay	1.020	1	0.832	0.816	81.7	74.1	18.8 [f]	15.9	9.3 [d]	8.7 [d]	17,426	27,294
53	Romania	0.981	1	0.818	0.834	77.6	70.7	15.0	14.0	11.1 [d]	11.7 [d]	22,595	41,297
54	Antigua and Barbuda	..	..	..	..	81.6	76.5	16.7 [d]	14.4 [d]	10.3 [n]	10.6 [n]	..	..
55	Brunei Darussalam	0.983	1	0.814	0.829	76.8	72.5	14.2	13.3	9.2	9.2	44,703	72,823
56	Russian Federation	1.021	1	0.829	0.812	75.7	64.7	15.8 [d]	15.5 [d]	12.5	12.3	21,781	33,001
57	Bahamas	1.007	1	0.822	0.817	77.8	70.8	12.2 [m]	11.6 [m]	12.8 [d]	12.7 [d]	28,375	37,085
57	Panama	1.017	1	0.826	0.813	80.1	73.7	13.9 [d]	12.6 [d]	10.9 [d]	10.4 [d]	27,611	36,447
59	Oman	0.937	3	0.780	0.833	76.0	72.4	13.5	12.6	12.3	11.7	13,055	45,769

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HDI RANK		Gender Development Index		Human Development Index		SDG 3 Life expectancy at birth		SDG 4.3 Expected years of schooling		SDG 4.4 Mean years of schooling		SDG 8.5 Estimated gross national income per capita[a]	
				Value		(years)		(years)		(years)		(2017 PPP $)	
		Value	Group[b]	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
		2022	2022	2022	2022	2022	2022	2022[c]	2022[c]	2022[c]	2022[c]	2022	2022
60	Georgia	1.005	1	0.815	0.811	76.5	66.8	17.0	16.5	12.8	12.6	12,237	20,141
60	Trinidad and Tobago	0.992	1	0.809	0.815	78.2	71.3	14.4 [r]	13.8 [r]	11.9 [d]	11.6 [d]	17,088	28,007
62	Barbados	1.030	2	0.815	0.792	79.6	75.7	18.3 [d,f]	14.8 [d]	10.4 [s]	9.1 [s]	12,595	17,214
63	Malaysia	0.973	2	0.794	0.816	78.8	74.0	13.4	12.5	10.7 [d]	10.8 [d]	19,262	34,983
64	Costa Rica	0.995	1	0.803	0.807	80.0	74.8	16.7 [d]	15.6 [d]	8.9	8.7	16,531	23,965
65	Serbia	0.986	1	0.799	0.810	77.0	71.3	15.2	13.8	11.2 [d]	11.9 [d]	15,909	23,388
66	Thailand	1.011	1	0.807	0.798	83.9	75.5	15.9	15.3	8.7 [d]	9.0 [d]	15,289	18,580
67	Kazakhstan	0.998	1	0.799	0.801	73.0	65.8	15.0	14.6	12.5 [d]	12.4 [d]	18,595	26,890
67	Seychelles	1.064	3	0.829	0.779	76.0	68.2	15.4	12.6	12.0 [m]	10.4	24,756	31,651
69	Belarus	1.003	1	0.801	0.799	78.4	68.1	13.9	14.0	12.3 [d]	12.2 [d]	14,502	23,022
High human development													
70	Bulgaria	0.995	1	0.797	0.800	75.1	68.3	14.1	13.6	11.5	11.3	20,700	31,466
71	Palau	1.007	1	0.802	0.797	69.3	62.2	18.3 [f,o]	16.9 [o]	13.3 [o]	12.8 [m]	15,159	23,218
72	Mauritius	0.976	1	0.784	0.803	77.1	71.0	15.2	14.1	9.9 [s]	10.1 [s]	15,594	31,124
73	Grenada	0.976	1	0.781	0.801	78.3	72.6	17.1 [d]	16.1 [d]	9.8 [m]	9.9 [n]	9,775	17,412
74	Albania	0.977	1	0.780	0.798	79.5	74.5	14.7	14.3	9.8 [s]	10.4 [s]	13,199	17,398
75	China	0.962	2	0.771	0.802	81.3	76.0	15.7 [d]	14.8 [d]	7.5 [m]	8.7 [t]	13,292	22,567
76	Armenia	1.026	2	0.795	0.775	78.4	67.9	14.8	14.0	11.3	11.3	13,443	17,770
77	Mexico	0.979	1	0.770	0.787	78.2	71.5	15.0	14.1	9.1	9.4	13,548	25,008
78	Iran (Islamic Republic of)	0.880	5	0.710	0.806	77.5	71.9	14.2	14.1	10.7 [d]	10.8 [d]	4,140	25,192
78	Sri Lanka	0.947	3	0.751	0.793	80.2	72.9	14.1 [d]	13.2 [d]	11.1	11.4	6,241	17,990
80	Bosnia and Herzegovina	0.952	2	0.759	0.797	77.5	73.1	13.8	12.8	9.8	11.4	12,420	20,853
81	Saint Vincent and the Grenadines	..	..	..	..	71.7	66.7	16.4 [d]	16.1 [d]	11.0 [o]	11.0 [o]	..	..
82	Dominican Republic	1.029	2	0.775	0.753	77.5	71.0	14.8	12.3	9.6 [d]	8.7 [d]	14,773	22,506
83	Ecuador	0.990	1	0.760	0.768	80.5	75.3	15.3	14.4	8.9	9.0	9,147	12,245
83	North Macedonia	0.950	2	0.744	0.783	76.2	71.7	13.4	12.6	9.7	10.8	11,526	21,296
85	Cuba	0.973	2	0.750	0.771	80.6	75.8	15.3	13.7	10.6 [d]	10.4 [d]	5,571	10,373
86	Moldova (Republic of)	1.033	2	0.776	0.751	73.3	64.2	15.4	14.4	11.9 [d]	11.8 [d]	12,272	13,725
87	Maldives	0.976	1	0.748	0.767	81.8	80.1	13.3 [d]	11.2 [d]	7.9 [d]	7.7 [d]	12,161	23,783
87	Peru	0.952	2	0.742	0.779	75.5	71.3	14.9 [d]	14.7 [d]	9.4 [d]	10.6 [d]	9,515	14,365
89	Azerbaijan	0.961	2	0.743	0.773	76.2	70.6	12.7	12.7	10.2 [d]	10.9 [d]	11,526	18,603
89	Brazil	1.000	1	0.758	0.758	76.6	70.3	16.2	15.0	8.5 [d]	8.0 [d]	11,292	18,061
91	Colombia	0.998	1	0.756	0.758	77.1	70.3	14.7	14.2	9.0	8.7	12,252	17,854
92	Libya	0.988	1	0.739	0.748	74.8	69.7	14.8 [n]	13.5 [n]	8.4 [m]	7.2 [m]	12,073	27,248
93	Algeria	0.881	5	0.682	0.774	78.5	75.9	16.3	14.7	6.5 [d]	7.5 [d]	3,842	17,859
94	Turkmenistan	..	..	..	..	72.9	65.9	13.2	13.2	10.8 [d]	11.5 [d]	..	..
95	Guyana	0.992	1	0.738	0.743	69.4	62.8	13.3 [r]	12.7 [r]	8.7 [s]	8.5 [s]	26,505	45,454
96	Mongolia	1.032	2	0.751	0.728	77.4	68.1	15.3 [d]	13.8 [d]	9.9	8.8	8,099	12,640
97	Dominica	..	..	..	..	76.5	69.9	14.4 [m]	12.7 [m]	9.0 [n]	9.7 [n]	..	..
98	Tonga	0.996	1	0.736	0.739	74.1	68.6	17.4	15.2	11.0 [s]	10.8 [s]	5,051	7,698
99	Jordan	0.863	5	0.662	0.767	76.7	72.1	12.9 [d]	12.4 [d]	10.1	10.8	2,753	15,380
100	Ukraine	1.021	1	0.741	0.726	73.9	63.5	13.5	13.1	11.4 [s]	10.7 [s]	9,025	14,233
101	Tunisia	0.928	3	0.698	0.751	77.4	71.4	15.5 [d]	13.8 [d]	7.3 [d]	8.7 [d]	5,198	15,528
102	Marshall Islands	0.945	3	0.708	0.748	67.1	63.5	17.0	15.8	12.7 [o]	12.9 [m]	4,518	9,096
102	Paraguay	0.994	1	0.728	0.732	73.6	67.6	14.6 [u]	13.3 [u]	8.9	8.9	10,349	15,954
104	Fiji	0.940	3	0.700	0.745	70.2	66.5	14.4	13.3	10.4	10.3	6,282	16,158
105	Egypt	0.884	5	0.664	0.752	72.6	67.9	12.8	13.0	10.2 [d]	9.6 [d]	3,739	20,790
106	Uzbekistan	0.924	4	0.691	0.748	74.3	69.0	12.0	12.0	11.7	12.1	4,390	11,716
107	Viet Nam	1.007	1	0.729	0.723	79.3	69.9	13.3 [v]	12.8 [v]	8.1 [d]	8.8 [d]	9,615	12,042
108	Saint Lucia	1.013	1	0.729	0.719	74.9	68.0	13.4	12.1	8.8 [d]	8.3 [d]	11,815	17,807
109	Lebanon	0.928	3	0.690	0.743	76.6	72.2	12.8 [w]	11.3 [w]	8.0 [m]	9.2 [o]	6,546	18,439
110	South Africa	0.985	1	0.710	0.721	64.2	58.6	14.8	13.7	11.5	11.7	10,423	16,095
111	Palestine, State of	0.880	5	0.649	0.737	75.9	71.0	14.0	12.4	9.9	10.0	2,134	11,759
112	Indonesia	0.940	3	0.688	0.732	70.4	66.2	14.1 [d]	13.9 [d]	8.2	8.9	8,111	15,926
113	Philippines	0.966	2	0.694	0.718	74.2	70.2	13.2	12.4	9.2 [d]	8.7 [d]	6,179	11,851
114	Botswana	0.998	1	0.707	0.708	68.4	63.3	11.8	11.1	10.4	10.5	13,676	16,037
115	Jamaica	1.016	1	0.710	0.699	72.7	68.5	13.6 [d]	11.4 [d]	9.9 [d]	8.6 [d]	7,647	11,775
116	Samoa	0.968	2	0.687	0.709	75.3	70.1	13.0	11.9	11.8 [d]	11.0 [d]	3,314	6,562
117	Kyrgyzstan	0.975	1	0.690	0.707	74.9	66.2	13.2	12.8	11.9 [d]	12.0 [d]	3,442	6,170
118	Belize	0.982	1	0.691	0.704	74.7	67.7	12.8	12.1	9.0	8.7	6,319	12,133

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HDI RANK		Gender Development Index		Human Development Index		SDG 3 Life expectancy at birth		SDG 4.3 Expected years of schooling		SDG 4.4 Mean years of schooling		SDG 8.5 Estimated gross national income per capita[a]	
				Value		(years)		(years)		(years)		(2017 PPP $)	
		Value	Group[b]	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
		2022	2022	2022	2022	2022	2022	2022[c]	2022[c]	2022[c]	2022[c]	2022	2022
Medium human development													
119	Venezuela (Bolivarian Republic of)	1.002	1	0.695	0.693	75.7	66.9	14.3[o]	12.4[o]	9.8[o]	9.5[m]	4,285	8,126
120	Bolivia (Plurinational State of)	0.965	2	0.686	0.711	67.9	62.3	15.1	14.9	9.2	10.5	6,727	9,243
120	Morocco	0.851	5	0.628	0.737	77.2	72.9	14.5	14.7	5.1	7.0	2,968	12,876
122	Nauru	1.037	2	0.708	0.683	67.8	60.5	14.4[d]	11.0[d]	9.3[m]	9.2[n]	11,558	18,213
123	Gabon	0.982	1	0.683	0.696	68.4	63.4	12.6[n]	12.3[m]	10.4	8.7	7,296	14,958
124	Suriname	0.987	1	0.683	0.692	73.6	67.2	11.3	10.6	8.6[d]	8.2[d]	8,820	15,832
125	Bhutan	0.970	2	0.670	0.690	74.2	70.6	13.6[d]	12.6[d]	5.2[d]	6.3[d]	9,343	11,766
126	Tajikistan	0.919	4	0.647	0.704	73.5	69.2	10.4[d]	11.3[d]	10.9[s]	11.6[s]	3,295	6,300
127	El Salvador	0.972	2	0.662	0.681	75.8	66.8	12.2[u]	11.6[u]	6.8	7.6	6,244	11,794
128	Iraq	0.786	5	0.569	0.724	73.4	69.2	11.6[v]	12.8[v]	5.6[s]	8.0[s]	2,087	16,070
129	Bangladesh	0.914	4	0.635	0.694	76.0	71.5	12.4	11.5	6.8	8.0	3,684	9,387
130	Nicaragua	0.949	3	0.647	0.682	77.6	71.6	12.3[u]	12.8[u]	7.5	7.0	3,596	7,311
131	Cabo Verde	0.981	1	0.652	0.664	79.0	70.3	11.8[d]	11.3[d]	5.8[o]	6.3[o]	5,732	9,491
132	Tuvalu	0.975	1	0.643	0.659	69.4	61.1	12.4[d]	11.8[d]	10.5[d]	10.8[d]	3,378	6,063
133	Equatorial Guinea	..	..	..	..	63.3	59.4	12.0[n]	12.3[n]	8.2[n]	8.4[m]	..	..
134	India	0.852	5	0.582	0.684	69.4	66.3	12.6	12.6	5.5	7.6	2,958	10,696
135	Micronesia (Federated States of)	0.950	2	0.615	0.647	74.8	67.3	12.7[n]	12.5[m]	6.9[n]	7.8[n]	2,652	4,756
136	Guatemala	0.931	3	0.604	0.649	71.8	65.7	10.6[d]	10.9[d]	5.2[d]	6.3[d]	6,114	11,938
137	Kiribati	0.849	5	0.555	0.654	69.4	65.7	12.4	11.3	9.3[m]	9.0[o]	1,100	5,903
138	Honduras	0.974	2	0.616	0.632	73.2	68.5	10.3[u]	9.6[u]	6.9[d]	7.8[d]	4,695	5,837
139	Lao People's Democratic Republic	0.919	4	0.593	0.645	71.2	66.9	10.0	10.4	5.0[s]	6.9[s]	6,380	9,088
140	Vanuatu	0.936	3	0.591	0.631	73.1	68.3	11.9[d]	11.7[d]	6.6[n]	7.5[n]	2,445	4,033
141	Sao Tome and Principe	..	..	..	..	71.9	66.1	12.9[r]	12.5[r]	5.3[d]	6.7[d]	..	..
142	Eswatini (Kingdom of)	0.987	1	0.606	0.614	60.6	52.6	14.4[d]	15.5[d]	5.8	5.7	6,958	9,848
142	Namibia	1.006	1	0.612	0.608	61.7	54.6	11.7[x]	11.8[x]	7.5[s]	7.0[s]	7,827	10,673
144	Myanmar	0.941	3	0.583	0.619	70.5	64.2	12.3[d]	11.3[d]	6.2[s]	6.9[s]	2,545	5,544
145	Ghana	0.933	3	0.583	0.625	66.1	61.8	11.5	11.7	5.6[s]	7.6[s]	4,794	5,970
146	Kenya	0.948	3	0.585	0.617	64.7	59.6	11.4[x]	11.4[x]	7.1	8.3	3,977	5,654
146	Nepal	0.885	5	0.562	0.635	72.4	68.6	12.8	12.5	3.4[d]	5.7[d]	2,609	5,564
148	Cambodia	0.926	3	0.577	0.623	72.6	67.1	11.3[o]	11.8[m]	4.4	6.2	3,563	5,034
149	Congo	0.909	4	0.564	0.620	64.6	61.5	13.0[d]	11.9[d]	7.2[s]	9.4[s]	2,085	3,722
150	Angola	0.905	4	0.561	0.620	64.5	59.4	11.5	12.9	4.5[x]	7.2[x]	4,696	5,974
151	Cameroon	0.900	4	0.556	0.618	62.6	59.4	12.7[d]	14.1[d]	5.6[s]	7.6[s]	3,048	4,318
152	Comoros	0.914	4	0.558	0.611	66.1	61.5	13.4[d]	12.7[d]	5.2[y]	7.3[y]	2,338	4,174
153	Zambia	0.930	3	0.548	0.589	64.5	59.1	11.1[y]	11.0[y]	6.4[s]	8.3[s]	2,531	3,800
154	Papua New Guinea	0.927	3	0.546	0.589	69.2	63.4	10.5[x]	11.7[x]	4.2[s]	5.7[s]	3,219	4,171
155	Timor-Leste	0.904	4	0.534	0.591	70.8	67.4	13.4[x]	13.1[x]	5.5[x]	6.6[x]	1,145	2,094
156	Solomon Islands	0.959	2	0.554	0.578	72.4	69.3	11.1[d]	9.7[d]	5.5[n]	6.8[n]	1,998	2,537
157	Syrian Arab Republic	0.805	5	0.481	0.597	76.1	68.7	7.2[o]	7.7[m]	5.4[o]	6.7[o]	1,049	6,132
158	Haiti	0.929	3	0.531	0.571	66.7	60.9	11.1[m]	11.2[n]	5.1[s]	6.3[s]	2,110	3,506
159	Uganda	0.899	5	0.522	0.580	65.7	61.5	11.1[x]	11.9[x]	5.2[d]	7.7[d]	1,890	2,597
159	Zimbabwe	0.936	3	0.532	0.568	62.1	56.4	10.7[d]	11.4[d]	8.2[d]	9.6[d]	1,762	2,433
Low human development													
161	Nigeria	0.886	5	0.515	0.581	54.0	53.3	10.2	10.8	6.6	8.7	4,110	5,386
161	Rwanda	0.921	4	0.524	0.569	69.2	64.8	11.5	11.3	4.5	5.4	1,662	3,000
163	Togo	0.848	5	0.505	0.596	62.2	60.9	12.5[d]	14.3[d]	4.2[d]	7.2[d]	1,744	2,679
164	Mauritania	0.874	5	0.503	0.575	66.4	63.0	8.2	8.0	4.1[s]	5.8[s]	3,053	7,727
164	Pakistan	0.834	5	0.480	0.575	68.9	64.1	7.3[d]	8.4[d]	3.9[d]	4.8[d]	2,120	8,571
166	Côte d'Ivoire	0.861	5	0.492	0.572	60.3	57.7	9.5	10.7	3.1[s]	5.4[s]	4,063	6,665
167	Tanzania (United Republic of)	0.940	3	0.516	0.549	68.9	64.7	8.7	8.5	5.1[d]	6.3[d]	2,195	2,970
168	Lesotho	0.999	1	0.519	0.520	55.9	50.3	11.4[d]	10.8[d]	8.2[d]	6.8[d]	2,129	3,304
169	Senegal	0.925	3	0.496	0.536	70.2	65.5	9.9	8.4	2.3[d]	3.7[d]	2,256	4,712
170	Sudan	0.868	5	0.472	0.544	68.2	63.0	8.3[d]	8.7[d]	3.5	4.2	1,750	5,282
171	Djibouti	0.844	5	0.466	0.552	65.5	60.3	8.2[d]	8.0[d]	2.9[o]	5.1[o]	2,307	7,481
172	Malawi	0.926	3	0.489	0.528	66.3	59.6	11.5[d]	11.5[d]	4.3	6.4	1,191	1,687
173	Benin	0.848	5	0.462	0.544	61.7	58.3	9.5	11.1	2.1[s]	4.4[s]	2,604	4,205
174	Gambia	0.940	3	0.481	0.511	64.3	61.5	9.9[x]	8.1[x]	3.7	5.6	1,792	2,390
175	Eritrea	..	..	..	..	68.7	64.5	6.9[d]	7.8[d]	4.0[n]	5.7[n]	..	..
176	Ethiopia	0.922	4	0.472	0.512	68.9	62.6	10.2[d]	9.8[d]	1.7[d]	3.2[d]	1,762	2,970

Continued →

						SDG 3		SDG 4.3		SDG 4.4		SDG 8.5	
		Gender Development Index		Human Development Index		Life expectancy at birth		Expected years of schooling		Mean years of schooling		Estimated gross national income per capita[a]	
				Value		(years)		(years)		(years)		(2017 PPP $)	
		Value	Group[b]	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
HDI RANK		2022	2022	2022	2022	2022	2022	2022[c]	2022[c]	2022[c]	2022[c]	2022	2022
177	Liberia	0.860	5	0.451	0.524	62.4	59.8	10.1	10.8	3.6 [s]	7.2 [s]	1,163	1,499
177	Madagascar	0.945	3	0.473	0.500	67.6	63.0	9.3 [d]	9.1 [d]	4.3	4.9	1,224	1,702
179	Guinea-Bissau	0.862	5	0.451	0.523	61.9	57.7	10.4 [v]	11.6 [v]	2.5	5.1	1,487	2,282
180	Congo (Democratic Republic of the)	0.891	5	0.454	0.510	62.1	57.5	9.6 [d]	9.7 [d]	5.8 [s]	8.8 [s]	917	1,246
181	Guinea	0.818	5	0.422	0.515	60.2	57.6	9.1 [d]	11.2 [d]	1.4 [d]	3.4 [d]	1,719	3,104
182	Afghanistan	0.622	5	0.332	0.534	66.2	59.8	8.1 [d]	13.2 [d]	1.2	3.9	396	2,256
183	Mozambique	0.929	3	0.443	0.477	62.7	56.5	10.3 [d]	11.1 [d]	3.2	4.4	1,060	1,385
184	Sierra Leone	0.885	5	0.432	0.488	61.7	59.1	9.4 [r]	9.0 [r]	2.4 [d]	4.8 [d]	1,326	1,898
185	Burkina Faso	0.881	5	0.409	0.464	61.5	58.0	8.2	8.0	1.6 [d]	3.1 [d]	1,454	2,624
186	Yemen	0.456	5	0.219	0.480	67.2	60.5	6.9 [o]	8.9 [o]	1.8 [z]	3.6 [z]	150	2,042
187	Burundi	0.926	3	0.404	0.436	63.9	60.1	10.2 [d]	9.7 [d]	2.6 [d]	4.1 [d]	636	789
188	Mali	0.830	5	0.368	0.444	60.8	58.1	6.4 [d]	7.5 [d]	1.1	2.2	1,333	2,741
189	Chad	0.776	5	0.342	0.441	54.8	51.3	6.8 [d]	9.5 [d]	1.3 [d]	3.5 [d]	991	1,783
189	Niger	0.826	5	0.354	0.428	63.4	60.8	6.5 [d]	7.9 [d]	1.0 [s]	1.8 [s]	893	1,663
191	Central African Republic	..	..	..	..	56.8	52.3	6.1 [d]	8.4 [d]	2.7 [s]	5.4 [s]	..	..
192	South Sudan	..	..	..	..	57.0	54.0	4.5 [d]	6.7 [d]	4.8 [aa]	6.2 [aa]	..	..
193	Somalia	0.769	5	0.327	0.425	58.2	54.1	7.6 [n]	8.3 [n]	0.9	2.9	578	1,563
Other countries or territories													
	Korea (Democratic People's Rep. of)	..	..	..	..	76.1	71.0	..	..	..	..	..	..
	Monaco	..	..	..	..	88.9 [l]	85.1 [i]	19.4 [d,f]	18.1 [d,g]	..	..	..	..
Human development groups													
	Very high human development	0.988	—	0.895	0.906	82.3	76.4	17.1	16.1	12.2	12.3	34,726	55,442
	High human development	0.962	—	0.747	0.777	78.0	72.5	14.8	14.2	8.3	9.0	10,904	20,011
	Medium human development	0.870	—	0.587	0.675	69.9	66.1	12.3	12.3	5.8	7.6	3,127	9,638
	Low human development	0.868	—	0.478	0.551	63.7	59.7	8.9	9.6	3.9	5.5	2,073	4,368
Developing countries		0.929	—	0.665	0.716	72.9	68.2	12.6	12.5	7.1	8.2	7,283	14,943
Regions													
	Arab States	0.877	—	0.646	0.736	73.5	69.3	11.8	12.0	7.2	8.3	5,468	22,726
	East Asia and the Pacific	0.962	—	0.749	0.779	79.0	73.6	14.8	14.2	7.8	8.7	11,939	20,216
	Europe and Central Asia	0.963	—	0.785	0.815	77.0	70.2	15.5	15.5	10.4	10.8	13,573	26,631
	Latin America and the Caribbean	0.991	—	0.758	0.765	76.9	70.6	15.3	14.2	9.0	8.9	11,503	18,823
	South Asia	0.855	—	0.580	0.678	70.4	66.7	11.8	12.0	5.7	7.5	2,958	10,808
	Sub-Saharan Africa	0.915	—	0.525	0.574	62.6	58.7	10.2	10.5	5.2	6.9	3,025	4,388
Least developed countries		0.890	—	0.509	0.572	67.4	62.5	9.9	10.3	4.3	5.9	2,042	4,054
Small island developing states		0.979	—	0.722	0.738	74.3	69.0	12.9	12.3	8.5	8.8	13,079	19,712
Organisation for Economic Co-operation and Development		0.984	—	0.898	0.912	82.9	77.4	17.1	16.1	12.1	12.3	36,106	56,848
World		**0.951**	**—**	**0.719**	**0.756**	**74.5**	**69.6**	**13.1**	**12.9**	**8.2**	**9.1**	**12,516**	**22,035**

Notes

a Because disaggregated income data are not available, data are crudely estimated. See *Definitions* and *Technical note 3* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf for details on how the Gender Development Index is calculated.

b Countries are divided into five groups by absolute deviation from gender parity in HDI values.

c Data refer to 2022 or the most recent year available.

d Updated by HDRO based on data from UNESCO Institute for Statistics (2023).

e In calculating the male HDI value, estimated gross national income per capita is capped at $75,000.

f In calculating the female HDI value, expected years of schooling is capped at 18 years.

g In calculating the male HDI value, expected years of schooling is capped at 18 years.

h In calculating the female HDI value, estimated gross national income per capita is capped at $75,000.

i In calculating the male HDI value, life expectancy at birth is capped at 82.5 years.

j Updated by HDRO using the mean years of schooling trend of Austria and data from UNESCO Institute for Statistics (2023).

k Updated by HDRO based on data from OECD (2023) and UNESCO Institute for Statistics (2023).

l In calculating the female HDI value, life expectancy at birth is capped at 87.5 years.

m HDRO estimate based on data from Robert Barro and Jong-Wha Lee; the Center for Distributive, Labor and Social Studies and the World Bank's Socio-Economic Database for Latin America and the Caribbean; ICF Macro Demographic and Health Surveys; the Organisation for Economic Co-operation and Development; United Nations Children's Fund (UNICEF) Multiple Indicator Cluster Surveys; and the United Nations Educational, Scientific and Cultural Organization Institute for Statistics.

n Based on HDRO estimates using cross-country regression.

o Updated by HDRO based on data from UNESCO Institute for Statistics (2023) and estimates using cross-country regression.

p Refers to 2015 based on UNESCO Institute for Statistics (2023).

q Refers to 2015 based on HDRO estimates using cross-country regression.

r Updated by HDRO based on data from UNESCO Institute for Statistics (2023) and UNICEF Multiple Indicator Cluster Surveys for various years.

s Updated by HDRO based on data from Barro and Lee (2018) and UNESCO Institute for Statistics (2023).

t Refers to 2018 based on UNESCO Institute for Statistics (2023).

u Updated by HDRO based on data from CEDLAS and World Bank (2023) and UNESCO Institute for Statistics (2023).

v Updated by HDRO based on data from UNICEF Multiple Indicator Cluster Surveys for various years.

w Updated by HDRO based on data from UNICEF Multiple Indicator Cluster Surveys for various years and estimates using cross-country regression.

x Updated by HDRO based on data from ICF Macro Demographic and Health Surveys for various years and UNESCO Institute for Statistics (2023).

y Updated by HDRO based on data from ICF Macro Demographic and Health Surveys for various years.

z Updated by HDRO based on data from Barro and Lee (2018) and estimates using cross-country regression.

aa Refers to 2008 based on UNESCO Institute for Statistics (2023).

Definitions

Gender Development Index: Ratio of female to male HDI values. See *Technical note 3* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf for details on how the Gender Development Index is calculated.

Gender Development Index groups: Countries are divided into five groups by absolute deviation from gender parity in HDI values. Group 1 comprises countries with high equality in HDI achievements between women and men (absolute deviation of less than 2.5 percent), group 2 comprises countries with medium to high equality in HDI achievements between women and men (absolute deviation of 2.5–5 percent), group 3 comprises countries with medium equality in HDI achievements between women and men (absolute deviation of 5–7.5 percent), group 4 comprises countries with medium to low equality in HDI achievements between women and men (absolute deviation of 7.5–10 percent) and group 5 comprises countries with low equality in HDI achievements between women and men (absolute deviation from gender parity of more than 10 percent).

Human Development Index (HDI): A composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge and a decent standard of living. See *Technical note 1* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf for details on how the HDI is calculated.

Life expectancy at birth: Number of years a newborn infant could expect to live if prevailing patterns of age-specific mortality rates at the time of birth stay the same throughout the infant's life.

Expected years of schooling: Number of years of schooling that a child of school entrance age can expect to receive if prevailing patterns of age-specific enrolment rates persist throughout the child's life.

Mean years of schooling: Average number of years of education received by people ages 25 and older, converted from educational attainment levels using official durations of each level.

Estimated gross national income per capita: Derived from the ratio of female to male wages, female and male shares of economically active population and gross national income (in 2017 purchasing power parity terms). See *Technical note 3* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf for details.

Main data sources

Column 1: Calculated based on data in columns 3 and 4.

Column 2: Calculated based on data in column 1.

Columns 3 and 4: HDRO calculations based on data from Barro and Lee (2018), IMF (2023), UNDESA (2022, 2023), UNESCO Institute for Statistics (2023), United Nations Statistics Division (2023) and World Bank (2023).

Columns 5 and 6: UNDESA 2022.

Columns 7 and 8: CEDLAS and World Bank 2023, ICF Macro Demographic and Health Surveys, UNESCO Institute for Statistics 2023 and UNICEF Multiple Indicator Cluster Surveys.

Columns 9 and 10: Barro and Lee 2018, ICF Macro Demographic and Health Surveys, OECD 2023, UNESCO Institute for Statistics 2023 and UNICEF Multiple Indicator Cluster Surveys.

Columns 11 and 12: HDRO calculations based on ILO (2023), IMF (2023), UNDESA (2023), United Nations Statistics Division (2023) and World Bank (2023).

Gender Inequality Index

HDI RANK		Gender Inequality Index		SDG 3.1 Maternal mortality ratio	SDG 3.7 Adolescent birth rate	SDG 5.5 Share of seats in parliament	SDG 4.4 Population with at least some secondary education (% ages 25 and older)		Labour force participation rate[a] (% ages 15 and older)	
		Value	Rank	(deaths per 100,000 live births)	(births per 1,000 women ages 15–19)	(% held by women)	Female	Male	Female	Male
		2022	2022	2020	2022	2022	2022[b]	2022[b]	2022	2022
Very high human development										
1	Switzerland	0.018	3	7	2.2	39.0	96.9 [c]	97.5 [c]	61.5	71.9
2	Norway	0.012	2	2	2.2	45.0	99.1 [c]	99.3 [c]	62.5	69.6
3	Iceland	0.039	9	3	5.1	47.6	99.8	99.7	70.7	78.3
4	Hong Kong, China (SAR)	..	..	..	1.6	..	77.9	84.1	52.9	64.7
5	Denmark	0.009	1	5	1.8	43.6	95.1	95.2	59.4	67.4
5	Sweden	0.023	4	5	3.3	46.4	92.4 [c]	92.7 [c]	63.7	70.4
7	Germany	0.071	19	4	7.2	34.8	95.4	95.9	56.1	66.6
7	Ireland	0.072	20	5	5.9	27.4	88.6 [c]	86.4 [c]	59.4	70.5
9	Singapore	0.036	8	7	2.5	29.1	80.5	85.9	63.4	77.0
10	Australia	0.063	17	3	7.7	44.5	94.6	94.4	62.3	71.1
10	Netherlands	0.025	5	4	2.7	37.8	89.8	92.7	63.6	72.4
12	Belgium	0.044	11	5	5.1	44.3	88.7 [c]	90.7 [c]	50.8	59.5
12	Finland	0.032	6	8	4.1	45.5	99.2	98.9	58.2	64.2
12	Liechtenstein	..	..	..	3.0	28.0	..	..	52.8	67.3
15	United Kingdom	0.094	28	10	10.0	31.3	99.8	99.8	59.1	68.0
16	New Zealand	0.082	23	7	11.8	50.4	82.0	81.8	66.9	75.9
17	United Arab Emirates	0.035	7	9	2.8	50.0	82.0	86.1	55.3	89.5
18	Canada	0.069	18	11	6.6	35.0	97.8 [d]	97.6 [d]	61.5	69.5
19	Korea (Republic of)	0.062	16	8	2.1	18.6	83.8 [c]	93.5 [c]	55.0	73.7
20	Luxembourg	0.043	10	6	4.2	33.3	96.6 [d]	89.3 [d]	58.0	65.1
20	United States	0.180	44	21	15.1	28.1	95.4	95.1	56.8	68.0
22	Austria	0.048	12	5	5.2	41.0	100.0 [d]	100.0 [d]	56.6	66.7
22	Slovenia	0.049	13	5	4.4	33.1	97.8 [c]	98.8 [c]	54.3	63.6
24	Japan	0.078	22	4	2.8	15.4	98.2	99.1	54.2	71.4
25	Israel	0.092	26	3	7.4	23.3	92.5 [c]	94.5 [c]	61.2	68.5
25	Malta	0.117	35	3	11.5	27.8	82.2	88.1	56.1	71.2
27	Spain	0.059	15	3	6.3	41.4	78.5	83.2	53.2	62.9
28	France	0.084	24	8	9.4	36.4	84.3 [c]	88.3 [c]	52.5	60.2
29	Cyprus	0.253	62	68	6.8	14.3	81.1	84.8	59.6	71.1
30	Italy	0.057	14	5	3.9	33.0	78.6	86.1	40.7	58.1
31	Estonia	0.093	27	5	8.1	25.7	97.6	98.1	60.6	71.4
32	Czechia	0.113	32	3	9.4	23.5	99.8 [c]	99.8 [c]	52.2	67.9
33	Greece	0.120	37	8	8.3	21.0	69.9	77.8	44.7	60.4
34	Bahrain	0.181	45	16	8.7	22.5	79.9	83.1	42.4	85.8
35	Andorra	..	..	..	5.9	46.4	81.7	84.6	..	..
36	Poland	0.105	31	2	9.2	27.5	86.5	90.7	50.1	65.5
37	Latvia	0.142	39	18	10.5	30.0	99.8 [c]	99.3 [c]	55.6	67.9
37	Lithuania	0.098	30	9	9.7	28.4	95.5	97.9	58.8	67.7
39	Croatia	0.087	25	5	8.2	31.8	95.5 [d]	97.4 [d]	46.9	58.2
40	Qatar	0.212	54	8	6.9	4.4	81.8 [c]	71.4 [c]	61.7	95.3
40	Saudi Arabia	0.229	55	16	11.6	19.9	71.3	80.9	34.5	79.6
42	Portugal	0.076	21	12	7.1	37.0	59.7	61.9	54.7	63.1
43	San Marino	..	..	..	3.7	33.3	81.8 [e]	84.3 [e]	70.4	70.6
44	Chile	0.190	49	15	22.8	32.7	82.2	84.4	50.1	70.6
45	Slovakia	0.184	46	5	26.6	21.3	98.8 [c]	99.1 [c]	56.2	67.3
45	Türkiye	0.259	63	17	15.7	17.4	59.1 [c]	78.1 [c]	35.1	71.4
47	Hungary	0.230	56	15	21.9	14.1	97.6	98.8	53.7	67.8
48	Argentina	0.292	71	45	37.9	44.4	73.6 [d]	71.6 [d]	52.1	71.7
49	Kuwait	0.199	51	7	5.3	6.3	61.8 [c]	56.5 [c]	44.4	88.5
50	Montenegro	0.114	33	6	9.7	27.2	70.8 [c]	83.7 [c]	44.4	57.8
51	Saint Kitts and Nevis	..	..	..	36.8	31.3	..	..	..	..
52	Uruguay	0.240	60	19	35.2	26.9	62.5	59.3	55.7	71.4
53	Romania	0.230	56	10	35.4	18.9	89.4 [c]	94.0 [c]	42.3	62.0
54	Antigua and Barbuda	..	..	21	32.3	31.4	..	..	..	..
55	Brunei Darussalam	0.279	68	44	9.5	9.1	70.9	71.5	54.9	71.7
56	Russian Federation	0.178	43	14	14.5	17.8	98.3	98.9	55.5	70.3
57	Bahamas	0.333	79	77	25.1	20.0	86.8 [c]	90.0 [c]	69.0	73.9
57	Panama	0.392	95	50	68.5	22.5	67.6	65.6	49.7	77.0
59	Oman	0.267	66	17	9.7	9.9	93.3	98.7	35.0	83.8

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		Gender Inequality Index		SDG 3.1 Maternal mortality ratio	SDG 3.7 Adolescent birth rate	SDG 5.5 Share of seats in parliament	SDG 4.4 Population with at least some secondary education		Labour force participation rate[a]	
				(deaths per 100,000 live births)	(births per 1,000 women ages 15–19)	(% held by women)	(% ages 25 and older)		(% ages 15 and older)	
		Value	Rank				Female	Male	Female	Male
HDI RANK		2022	2022	2020	2022	2022	2022[b]	2022[b]	2022	2022
60	Georgia	0.283	69	28	29.7	19.0	98.2	98.7	55.5	73.5
60	Trinidad and Tobago	0.264	64	27	37.7	32.4	86.0 [d]	81.9 [d]	47.3	62.4
62	Barbados	0.289	70	39	41.9	32.7	95.7 [d]	86.3 [d]	58.2	65.1
63	Malaysia	0.202	52	21	9.1	14.5	76.1 [c]	79.2 [c]	55.1	80.5
64	Costa Rica	0.232	58	22	35.7	47.4	50.2	48.1	50.1	72.9
65	Serbia	0.119	36	10	14.4	36.6	89.9 [c]	96.1 [c]	51.0	66.1
66	Thailand	0.310	74	29	31.6	14.0	49.3 [c]	53.0 [c]	59.9	76.0
67	Kazakhstan	0.177	42	13	20.9	24.7	100.0 [c]	100.0 [c]	63.3	74.6
67	Seychelles	..	..	3	52.1	22.9	..	..	65.2	65.3
69	Belarus	0.096	29	1	11.2	34.7	98.4 [c]	99.5 [c]	65.8	75.3
High human development										
70	Bulgaria	0.206	53	7	38.2	24.2	94.9	96.5	50.6	63.1
71	Palau	..	..	..	42.1	6.9	96.9 [f]	97.3 [f]	59.8	73.6
72	Mauritius	0.369	87	84	24.0	20.0	66.5 [c]	72.4 [c]	42.2	68.4
73	Grenada	..	..	21	32.1	31.0	..	..	37.7	54.3
74	Albania	0.116	34	8	14.5	35.7	82.2 [d]	86.5 [d]	56.1	69.9
75	China	0.186	47	23	11.1	24.9	79.7 [d]	86.4 [d]	53.8	74.5
76	Armenia	0.198	50	27	18.3	35.5	96.0	97.1	62.8	71.8
77	Mexico	0.352	84	59	53.7	49.8	63.7	65.4	45.0	76.3
78	Iran (Islamic Republic of)	0.484	121	22	29.7	5.6	73.1 [c]	77.3 [c]	13.6	67.5
78	Sri Lanka	0.376	90	29	15.4	5.3	80.6	83.3	29.7	70.7
80	Bosnia and Herzegovina	0.148	40	6	9.4	17.5	82.7	94.0	41.1	61.8
81	Saint Vincent and the Grenadines	..	..	62	46.5	18.2	43.6 [g]	41.8 [g]	..	..
82	Dominican Republic	0.433	107	107	63.2	25.7	67.5	64.2	50.9	76.9
83	Ecuador	0.371	89	66	62.1	38.7	54.1	54.2	53.6	76.9
83	North Macedonia	0.134	38	3	16.1	41.7	61.9	75.1	42.2	64.1
85	Cuba	0.300	73	39	48.9	53.4	78.6 [c]	81.8 [c]	55.5	84.0
86	Moldova (Republic of)	0.156	41	12	27.2	40.6	96.3 [c]	98.1 [c]	71.5	73.7
87	Maldives	0.328	76	57	6.8	4.6	46.9 [d]	46.3 [d]	53.3	78.2
87	Peru	0.360	85	69	56.1	40.0	55.6	66.7	66.7	82.4
89	Azerbaijan	0.329	77	41	40.1	18.3	93.6 [c]	97.6 [c]	61.9	69.6
89	Brazil	0.391	94	72	43.6	17.5	67.4	65.0	53.8	73.6
91	Colombia	0.392	95	75	57.6	29.2	59.7	57.1	51.1	76.2
92	Libya	0.266	65	72	7.0	16.5	62.2 [h]	45.3 [h]	32.8	59.9
93	Algeria	0.460	114	78	11.6	7.0	42.9 [c]	46.8 [c]	17.6	65.5
94	Turkmenistan	..	..	5	21.2	25.7	98.1 [c]	98.4 [c]	..	..
95	Guyana	0.416	104	112	64.6	35.4	58.7 [d]	56.4 [d]	37.8	53.4
96	Mongolia	0.297	72	39	25.0	17.1	79.3	73.0	53.5	68.4
97	Dominica	..	..	..	37.9	34.4	..	..	..	..
98	Tonga	0.462	115	126	19.2	3.7	93.7 [d]	93.4 [d]	43.0	54.9
99	Jordan	0.449	111	41	24.9	13.3	77.4	84.2	13.8	60.7
100	Ukraine	0.188	48	17	15.2	20.3	95.7 [d]	93.5 [d]	47.8	62.9
101	Tunisia	0.237	59	37	6.6	26.3	40.0 [c]	47.2 [c]	29.3	71.8
102	Marshall Islands	..	..	..	57.5	6.1	91.6 [i]	92.5 [i]	37.3	61.2
102	Paraguay	0.429	106	71	69.9	16.8	54.3	53.3	59.1	82.4
104	Fiji	0.332	78	38	26.1	19.6	66.1	61.3	37.3	77.7
105	Egypt	0.389	93	17	43.6	22.8	85.9 [c]	78.7 [c]	15.3	69.1
106	Uzbekistan	0.242	61	30	15.7	29.1	100.0	100.0	39.9	73.1
107	Viet Nam	0.378	91	124	35.0	30.3	61.5 [c]	69.5 [c]	68.5	77.8
108	Saint Lucia	0.347	82	73	36.3	24.1	50.0 [c]	44.0 [c]	62.7	75.8
109	Lebanon	0.365	86	21	20.0	6.3	54.7 [j]	61.1 [g]	29.8	70.2
110	South Africa	0.401	99	127	60.9	45.4 [k]	83.0	84.9	50.8	63.5
111	Palestine, State of	..	..	20	42.9	..	67.9	67.6	18.6	70.7
112	Indonesia	0.439	109	173	32.9	21.9	51.0	58.2	52.5	81.5
113	Philippines	0.388	92	78	48.1	27.5	74.4 [c]	69.9 [c]	44.1	68.8
114	Botswana	0.483	120	186	48.3	11.1	92.1	92.5	60.1	69.7
115	Jamaica	0.350	83	99	32.0	31.0	74.8 [d]	67.0 [d]	56.0	69.9
116	Samoa	0.406	101	59	43.8	13.0	92.4 [l]	87.0 [l]	49.8	80.6
117	Kyrgyzstan	0.345	81	50	33.8	20.5	92.4 [c]	94.4 [c]	52.5	78.0
118	Belize	0.454	113	130	56.6	19.6	54.5	49.8	48.6	75.6

Continued →

HDI RANK		Gender Inequality Index Value	Gender Inequality Index Rank	SDG 3.1 Maternal mortality ratio (deaths per 100,000 live births)	SDG 3.7 Adolescent birth rate (births per 1,000 women ages 15–19)	SDG 5.5 Share of seats in parliament (% held by women)	SDG 4.4 Population with at least some secondary education (% ages 25 and older) Female	SDG 4.4 Population with at least some secondary education (% ages 25 and older) Male	Labour force participation rate[a] (% ages 15 and older) Female	Labour force participation rate[a] (% ages 15 and older) Male
		2022	2022	2020	2022	2022	2022[b]	2022[b]	2022	2022
Medium human development										
119	Venezuela (Bolivarian Republic of)	0.521	134	259	82.0	22.2[m]	81.0[d]	76.4[d]	45.2	70.6
120	Bolivia (Plurinational State of)	0.418	105	161	63.1	48.2	58.4	69.5	71.8	85.0
120	Morocco	0.440	110	72	25.5	21.4	31.9	37.9	19.8	69.6
122	Nauru	..	..	..	71.1	10.5	..	..	56.8	73.6
123	Gabon	0.524	136	227	89.8	18.1	70.4	55.3	34.7	56.2
124	Suriname	0.405	100	96	55.2	29.4	45.5[e]	42.3[e]	42.3	61.7
125	Bhutan	0.334	80	60	18.5	15.7	26.7[g]	34.3[g]	53.5	73.5
126	Tajikistan	0.269	67	17	44.9	26.6	93.6[d]	94.0[d]	33.3	52.1
127	El Salvador	0.369	87	43	54.5	27.4	42.7	51.4	46.4	77.7
128	Iraq	0.562	143	76	61.2	28.9	25.3[d]	40.4[d]	10.8	68.2
129	Bangladesh	0.498	127	123	73.3	20.9	43.7[c]	50.5[c]	39.2	81.4
130	Nicaragua	0.397	97	78	84.0	51.6	49.4[c]	40.3[c]	48.6	81.1
131	Cabo Verde	0.325	75	42	54.0	38.9	28.8[g]	31.7[g]	46.7	62.8
132	Tuvalu	..	..	..	31.7	6.3	58.1	58.5	20.0	29.6
133	Equatorial Guinea	..	..	212	136.4	27.0	..	..	..	..
134	India	0.437	108	103	16.3	14.6	41.0	58.7	28.3	76.1
135	Micronesia (Federated States of)	..	..	74	35.7	7.1	..	..	45.0	66.0
136	Guatemala	0.474	117	96	63.2	19.4	31.1[c]	37.8[c]	41.5	82.8
137	Kiribati	..	..	76	39.6	6.7	..	..	16.1	73.0
138	Honduras	0.413	102	72	71.3	27.3	34.8[c]	31.4[c]	49.6	81.1
139	Lao People's Democratic Republic	0.467	116	126	71.8	22.0	18.7[d]	30.4[d]	61.5	70.8
140	Vanuatu	..	..	94	63.2	1.9	..	..	26.7	36.4
141	Sao Tome and Principe	..	..	146	77.4	14.5	42.9[n]	52.8[n]	..	..
142	Eswatini (Kingdom of)	0.491	124	240	68.4	21.2	35.3	37.3	44.9	51.5
142	Namibia	0.450	112	215	63.1	35.6	42.1[d]	45.0[d]	54.1	61.2
144	Myanmar	0.479	119	179	32.8	15.0[m]	39.2[d]	49.9[d]	44.2	78.6
145	Ghana	0.512	130	263	63.4	14.5	59.1[d]	74.0[d]	72.1	73.1
146	Kenya	0.533	139	530	62.6	24.8	54.6	63.5	62.9	72.6
146	Nepal	0.495	126	174	63.4	33.8	26.0[d]	42.8[d]	27.9	55.0
148	Cambodia	0.486	122	218	45.7	19.3	16.4	29.0	73.7	85.8
149	Congo	0.572	144	282	101.2	15.9	32.1[d]	50.0[d]	44.1	63.9
150	Angola	0.520	133	222	135.8	33.6	21.3[g]	37.4[g]	74.7	78.2
151	Cameroon	0.555	142	438	108.6	31.1	24.5[d]	39.3[d]	66.8	76.8
152	Comoros	..	..	217	56.1	16.7	..	..	41.1	59.4
153	Zambia	0.526	137	135	116.1	15.1	33.7[d]	51.4[d]	54.2	66.4
154	Papua New Guinea	0.604	151	192	54.3	1.7	26.3[d]	37.5[d]	46.0	48.0
155	Timor-Leste	0.415	103	204	33.3	40.0	33.5[c]	39.8[c]	27.9	41.4
156	Solomon Islands	..	..	122	59.4	8.0	..	..	82.9	86.0
157	Syrian Arab Republic	0.487	123	30	38.1	11.2	24.1[j]	32.0[j]	14.4	68.9
158	Haiti	0.621	158	350	51.8	2.7[o]	28.0[d]	36.9[d]	48.8	66.0
159	Uganda	0.527	138	284	105.7	33.8	10.8[c]	20.4[c]	74.5	84.2
159	Zimbabwe	0.519	132	357	92.6	33.6	63.4[c]	73.6[c]	60.0	71.6
Low human development										
161	Nigeria	0.677	165	1,047	99.6	4.5	42.4	57.8	77.0	85.7
161	Rwanda	0.400	98	259	32.2	54.7	14.6	18.7	54.8	66.2
163	Togo	0.578	147	399	77.0	18.7	13.5[c]	33.1[c]	79.8	98.6
164	Mauritania	0.603	150	464	76.8	20.3	16.1[d]	27.6[d]	31.0	65.7
164	Pakistan	0.522	135	154	41.2	20.1	22.0[c]	26.9[c]	24.5	80.7
166	Côte d'Ivoire	0.612	156	480	103.3	15.6	13.5[d]	29.3[d]	54.5	71.2
167	Tanzania (United Republic of)	0.513	131	238	123.4	36.9	9.3[c]	14.3[c]	75.5	84.5
168	Lesotho	0.552	141	566	89.1	26.0	34.1[c]	29.7[c]	51.6	65.0
169	Senegal	0.505	129	261	64.6	44.2	9.2[c]	19.0[c]	39.3	68.4
170	Sudan	0.548	140	270	77.6	31.0[p]	17.0	20.4	28.0	69.1
171	Djibouti	..	..	234	22.7	26.2	..	..	18.2	48.1
172	Malawi	0.579	148	381	117.2	22.9	12.7	26.2	63.1	74.6
173	Benin	0.649	160	523	90.8	7.4	9.2[c]	21.5[c]	51.6	67.8
174	Gambia	0.585	149	458	60.7	8.6	26.0	40.7	59.0	64.5
175	Eritrea	..	..	322	63.6	22.0[o]	..	..	..	..
176	Ethiopia	0.494	125	267	66.5	38.9	7.5[c]	13.1[c]	57.6	79.2

Continued →

		Gender Inequality Index		SDG 3.1 Maternal mortality ratio	SDG 3.7 Adolescent birth rate	SDG 5.5 Share of seats in parliament	SDG 4.4 Population with at least some secondary education		Labour force participation rate[a]	
				(deaths per 100,000 live births)	(births per 1,000 women ages 15–19)	(% held by women)	(% ages 25 and older)		(% ages 15 and older)	
		Value	Rank				Female	Male	Female	Male
HDI RANK		2022	2022	2020	2022	2022	2022[b]	2022[b]	2022	2022
177	Liberia	0.656	161	652	122.0	9.7	19.7 [d]	45.8 [d]	43.5	50.1
177	Madagascar	0.574	145	392	118.1	17.8	15.9	21.2	78.8	88.9
179	Guinea-Bissau	0.631	159	725	85.8	13.7	10.9	24.6	52.1	66.1
180	Congo (Democratic Republic of the)	0.605	152	547	107.5	14.8	38.8 [c]	65.7 [c]	60.0	66.4
181	Guinea	0.609	154	553	112.2	29.6	7.5 [c]	20.0 [c]	44.6	67.0
182	Afghanistan	0.665	162	620	79.7	27.2 [m]	7.0	24.1	23.3	77.1
183	Mozambique	0.477	118	127	165.1	42.4	17.9	25.1	73.9	80.1
184	Sierra Leone	0.613	157	443	97.9	12.3	14.5 [c]	33.9 [c]	48.3	55.9
185	Burkina Faso	0.577	146	264	108.7	16.9	11.2 [c]	20.3 [c]	27.5	41.0
186	Yemen	0.820	166	183	52.5	0.3	23.7	38.2	5.8	64.7
187	Burundi	0.499	128	494	52.6	38.9	8.2 [c]	13.8 [c]	78.0	79.1
188	Mali	0.607	153	440	147.7	28.6	8.0	15.5	51.5	85.0
189	Chad	0.671	163	1,063	135.7	25.9	3.7 [c]	15.0 [c]	51.1	75.0
189	Niger	0.609	154	441	168.0	25.9	2.6 [c]	4.5 [c]	64.6	96.5
191	Central African Republic	..	..	835	159.0	12.9	14.2	31.8	..	..
192	South Sudan	..	..	1,223	97.4	32.3	26.5 [q]	36.4 [q]	..	..
193	Somalia	0.674	164	621	116.1	20.7	4.4	17.8	22.3	49.3
Other countries or territories										
	Korea (Democratic People's Rep. of)	..	..	107	2.4	17.6	..	..	..	..
	Monaco	..	..	..	6.9	33.3	..	..	39.5	56.6
Human development groups										
	Very high human development	0.150	—	15	13.5	29.3	87.7	90.1	54.0	69.4
	High human development	0.339	—	65	28.7	26.0	74.0	78.4	49.8	74.2
	Medium human development	0.476	—	152	37.8	23.0	40.5	55.6	34.2	75.7
	Low human development	0.579	—	497	88.3	24.0	21.3	31.9	50.8	77.5
Developing countries		0.485	—	235	45.9	24.3	56.8	65.4	44.9	75.3
Regions										
	Arab States	0.523	—	128	44.2	18.3	51.0	57.4	19.9	70.2
	East Asia and the Pacific	0.340	—	78	21.4	21.0	72.5	79.0	54.0	75.4
	Europe and Central Asia	0.224	—	21	19.5	26.0	83.7	89.9	45.4	69.6
	Latin America and the Caribbean	0.386	—	85	52.3	34.1	64.4	64.2	51.6	75.3
	South Asia	0.478	—	132	27.9	17.9	40.9	55.7	28.1	76.3
	Sub-Saharan Africa	0.565	—	516	99.3	26.4	30.9	42.0	63.9	76.4
Least developed countries		0.556	—	354	92.4	25.1	23.4	33.8	50.4	75.5
Small island developing states		0.457	—	203	50.6	27.0	58.8	62.3	51.4	69.8
Organisation for Economic Co-operation and Development		0.194	—	21	18.5	32.7	86.7	89.3	53.0	68.7
World		**0.462**	**—**	**215**	**41.9**	**26.2**	**64.1**	**71.0**	**46.8**	**73.9**

Notes

a	Updated by HDRO based on data from International Labour Organization (2023).
b	Data refer to 2022 or the most recent year available.
c	Updated by HDRO based on data from UNESCO Institute for Statistics (2023).
d	Updated by HDRO based on data from Barro and Lee (2018) and UNESCO Institute for Statistics (2023).
e	Refers to 2018 based on UNESCO Institute for Statistics (2023).
f	Refers to 2013 based on UNESCO Institute for Statistics (2023).
g	Updated by HDRO based on data from UNESCO Institute for Statistics (2023) and estimates using cross-country regression.
h	Updated by HDRO based on data from Barro and Lee (2018) and estimates using cross-country regression.
i	Refers to 2011 based on UNESCO Institute for Statistics (2023).
j	HDRO estimate based on data from Robert Barro and Jong-Wha Lee, ICF Macro Demographic and Health Surveys, the Organisation for Economic Co-operation and Development, United Nations Children's Fund (UNICEF) Multiple Indicator Cluster Surveys and the United Nations Educational, Scientific and Cultural Organization Institute for Statistics.
k	Excludes the 36 special rotating delegates appointed on an ad hoc basis.
l	Refers to 2019 based on UNESCO Institute for Statistics (2023).
m	Refers to 2021.
n	Updated by HDRO based on data from UNESCO Institute for Statistics (2023) and UNICEF Multiple Indicator Cluster Surveys for various years.
o	Refers to 2019.
p	Refers to 2018.
q	Refers to 2008 based on UNESCO Institute for Statistics (2023).

Definitions

Gender Inequality Index: A composite measure reflecting inequality in achievement between women and men in three dimensions: reproductive health, empowerment and the labour market. See *Technical note 4* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf for details on how the Gender Inequality Index is calculated.

Maternal mortality ratio: Number of deaths due to pregnancy-related causes per 100,000 live births.

Adolescent birth rate: Number of births to women ages 15–19 per 1,000 women ages 15–19.

Share of seats in parliament: Proportion of seats held by women in the national parliament expressed as a percentage of total seats. For countries with a bicameral legislative system, the share of seats is calculated based on both houses.

Population with at least some secondary education: Percentage of the population ages 25 and older that has reached (but not necessarily completed) a secondary level of education.

Labour force participation rate: Proportion of the working-age population (ages 15 and older) that engages in the labour market, either by working or actively looking for work, expressed as a percentage of the working-age population.

Main data sources

Column 1: HDRO calculations based on data in columns 3–9.

Column 2: Calculated based on data in column 1.

Column 3: WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division 2023.

Column 4: UNDESA 2022.

Column 5: IPU 2023.

Columns 6 and 7: Barro and Lee 2018, ICF Macro Demographic and Health Surveys, OECD 2023, UNESCO Institute for Statistics 2023 and UNICEF Multiple Indicator Cluster Surveys.

Columns 8 and 9: ILO 2023.

TABLE 6

Multidimensional Poverty Index: developing countries

Country	Multidimensional Poverty Index[a]		Population in multidimensional poverty[a]					Population in severe multidimensional poverty	Population vulnerable to multidimensional poverty[a]	Contribution of deprivation in dimension to overall multidimensional poverty[a]			Population living below monetary poverty line (%)	
			SDG 1.2										SDG 1.2	SDG 1.1
			Headcount			Intensity of deprivation	Inequality among the poor							
	Year and survey[b]			(thousands)						Health	Education	Standard of living	National poverty line	PPP $2.15 a day
	2011-2022	Value	(%)	In survey year	2021	(%)	Value	(%)	(%)	(%)	(%)	(%)	2011-2021[c]	2011-2021[c]
Estimates based on surveys for 2017–2022														
Albania	2017/2018 D	0.003	0.7	20	20	39.1	..[d]	0.1	5.0	28.3	55.1	16.7	21.8	0.0
Algeria	2018/2019 M	0.005	1.4	590	610	39.2	0.007	0.2	3.6	31.2	49.3	19.5	5.5	0.5
Argentina	2019/2020 M[e]	0.001[f]	0.4[f]	195[f]	196[f]	34.0[f]	..[d]	0.0[f]	1.6[f]	69.7[f]	21.4[f]	8.9[f]	42.0	1.0
Bangladesh	2019 M	0.104	24.6	40,784	41,730	42.2	0.010	6.5	18.2	17.3	37.6	45.1	24.3	13.5
Benin	2017/2018 D	0.368	66.8	7,976	8,682	55.0	0.025	40.9	14.7	20.8	36.3	42.9	38.5	19.9
Burundi	2016/2017 D	0.409[g]	75.1[g]	8,378[g]	9,426[g]	54.4[g]	0.022[g]	46.1[g]	15.8[g]	23.8[g]	27.2[g]	49.0[g]	64.9	65.1
Cambodia	2021/2022 D	0.070	16.6	2,791	2,761	42.3	0.009	4.1	20.5	21.5	48.0	30.5	17.7	..
Cameroon	2018 D	0.232	43.6	10,931	11,856	53.2	0.026	24.6	17.6	25.2	27.6	47.1	37.5	25.7
Central African Republic	2018/2019 M	0.461	80.4	4,189	4,388	57.4	0.025	55.8	12.9	20.2	27.8	52.0	..	..
Chad	2019 M	0.517	84.2	13,575	14,461	61.4	0.024	64.6	10.7	19.1	36.6	44.3	42.3	30.9
Congo (Democratic Republic of the)	2017/2018 M	0.331	64.5	56,187	61,869	51.3	0.020	36.8	17.4	23.1	19.9	57.0	63.9	69.7
Costa Rica	2018 M	0.002[f,h]	0.5[f,h]	27[f,h]	28[f,h]	37.1[f,h]	..[d]	0.0[f,h]	2.4[f,h]	40.5[f,h]	41.0[f,h]	18.5[f,h]	30.0	1.2
Cuba	2019 M	0.003[f]	0.7[f]	80[f]	80[f]	38.1[f]	..[d]	0.1[f]	2.7[f]	10.1[f]	39.8[f]	50.1[f]	..	..
Dominican Republic	2019 M	0.009	2.3	247	252	38.8	0.006	0.2	4.8	14.6	46.2	39.2	21.0	0.9
Ecuador	2018 N	0.008	2.1	356	372	38.0	0.004	0.1	5.9	33.9	27.3	38.8	33.0	3.6
Ethiopia	2019 D	0.367	68.7	78,443	82,679	53.3	0.022	41.9	18.4	14.0	31.5	54.5	23.5	27.0
Fiji	2021 M	0.006	1.5	14	14	38.1	..[d]	0.2	7.4	38.0	17.4	44.6	24.1	1.3
Gambia	2019/2020 D	0.198	41.7	1,074	1,101	47.5	0.016	17.3	28.0	32.7	33.0	34.3	48.6	17.2
Georgia	2018 M	0.001[f]	0.3[f]	13[f]	13[f]	36.6[f]	..[d]	0.0[f]	2.1[f]	47.1[f]	23.8[f]	29.1[f]	21.3	5.5
Ghana	2017/2018 M	0.111	24.6	7,606	8,089	45.1	0.014	8.4	20.1	23.6	30.5	45.9	23.4	25.2
Guinea	2018 D	0.373	66.2	8,313	8,960	56.4	0.025	43.5	16.4	21.4	38.4	40.3	43.7	13.8
Guinea-Bissau	2018/2019 M	0.341	64.4	1,269	1,327	52.9	0.021	35.9	20.0	19.1	35.0	45.8	47.7	21.7
Guyana	2019/2020 M	0.007[i]	1.8[i]	15[i]	15[i]	39.3[i]	0.007[i]	0.2[i]	6.5[i]	30.4[i]	22.4[i]	47.2[i]	..	..
Haiti	2016/2017 D	0.200	41.3	4,483	4,724	48.4	0.019	18.5	21.8	18.5	24.6	57.0	58.5	29.2
Honduras	2019 M	0.051	12.0	1,193	1,231	42.7	0.011	3.0	14.8	18.8	39.2	42.0	48.0	12.7
India	2019/2021 D	0.069	16.4	230,739	230,739	42.0	0.010	4.2	18.7	32.2	28.2	39.7	21.9	10.0
Indonesia	2017 D	0.014[j]	3.6[j]	9,572[j]	9,907[j]	38.7[j]	0.006[j]	0.4[j]	4.7[j]	34.7[j]	26.8[j]	38.5[j]	9.8	3.5
Iraq	2018 M	0.033	8.6	3,505	3,759	37.9	0.005	1.3	5.2	33.1	60.9	6.0	18.9	0.1
Jamaica	2018 N	0.011[k]	2.8[k]	78[k]	78[k]	38.9[k]	0.005[k]	0.2[k]	5.0[k]	52.2[k]	20.9[k]	26.9[k]	19.9	..
Jordan	2017/2018 D	0.002	0.4	45	48	35.4	..[d]	0.0	0.7	37.5	53.5	9.0	15.7	..
Kiribati	2018/2019 M	0.080	19.8	25	26	40.5	0.006	3.5	30.2	30.3	12.1	57.6	21.9	1.7
Kyrgyzstan	2018 M	0.001	0.4	24	26	36.3	..[d]	0.0	5.2	64.6	17.9	17.5	25.3	1.3
Lao People's Democratic Republic	2017 M	0.108	23.1	1,615	1,713	47.0	0.016	9.6	21.2	21.5	39.7	38.8	18.3	7.1
Lesotho	2018 M	0.084[h]	19.6[h]	431[h]	447[h]	43.0[h]	0.009[h]	5.0[h]	28.6[h]	21.9[h]	18.1[h]	60.0[h]	49.7	32.4
Liberia	2019/2020 D	0.259	52.3	2,662	2,717	49.6	0.018	24.9	23.3	19.7	28.6	51.7	50.9	27.6
Madagascar	2021 D	0.386	68.4	19,784	19,784	56.4	0.026	45.8	15.4	17.8	31.6	50.6	70.7	80.7
Malawi	2019/2020 M	0.231	49.9	9,666	9,922	46.3	0.012	17.5	27.5	18.6	25.5	55.9	50.7	70.1
Maldives	2016/2017 D	0.003	0.8	4	4	34.4	..[d]	0.0	4.8	80.7	15.1	4.2	5.4	0.0
Mali	2018 D	0.376	68.3	13,622	14,968	55.0	0.022	44.7	15.3	19.6	41.2	39.3	44.6	14.8
Mauritania	2019/2021 D	0.327	58.4	2,697	2,697	56.0	0.024	38.0	12.3	17.7	42.4	39.9	31.8	6.5
Mexico	2021 N	0.016[l,m]	4.1[l,m]	5,156[l,m]	5,156[l,m]	40.5[l,m]	0.007[l,m]	0.8[l,m]	3.5[l,m]	64.1[l,m]	13.6[l,m]	22.3[l,m]	43.9	3.1
Mongolia	2018 M	0.028[n]	7.3[n]	230[n]	243[n]	38.8[n]	0.004[n]	0.8[n]	15.5[n]	21.1[n]	26.8[n]	52.1[n]	27.8	0.7
Montenegro	2018 M	0.005	1.2	8	8	39.6	..[d]	0.1	2.9	58.5	22.3	19.2	22.6	2.8
Morocco	2017/2018 P	0.027[o]	6.4[o]	2,285[o]	2,358[o]	42.0[o]	0.012[o]	1.4[o]	10.9[o]	24.4[o]	46.8[o]	28.8[o]	4.8	1.4
Mozambique	2019/2020 N	0.372[k,p]	61.9[k,p]	19,310[k,p]	19,866[k,p]	60.0[k,p]	0.037[k,p]	43.0[k,p]	13.9[k,p]	27.3[k,p]	26.3[k,p]	46.4[k,p]	46.1	64.6
Nepal	2019 M	0.074	17.5	5,047	5,258	42.5	0.010	4.9	17.8	23.2	33.9	43.0	..	..
Nigeria	2021 M	0.175[j,q]	33.0[j,q]	70,516[j,q]	70,516[j,q]	52.9[j,q]	0.027[j,q]	18.1[j,q]	16.6[j,q]	19.5[j,q]	35.5[j,q]	45.0[j,q]	40.1	30.9
North Macedonia	2018/2019 M	0.001	0.4	8	8	38.2	..[d]	0.1	2.2	29.6	52.6	17.8	21.8	2.7
Pakistan	2017/2018 D	0.198	38.3	84,228	88,701	51.7	0.023	21.5	12.9	27.6	41.3	31.1	21.9	4.9
Palestine, State of	2019/2020 M	0.002	0.6	28	29	35.0	..[d]	0.0	1.3	62.9	31.0	6.1	29.2	0.5
Papua New Guinea	2016/2018 D	0.263[j]	56.6[j]	5,283[j]	5,634[j]	46.5[j]	0.016[j]	25.8[j]	25.3[j]	4.6[j]	30.1[j]	65.3[j]	..	..
Peru	2021 N	0.026	6.6	2,236	2,236	38.9	0.006	0.9	10.4	14.0	33.6	52.4	30.1	2.9
Philippines	2017 D	0.024[j]	5.8[j]	6,187[j]	6,600[j]	41.8[j]	0.010[j]	1.3[j]	7.3[j]	20.3[j]	31.0[j]	48.7[j]	16.7	3.0
Rwanda	2019/2020 D	0.231	48.8	6,418	6,572	47.3	0.014	19.7	22.7	19.0	26.6	54.4	38.2	52.0
Samoa	2019/2020 M	0.025	6.3	14	14	39.1	0.003	0.5	12.9	36.9	31.2	31.9	20.3	1.2
Sao Tome and Principe	2019 M	0.048	11.7	25	26	40.9	0.007	2.1	17.0	18.7	36.6	44.6	66.7	15.6
Senegal	2019 D	0.263	50.8	8,134	8,579	51.7	0.019	27.7	18.2	20.7	48.4	30.9	46.7	9.3
Serbia	2019 M	0.000[f,r]	0.1[f,r]	8[f,r]	8[f,r]	38.1[f,r]	..[d]	0.0[f,r]	2.1[f,r]	30.9[f,r]	40.1[f,r]	29.0[f,r]	21.7	1.6
Seychelles	2019 N	0.003[h,s]	0.9[h,s]	1[h,s]	1[h,s]	34.2[h,s]	..[d]	0.0[h,s]	0.4[h,s]	66.8[h,s]	32.1[h,s]	1.1[h,s]	25.3	0.5

Continued →

TABLE 6

			SDG 1.2										SDG 1.2	SDG 1.1
	Multidimensional Poverty Index[a]		Population in multidimensional poverty[a]							Contribution of deprivation in dimension to overall multidimensional poverty[a]			Population living below monetary poverty line (%)	
	Year and survey[b]		Headcount			Intensity of deprivation	Inequality among the poor	Population in severe multidimensional poverty	Population vulnerable to multidimensional poverty[a]	Health	Education	Standard of living	National poverty line	PPP $2.15 a day
				(thousands)										
Country	2011-2022	Value	(%)	In survey year	2021	(%)	Value	(%)	(%)	(%)	(%)	(%)	2011-2021[c]	2011-2021[c]
Sierra Leone	2019 D	0.293	59.2	4,765	4,987	49.5	0.019	28.0	21.3	23.0	24.1	53.0	56.8	26.1
Suriname	2018 M	0.011	2.9	17	17	39.4	0.007	0.4	4.0	20.4	43.8	35.8	..	..
Tajikistan	2017 D	0.029	7.4	664	726	39.0	0.004	0.7	20.1	47.8	26.5	25.8	26.3	6.1
Thailand	2019 M	0.002[f]	0.6[f]	412[f]	414[f]	36.7[f]	0.003[f]	0.0[f]	6.1[f]	38.3[f]	45.1[f]	16.7[f]	6.8	0.0
Togo	2017 M	0.180	37.6	2,954	3,252	47.8	0.016	15.2	23.8	20.9	28.1	50.9	45.5	28.1
Tonga	2019 M	0.003	0.9	1	1	38.1	..[d]	0.0	6.4	38.2	40.7	21.1	..	1.8
Tunisia	2018 M	0.003	0.8	94	97	36.5	..[d]	0.1	2.4	24.4	61.6	14.0	15.2	0.1
Turkmenistan	2019 M	0.001[h]	0.2[h]	15[h]	16[h]	34.0[h]	..[d]	0.0[h]	0.3[h]	82.4[h]	15.5[h]	2.1[h]	..	..
Tuvalu	2019/2020 M	0.008	2.1	0	0	38.2	0.002	0.0	12.2	36.5	43.6	20.0	..	..
Uzbekistan	2021/2022 M	0.006[j,t]	1.7[j,t]	599[j,t]	589[j,t]	35.3[j,t]	0.001[j,t]	0.0[j,t]	0.2[j,t]	94.5[j,t]	0.0[j,t]	5.5[j,t]	14.1	..
Viet Nam	2020/2021 M	0.008[j]	1.9[j]	1,871[j]	1,871[j]	40.3[j]	0.010[j]	0.4[j]	3.5[j]	22.9[j]	40.7[j]	36.4[j]	6.7	0.7
Zambia	2018 D	0.232	47.9	8,544	9,329	48.4	0.015	21.0	23.9	21.5	25.0	53.5	54.4	61.4
Zimbabwe	2019 M	0.110	25.8	3,961	4,126	42.6	0.009	6.8	26.3	23.6	17.3	59.2	38.3	39.8
Estimates based on surveys for 2011–2016														
Afghanistan	2015/2016 D	0.272[j]	55.9[j]	19,365[j]	22,420[j]	48.6[j]	0.020[j]	24.9[j]	18.1[j]	10.0[j]	45.0[j]	45.0[j]	54.5	..
Angola	2015/2016 D	0.282	51.1	14,899	17,633	55.3	0.024	32.5	15.5	21.2	32.1	46.8	32.3	31.1
Armenia	2015/2016 D	0.001[g]	0.2[g]	5[g]	5[g]	36.2[g]	..[d]	0.0[g]	2.8[g]	33.1[g]	36.8[g]	30.1[g]	26.5	0.5
Barbados	2012 M	0.009[k]	2.5[k]	7[k]	7[k]	34.2[k]	..[d]	0.0[k]	0.5[k]	96.0[k]	0.7[k]	3.3[k]	..	..
Belize	2015/2016 M	0.017	4.3	16	17	39.8	0.007	0.6	8.4	39.5	20.9	39.6	..	..
Bolivia (Plurinational State of)	2016 N	0.038	9.1	1,020	1,094	41.7	0.008	1.9	12.1	18.7	31.5	49.8	36.4	2.0
Bosnia and Herzegovina	2011/2012 M	0.008[k]	2.2[k]	80[k]	72[k]	37.9[k]	0.002[k]	0.1[k]	4.1[k]	79.7[k]	7.2[k]	13.1[k]	16.9	0.1
Botswana	2015/2016 N	0.073[u]	17.2[u]	405[u]	446[u]	42.2[u]	0.008[u]	3.5[u]	19.7[u]	30.3[u]	16.5[u]	53.2[u]	..	15.4
Brazil	2015 N[v]	0.016[f,j,v]	3.8[f,j,v]	7,883[f,j,v]	8,234[f,j,v]	42.5[f,j,v]	0.008[f,j,v]	0.9[f,j,v]	6.2[f,j,v]	49.8[f,j,v]	22.9[f,j,v]	27.3[f,j,v]	..	5.8
China	2014 N[w]	0.016[x,y]	3.9[x,y]	53,815[x,y]	55,396[x,y]	41.4[x,y]	0.005[x,y]	0.3[x,y]	17.4[x,y]	35.2[x,y]	39.2[x,y]	25.6[x,y]	0.0	0.1
Colombia	2015/2016 D	0.020[j]	4.8[j]	2,308[j]	2,497[j]	40.6[j]	0.009[j]	0.8[j]	6.2[j]	12.0[j]	39.5[j]	48.5[j]	39.3	6.6
Comoros	2012 D	0.181	37.3	255	306	48.5	0.020	16.1	22.3	20.8	31.6	47.6	42.4	18.6
Congo	2014/2015 M	0.112	24.3	1,229	1,416	46.0	0.013	9.4	21.3	23.4	20.2	56.4	40.9	35.4
Côte d'Ivoire	2016 M	0.236	46.1	11,155	12,659	51.2	0.019	24.5	17.6	19.6	40.4	40.0	39.5	11.4
Egypt	2014 D	0.020[g,h]	5.2[g,h]	5,008[g,h]	5,724[g,h]	37.6[g,h]	0.004[g,h]	0.6[g,h]	6.1[g,h]	40.0[g,h]	53.1[g,h]	6.9[g,h]	32.5	1.5
El Salvador	2014 M	0.032	7.9	488	496	41.3	0.009	1.7	9.9	15.5	43.4	41.1	26.2	3.6
Eswatini (Kingdom of)	2014 M	0.081	19.2	216	229	42.3	0.009	4.4	20.9	29.3	17.9	52.8	58.9	36.1
Gabon	2012 D	0.070[g]	15.6[g]	287[g]	365[g]	44.7[g]	0.013[g]	5.1[g]	18.4[g]	32.7[g]	21.4[g]	46.0[g]	33.4	2.5
Guatemala	2014/2015 D	0.134	28.9	4,621	5,086	46.2	0.013	11.2	21.1	26.3	35.0	38.7	59.3	9.5
Kazakhstan	2015 M	0.002[f,g]	0.5[f,g]	81[f,g]	87[f,g]	35.6[f,g]	..[d]	0.0[f,g]	1.8[f,g]	90.4[f,g]	3.1[f,g]	6.4[f,g]	5.2	0.0
Kenya	2014 D	0.171[g]	37.5[g]	17,176[g]	19,865[g]	45.6[g]	0.014[g]	12.4[g]	35.8[g]	23.5[g]	15.0[g]	61.5[g]	36.1	29.4
Libya	2014 P	0.007	2.0	122	135	37.1	0.003	0.1	11.4	39.0	48.6	12.4	..	..
Moldova (Republic of)	2012 M	0.004	0.9	33	29	37.4	..[d]	0.1	3.7	9.2	42.4	48.4	24.5	0.0
Myanmar	2015/2016 D	0.176	38.3	19,883	20,613	45.9	0.015	13.8	21.9	18.5	32.3	49.2	24.8	2.0
Namibia	2013 D	0.185[g]	40.9[g]	901[g]	1,034[g]	45.2[g]	0.013[g]	13.1[g]	19.2[g]	31.6[g]	13.9[g]	54.4[g]	17.4	15.6
Nicaragua	2011/2012 D	0.074[g]	16.5[g]	993[g]	1,128[g]	45.3[g]	0.013[g]	5.6[g]	13.4[g]	11.5[g]	36.2[g]	52.3[g]	24.9	3.9
Niger	2012 D	0.601[g]	91.0[g]	16,333[g]	22,973[g]	66.1[g]	0.026[g]	76.3[g]	4.9[g]	21.4[g]	36.7[g]	41.8[g]	40.8	50.6
Paraguay	2016 M	0.019	4.5	282	302	41.9	0.013	1.0	7.2	14.3	38.9	46.8	26.9	0.7
Saint Lucia	2012 M	0.007[k]	1.9[k]	3[k]	3[k]	37.5[k]	..[d]	0.0[k]	1.6[k]	69.5[k]	7.5[k]	23.0[k]	25.0	5.1
South Africa	2016 D	0.025	6.3	3,530	3,716	39.8	0.005	0.9	12.2	39.5	13.1	47.4	55.5	20.5
Sri Lanka	2016 N	0.011	2.9	626	636	38.3	0.004	0.3	14.3	32.5	24.4	43.0	4.1	1.0
Sudan	2014 M	0.279	52.3	19,363	23,892	53.4	0.023	30.9	17.7	21.1	29.2	49.8	..	15.3
Tanzania (United Republic of)	2015/2016 D	0.284[g]	57.1[g]	31,046[g]	36,288[g]	49.8[g]	0.016[g]	27.5[g]	23.4[g]	22.5[g]	22.3[g]	55.2[g]	26.4	44.9
Timor-Leste	2016 D	0.222[g]	48.3[g]	591[g]	637[g]	45.9[g]	0.014[g]	17.4[g]	26.8[g]	29.3[g]	23.1[g]	47.6[g]	41.8	24.4
Trinidad and Tobago	2011 M	0.002[f]	0.6[f]	9[f]	10[f]	38.0[f]	..[d]	0.1[f]	3.7[f]	45.5[f]	34.0[f]	20.5[f]	..	..
Uganda	2016 D	0.281[g]	57.2[g]	22,152[g]	26,214[g]	49.2[g]	0.017[g]	25.7[g]	23.6[g]	24.0[g]	21.6[g]	54.5[g]	20.3	42.2
Ukraine	2012 M	0.001[g,j]	0.2[g,j]	111[g,j]	106[g,j]	34.4[g,j]	..[d]	0.0[g,j]	0.4[g,j]	60.5[g,j]	28.4[g,j]	11.2[g,j]	1.6	0.0
Yemen	2013 D	0.245[g]	48.5[g]	13,078[g]	15,985[g]	50.6[g]	0.021[g]	24.3[g]	22.3[g]	29.0[g]	30.4[g]	40.6[g]	48.6	19.8
Developing countries	–	0.088	18.2	1,051,611	1,116,713	48.5	0.017	7.9	14.8	24.2	31.6	44.2	20.1	10.5
Regions														
Arab States	–	0.074	15.1	44,119	52,636	48.9	0.019	6.9	9.0	26.1	34.3	39.7	23.4	4.7
East Asia and the Pacific	–	0.022	5.1	102,302	105,845	42.4	0.008	0.9	14.4	28.1	35.8	36.1	3.8	0.8
Europe and Central Asia	–	0.004	1.2	1,671	1,713	37.1	0.003	0.1	2.5	66.7	16.5	16.8	12.2	0.7
Latin America and the Caribbean	–	0.024	5.6	31,712	33,258	43.1	0.011	1.5	6.5	33.5	27.6	38.9	37.9	4.9
South Asia	–	0.091	20.5	380,793	389,488	44.6	0.014	6.9	17.9	27.9	33.7	38.3	22.6	9.2
Sub-Saharan Africa	–	0.262	49.5	491,015	533,772	52.9	0.022	27.9	18.6	20.6	29.6	49.8	41.1	37.4

Notes

a Not all indicators were available for all countries, so caution should be used in cross-country comparisons. When an indicator is missing, weights of available indicators are adjusted to total 100 percent. See *Technical note 5* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf for details.

b *D* indicates data from Demographic and Health Surveys, *M* indicates data from Multiple Indicator Cluster Surveys, *N* indicates data from national surveys and *P* indicates data from Pan Arab Population and Family Health Surveys (see https://hdr.undp.org/mpi-2023-faqs and *Methodological Note 55* at https://ophi.org.uk/mpi-methodological-note-55/ for the list of national surveys).

c Data refer to the most recent year available during the period specified.

d Value is not reported because it is based on a small number of multidimensionally poor people.

e Urban areas only.

f Considers child deaths that occurred at any time because the survey did not collect the date of child deaths.

g Revised estimate from the 2020 MPI.

h Missing indicator on cooking fuel.

i Revised estimate from the 2022 MPI based on the survey microdata update.

j Missing indicator on nutrition.

k Missing indicator on child mortality.

l Child mortality data were not used because the data were collected from a sample of women ages 15–49 that was not representative of the female population in that age group.

m Anthropometric data were collected from all children under age 5 and from selected individuals who are age 5 or older. Construction of the nutrition indicator was restricted to children under age 5 since the anthropometric sample is representative of the under 5 population.

n Indicator on sanitation follows the national classification in which pit latrine with slab is considered unimproved.

o Following the national report, latrines are considered an improved source for the sanitation indicator.

p Some 235 households were present in the individual datafile but not in the asset datafile. It is assumed that these households owned zero relevant assets.

q The analytical sample was restricted to the Multiple Indicator Cluster Survey sample, and its sample weight was used, because child mortality information was not collected for the National Immunization Coverage Survey sample.

r Because of the high proportion of children excluded from nutrition indicators due to measurements not being taken, estimates based on the 2019 Serbia Multiple Indicator Cluster Survey should be interpreted with caution. The unweighted sample size used for the multidimensional poverty calculation is 82.8 percent.

s Missing indicator on school attendance.

t The analytical sample was restricted to the round 2 sample because standard of living questions were not collected for the round 1 sample.

u Captures only deaths of children under age 5 who died in the last five years and deaths of children ages 12–18 years who died in the last two years.

v The methodology was adjusted to account for missing indicator on nutrition and incomplete indicator on child mortality (the survey did not collect the date of child deaths).

w Based on the version of data accessed on 7 June 2016.

x Given the information available in the data, child mortality was constructed based on deaths that occurred between surveys—that is, between 2012 and 2014. Child deaths reported by an adult man in the household were taken into account because the date of death was reported.

y Missing indicator on housing.

Definitions

Multidimensional Poverty Index: Proportion of the population that is multidimensionally poor adjusted by the intensity of the deprivations. See *Technical note 5* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf for details on how the Multidimensional Poverty Index is calculated.

Multidimensional poverty headcount: Population with a deprivation score of at least 33.3 percent. It is expressed as a share of the population in the survey year, the number of multidimensionally poor people in the survey year and the projected number of multidimensionally poor people in 2021.

Intensity of deprivation of multidimensional poverty: Average deprivation score experienced by people in multidimensional poverty.

Inequality among the poor: Variance of individual deprivation scores of poor people. It is calculated by subtracting the deprivation score of each multidimensionally poor person from the intensity, squaring the differences and dividing the sum of the weighted squares by the number of multidimensionally poor people.

Population in severe multidimensional poverty: Percentage of the population in severe multidimensional poverty—that is, those with a deprivation score of 50 percent or more.

Population vulnerable to multidimensional poverty: Percentage of the population at risk of suffering multiple deprivations—that is, those with a deprivation score of 20–33.3 percent.

Contribution of deprivation in dimension to overall multidimensional poverty: Percentage of the Multidimensional Poverty Index attributed to deprivations in each dimension.

Population living below national poverty line: Percentage of the population living below the national poverty line, which is the poverty line deemed appropriate for a country by its authorities. National estimates are based on population-weighted subgroup estimates from household surveys.

Population living below PPP $2.15 a day: Percentage of the population living below the international poverty line of $2.15 (in 2017 purchasing power parity [PPP] terms) a day.

Main data sources

Column 1: Refers to the year and the survey whose data were used to calculate the country's Multidimensional Poverty Index value and its components.

Columns 2–12: HDRO and OPHI calculations based on data on household deprivations in health, education, and standard of living from various surveys listed in column 1 using the methodology described in *Technical note 5* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf. Columns 4 and 5 also use population data from UNDESA (2022).

Columns 13 and 14: World Bank 2022.

TABLE 7

Planetary pressures–adjusted Human Development Index

HDI RANK		Human Development Index (HDI)	Planetary pressures–adjusted HDI (PHDI)			Adjustment factor for planetary pressures	Carbon dioxide emissions per capita (production) (SDG 9.4)	Carbon dioxide emissions (production) index	Material footprint per capita (SDG 8.4, 12.2)	Material footprint index
		Value	Value	Difference from HDI value[a] (%)	Difference from HDI rank[a]	Value	(tonnes)	Value	(tonnes)	Value
		2022	2022	2022	2022	2022	2021	2021	2022	2022
Very high human development										
1	Switzerland	0.967	0.826	14.6	-6	0.854	4.1	0.946	33.6	0.761
2	Norway	0.966	0.808	16.4	-12	0.837	7.6	0.901	32.1	0.772
3	Iceland	0.959	0.806	16.0	-14	0.841	9.5	0.876	27.4	0.805
4	Hong Kong, China (SAR)	0.956	..	..	..	..	4.4	0.943	..	..
5	Denmark	0.952	0.839	11.9	2	0.881	5.1	0.934	24.2	0.828
5	Sweden	0.952	0.839	11.9	2	0.881	3.7	0.952	26.7	0.811
7	Germany	0.950	0.833	12.3	1	0.876	8.1	0.894	19.9	0.859
7	Ireland	0.950	0.814	14.3	-4	0.857	7.5	0.902	26.3	0.813
9	Singapore	0.949	0.745	21.5	-38	0.785	9.4	0.877	43.2	0.694
10	Australia	0.946	0.763	19.3	-29	0.807	14.9	0.805	26.9	0.809
10	Netherlands	0.946	0.796	15.9	-12	0.842	8.0	0.896	29.8	0.788
12	Belgium	0.942	0.803	14.8	-8	0.852	8.2	0.892	26.5	0.811
12	Finland	0.942	0.787	16.5	-12	0.835	6.9	0.911	33.9	0.760
12	Liechtenstein	0.942	..	..	..	..	3.7	0.951	..	..
15	United Kingdom	0.940	0.846	10.0	12	0.900	5.2	0.933	18.7	0.868
16	New Zealand	0.939	0.814	13.3	4	0.867	6.7	0.913	25.2	0.821
17	United Arab Emirates	0.937	0.688	26.6	-58	0.735	25.3	0.669	28.2	0.800
18	Canada	0.935	0.726	22.4	-40	0.776	14.1	0.816	37.2	0.736
19	Korea (Republic of)	0.929	0.775	16.6	-16	0.835	11.9	0.845	24.7	0.825
20	Luxembourg	0.927	0.685	26.1	-58	0.739	13.2	0.828	49.2	0.651
20	United States	0.927	0.740	20.2	-30	0.798	14.9	0.805	29.3	0.792
22	Austria	0.926	0.789	14.8	-2	0.852	7.4	0.903	28.0	0.801
22	Slovenia	0.926	0.832	10.2	14	0.898	6.2	0.920	17.4	0.877
24	Japan	0.920	0.809	12.1	10	0.879	8.5	0.889	18.5	0.869
25	Israel	0.915	0.780	14.8	-7	0.852	6.2	0.920	30.2	0.785
25	Malta	0.915	0.806	11.9	6	0.881	3.1	0.960	28.0	0.801
27	Spain	0.911	0.839	7.9	23	0.921	4.8	0.937	13.3	0.906
28	France	0.910	0.823	9.6	17	0.905	4.8	0.938	18.1	0.872
29	Cyprus	0.907	0.803	11.5	8	0.886	5.6	0.926	21.8	0.845
30	Italy	0.906	0.825	8.9	20	0.910	5.7	0.926	14.8	0.895
31	Estonia	0.899	0.766	14.8	-8	0.852	7.8	0.898	27.3	0.806
32	Czechia	0.895	0.782	12.6	3	0.874	9.2	0.880	18.6	0.868
33	Greece	0.893	0.809	9.4	19	0.906	5.5	0.928	16.2	0.885
34	Bahrain	0.888	0.673	24.2	-54	0.758	26.1	0.660	20.3	0.856
35	Andorra	0.884	..	..	..	..	4.6	0.940	..	..
36	Poland	0.881	0.780	11.5	3	0.885	8.6	0.887	16.5	0.883
37	Latvia	0.879	0.782	11.0	7	0.890	3.9	0.950	23.9	0.830
37	Lithuania	0.879	0.748	14.9	-10	0.851	5.0	0.935	32.8	0.767
39	Croatia	0.878	0.807	8.1	21	0.920	4.3	0.944	14.8	0.895
40	Qatar	0.875	0.450	48.6	-108	0.514	39.9	0.479	63.6	0.548
40	Saudi Arabia	0.875	0.690	21.1	-35	0.789	17.6	0.771	27.1	0.808
42	Portugal	0.874	0.807	7.7	24	0.924	3.9	0.949	14.3	0.898
43	San Marino	0.867	..	..	..	..	..	..	..	..
44	Chile	0.860	0.786	8.6	16	0.914	4.6	0.940	15.8	0.888
45	Slovakia	0.855	0.776	9.2	9	0.907	6.5	0.916	14.2	0.899
45	Türkiye	0.855	0.783	8.4	15	0.916	5.3	0.930	13.8	0.902
47	Hungary	0.851	0.769	9.6	8	0.904	5.0	0.935	17.9	0.873
48	Argentina	0.849	0.782	7.9	17	0.921	4.2	0.945	14.5	0.897
49	Kuwait	0.847	0.580	31.5	-68	0.685	24.3	0.683	44.0	0.688
50	Montenegro	0.844	..	..	..	..	3.7	0.952	..	..
51	Saint Kitts and Nevis	0.838	..	..	..	..	4.7	0.939	..	..
52	Uruguay	0.830	0.784	5.5	21	0.945	2.4	0.969	11.2	0.921
53	Romania	0.827	0.759	8.2	6	0.917	4.0	0.948	16.0	0.887
54	Antigua and Barbuda	0.826	..	..	..	..	6.4	0.916	..	..
55	Brunei Darussalam	0.823	0.576	30.0	-69	0.700	25.4	0.669	37.8	0.731
56	Russian Federation	0.821	0.725	11.7	-8	0.883	11.8	0.846	11.4	0.919
57	Bahamas	0.820	0.744	9.3	3	0.907	5.1	0.933	16.7	0.882
57	Panama	0.820	0.773	5.7	16	0.943	2.7	0.965	11.1	0.921
59	Oman	0.819	0.593	27.6	-55	0.724	15.7	0.795	49.0	0.652

Continued →

HDI RANK		Human Development Index (HDI)	Planetary pressures–adjusted HDI (PHDI)			Adjustment factor for planetary pressures	SDG 9.4 Carbon dioxide emissions per capita (production)	Carbon dioxide emissions (production) index	SDG 8.4, 12.2 Material footprint per capita	Material footprint index
		Value	Value	Difference from HDI value[a] (%)	Difference from HDI rank[a]	Value	(tonnes)	Value	(tonnes)	Value
		2022	2022	2022	2022	2022	2021	2021	2022	2022
60	Georgia	0.814	0.767	5.8	17	0.942	2.9	0.962	10.9	0.922
60	Trinidad and Tobago	0.814	..	..	..	..	23.3	0.696	..	..
62	Barbados	0.809	..	..	..	..	4.4	0.943	..	..
63	Malaysia	0.807	0.704	12.8	-11	0.872	8.3	0.892	20.8	0.852
64	Costa Rica	0.806	0.763	5.3	17	0.947	1.5	0.981	12.2	0.913
65	Serbia	0.805	0.732	9.1	3	0.909	6.0	0.921	14.5	0.897
66	Thailand	0.803	0.750	6.6	14	0.934	3.7	0.951	11.8	0.916
67	Kazakhstan	0.802	0.688	14.2	-15	0.858	13.3	0.827	15.6	0.889
67	Seychelles	0.802	..	..	..	..	6.2	0.919	..	..
69	Belarus	0.801	..	..	..	..	6.4	0.917	..	..
High human development										
70	Bulgaria	0.799	0.720	9.9	0	0.901	6.1	0.920	16.5	0.883
71	Palau	0.797	..	..	..	..	12.3	0.839	..	..
72	Mauritius	0.796	..	..	..	..	3.1	0.959	..	..
73	Grenada	0.793	..	..	..	..	2.6	0.965	..	..
74	Albania	0.789	0.747	5.3	15	0.947	1.7	0.978	11.7	0.917
75	China	0.788	0.679	13.8	-22	0.862	8.0	0.896	24.3	0.828
76	Armenia	0.786	0.752	4.3	20	0.957	2.5	0.967	7.4	0.948
77	Mexico	0.781	0.734	6.0	13	0.939	3.7	0.952	10.3	0.927
78	Iran (Islamic Republic of)	0.780	0.715	8.3	3	0.917	7.8	0.898	8.9	0.937
78	Sri Lanka	0.780	0.762	2.3	24	0.976	0.9	0.988	5.0	0.965
80	Bosnia and Herzegovina	0.779	0.710	8.9	3	0.911	6.1	0.920	13.9	0.901
81	Saint Vincent and the Grenadines	0.772	..	..	..	..	2.3	0.970	..	..
82	Dominican Republic	0.766	0.732	4.4	14	0.956	2.1	0.972	8.5	0.940
83	Ecuador	0.765	0.733	4.2	17	0.958	2.2	0.971	7.7	0.945
83	North Macedonia	0.765	0.715	6.5	7	0.935	3.7	0.952	11.6	0.917
85	Cuba	0.764	0.740	3.1	22	0.968	1.9	0.976	5.6	0.960
86	Moldova (Republic of)	0.763	0.731	4.2	16	0.958	1.8	0.976	8.5	0.939
87	Maldives	0.762	..	..	..	..	3.3	0.957	..	..
87	Peru	0.762	0.733	3.8	21	0.962	1.7	0.978	7.8	0.945
89	Azerbaijan	0.760	0.719	5.4	13	0.946	3.7	0.951	8.3	0.941
89	Brazil	0.760	0.702	7.6	7	0.924	2.3	0.970	17.1	0.879
91	Colombia	0.758	0.725	4.4	18	0.957	1.9	0.976	8.8	0.937
92	Libya	0.746	0.661	11.4	-19	0.886	9.5	0.876	14.6	0.896
93	Algeria	0.745	0.702	5.8	11	0.942	4.1	0.947	8.7	0.938
94	Turkmenistan	0.744	0.662	11.0	-15	0.890	11.0	0.856	10.7	0.924
95	Guyana	0.742	..	..	..	..	4.4	0.942	..	..
96	Mongolia	0.741	0.619	16.5	-23	0.836	11.4	0.851	25.3	0.820
97	Dominica	0.740	..	..	..	..	2.1	0.973	..	..
98	Tonga	0.739	..	..	..	..	1.8	0.976	..	..
99	Jordan	0.736	0.706	4.1	16	0.960	2.0	0.973	7.6	0.946
100	Ukraine	0.734	0.685	6.7	5	0.934	4.8	0.937	9.8	0.930
101	Tunisia	0.732	0.701	4.2	14	0.957	2.9	0.962	6.7	0.952
102	Marshall Islands	0.731	..	..	..	..	3.6	0.953	..	..
102	Paraguay	0.731	0.684	6.4	4	0.936	1.4	0.982	15.4	0.891
104	Fiji	0.729	..	..	..	..	1.2	0.985	..	..
105	Egypt	0.728	0.695	4.5	14	0.955	2.3	0.971	8.4	0.940
106	Uzbekistan	0.727	0.696	4.3	16	0.958	3.4	0.955	5.6	0.960
107	Viet Nam	0.726	0.681	6.2	5	0.938	3.6	0.953	10.8	0.924
108	Saint Lucia	0.725	..	..	..	..	2.6	0.966	..	..
109	Lebanon	0.723	0.680	5.9	5	0.940	4.2	0.945	9.2	0.935
110	South Africa	0.717	0.667	7.0	-1	0.930	7.2	0.906	6.7	0.953
111	Palestine, State of	0.716	0.695	2.9	19	0.970	0.7	0.991	7.1	0.949
112	Indonesia	0.713	0.685	3.9	14	0.960	2.2	0.971	7.0	0.950
113	Philippines	0.710	0.687	3.2	16	0.968	1.3	0.984	6.8	0.952
114	Botswana	0.708	0.677	4.4	8	0.956	2.4	0.969	8.0	0.943
115	Jamaica	0.706	0.676	4.2	8	0.957	2.3	0.969	7.7	0.945
116	Samoa	0.702	..	..	..	..	1.2	0.985	..	..
117	Kyrgyzstan	0.701	0.683	2.6	14	0.975	1.4	0.981	4.4	0.968
118	Belize	0.700	0.668	4.6	7	0.954	1.8	0.977	9.8	0.931

Continued →

HDI RANK		Human Development Index (HDI)	Planetary pressures–adjusted HDI (PHDI)			Adjustment factor for planetary pressures	SDG 9.4 Carbon dioxide emissions per capita (production)	Carbon dioxide emissions (production) index	SDG 8.4, 12.2 Material footprint per capita	Material footprint index
		Value	Value	Difference from HDI value[a] (%)	Difference from HDI rank[a]	Value	(tonnes)	Value	(tonnes)	Value
		2022	2022	2022	2022	2022	2021	2021	2022	2022
Medium human development										
119	Venezuela (Bolivarian Republic of)	0.699	0.664	5.0	5	0.950	2.5	0.967	9.4	0.934
120	Bolivia (Plurinational State of)	0.698	0.662	5.2	4	0.948	1.8	0.977	11.3	0.920
120	Morocco	0.698	0.672	3.7	10	0.963	2.0	0.974	6.8	0.952
122	Nauru	0.696	..	..	..	..	4.3	0.944	..	..
123	Gabon	0.693	0.667	3.8	10	0.963	2.5	0.967	5.9	0.958
124	Suriname	0.690	..	..	..	..	6.0	0.922	..	..
125	Bhutan	0.681	0.615	9.7	-3	0.903	1.4	0.982	24.7	0.824
126	Tajikistan	0.679	0.664	2.2	10	0.978	1.0	0.987	4.4	0.969
127	El Salvador	0.674	0.649	3.7	5	0.963	1.2	0.985	8.2	0.942
128	Iraq	0.673	0.643	4.5	5	0.956	3.9	0.949	5.2	0.963
129	Bangladesh	0.670	0.656	2.1	8	0.980	0.6	0.992	4.6	0.967
130	Nicaragua	0.669	0.642	4.0	6	0.959	0.8	0.990	10.0	0.929
131	Cabo Verde	0.661	..	..	..	..	1.0	0.988	..	..
132	Tuvalu	0.653	..	..	..	..	1.0	0.987	..	..
133	Equatorial Guinea	0.650	0.624	4.0	5	0.960	3.4	0.955	5.0	0.964
134	India	0.644	0.625	3.0	7	0.971	1.9	0.975	4.8	0.966
135	Micronesia (Federated States of)	0.634	..	..	..	..	1.4	0.982	..	..
136	Guatemala	0.629	0.604	4.0	3	0.960	1.1	0.985	9.1	0.935
137	Kiribati	0.628	..	..	..	..	0.5	0.993	..	..
138	Honduras	0.624	0.606	2.9	5	0.972	1.1	0.986	6.1	0.957
139	Lao People's Democratic Republic	0.620	0.580	6.5	-3	0.936	3.1	0.959	12.2	0.914
140	Vanuatu	0.614	..	..	..	..	0.7	0.991	..	..
141	Sao Tome and Principe	0.613	..	..	..	..	0.7	0.991	..	..
142	Eswatini (Kingdom of)	0.610	..	..	..	..	0.9	0.988	..	..
142	Namibia	0.610	0.584	4.3	1	0.958	1.5	0.981	9.2	0.935
144	Myanmar	0.608	0.596	2.0	6	0.980	0.7	0.991	4.5	0.968
145	Ghana	0.602	0.586	2.7	4	0.974	0.6	0.992	6.1	0.957
146	Kenya	0.601	0.590	1.8	6	0.982	0.5	0.994	4.4	0.969
146	Nepal	0.601	0.581	3.3	3	0.967	0.5	0.993	8.5	0.940
148	Cambodia	0.600	0.572	4.7	-2	0.953	1.2	0.984	10.9	0.923
149	Congo	0.593	0.580	2.2	4	0.979	1.2	0.984	3.7	0.974
150	Angola	0.591	0.581	1.7	7	0.984	0.5	0.993	3.7	0.974
151	Cameroon	0.587	0.577	1.7	3	0.983	0.4	0.995	4.0	0.972
152	Comoros	0.586	..	..	..	..	0.5	0.993	..	..
153	Zambia	0.569	0.561	1.4	1	0.987	0.4	0.994	3.0	0.979
154	Papua New Guinea	0.568	0.558	1.8	1	0.983	0.8	0.990	3.4	0.976
155	Timor-Leste	0.566	..	..	..	..	0.5	0.993	..	..
156	Solomon Islands	0.562	..	..	..	..	0.4	0.994	..	..
157	Syrian Arab Republic	0.557	..	..	..	..	1.3	0.983	..	..
158	Haiti	0.552	0.546	1.1	1	0.989	0.2	0.997	2.7	0.981
159	Uganda	0.550	0.543	1.3	1	0.987	0.1	0.998	3.3	0.977
159	Zimbabwe	0.550	0.541	1.6	0	0.983	0.5	0.993	3.7	0.973
Low human development										
161	Nigeria	0.548	0.539	1.6	-1	0.983	0.6	0.992	3.7	0.974
161	Rwanda	0.548	0.541	1.3	2	0.987	0.1	0.998	3.4	0.976
163	Togo	0.547	0.541	1.1	4	0.989	0.3	0.996	2.5	0.982
164	Mauritania	0.540	0.520	3.7	-1	0.964	1.0	0.987	8.4	0.940
164	Pakistan	0.540	0.528	2.2	1	0.979	1.0	0.987	4.2	0.970
166	Côte d'Ivoire	0.534	..	..	..	..	0.4	0.994	..	..
167	Tanzania (United Republic of)	0.532	0.525	1.3	2	0.986	0.2	0.997	3.4	0.976
168	Lesotho	0.521	..	..	..	..	1.1	0.986	..	..
169	Senegal	0.517	0.503	2.7	0	0.973	0.7	0.991	6.3	0.955
170	Sudan	0.516	0.506	1.9	2	0.982	0.5	0.994	4.3	0.970
171	Djibouti	0.515	0.493	4.3	-1	0.956	0.4	0.995	11.5	0.918
172	Malawi	0.508	0.501	1.4	2	0.986	0.1	0.999	3.8	0.973
173	Benin	0.504	0.494	2.0	2	0.980	0.6	0.992	4.5	0.968
174	Gambia	0.495	0.489	1.2	1	0.988	0.3	0.996	2.9	0.979
175	Eritrea	0.493	0.487	1.2	1	0.988	0.2	0.997	3.1	0.978
176	Ethiopia	0.492	0.485	1.4	1	0.986	0.2	0.998	3.7	0.974

Continued →

TABLE 7

HDI RANK		Human Development Index (HDI)	Planetary pressures–adjusted HDI (PHDI)			Adjustment factor for planetary pressures	SDG 9.4 Carbon dioxide emissions per capita (production)	Carbon dioxide emissions (production) index	SDG 8.4, 12.2 Material footprint per capita	Material footprint index
		Value	Value	Difference from HDI value[a] (%)	Difference from HDI rank[a]	Value	(tonnes)	Value	(tonnes)	Value
		2022	2022	2022	2022	2022	2021	2021	2022	2022
177	Liberia	0.487	0.482	1.0	0	0.991	0.2	0.998	2.3	0.984
177	Madagascar	0.487	0.483	0.8	1	0.992	0.1	0.998	2.0	0.986
179	Guinea-Bissau	0.483	..	..	..	..	0.2	0.998	..	..
180	Congo (Democratic Republic of the)	0.481	0.477	0.8	1	0.992	0.0	0.999	2.1	0.985
181	Guinea	0.471	0.462	1.9	1	0.981	0.4	0.995	4.6	0.967
182	Afghanistan	0.462	0.459	0.6	1	0.994	0.3	0.996	1.2	0.992
183	Mozambique	0.461	0.456	1.1	1	0.988	0.2	0.997	2.9	0.980
184	Sierra Leone	0.458	0.452	1.3	1	0.988	0.1	0.998	3.2	0.977
185	Burkina Faso	0.438	0.433	1.1	0	0.990	0.3	0.997	2.5	0.983
186	Yemen	0.424	0.420	0.9	0	0.992	0.4	0.995	1.7	0.988
187	Burundi	0.420	0.417	0.7	0	0.994	0.1	0.999	1.6	0.989
188	Mali	0.410	0.404	1.5	0	0.986	0.3	0.996	3.3	0.977
189	Chad	0.394	0.382	3.0	-2	0.969	0.1	0.998	8.3	0.941
189	Niger	0.394	0.389	1.3	0	0.987	0.1	0.998	3.5	0.975
191	Central African Republic	0.387	0.383	1.0	1	0.989	0.0	0.999	3.1	0.978
192	South Sudan	0.381	0.376	1.3	0	0.986	0.2	0.998	3.6	0.975
193	Somalia	0.380	0.376	1.1	1	0.988	0.0	1.000	3.2	0.977
Other countries or territories										
..	Korea (Democratic People's Rep. of)	..	..	..	..	..	2.0	0.974	..	..
..	Monaco	..	..	..	..	..	..	..	..	..
Human development groups										
	Very high human development	0.902	0.779	13.6	—	0.863	9.5	0.876	21.0	0.851
	High human development	0.764	0.691	9.6	—	0.904	5.5	0.928	16.9	0.880
	Medium human development	0.640	0.622	2.8	—	0.972	1.6	0.979	5.0	0.964
	Low human development	0.517	0.509	1.5	—	0.985	0.4	0.994	3.5	0.975
Developing countries		0.694	0.652	6.1	—	0.940	3.5	0.955	10.6	0.924
Regions										
	Arab States	0.704	0.658	6.5	—	0.935	4.6	0.940	10.0	0.929
	East Asia and the Pacific	0.766	0.683	10.8	—	0.891	6.2	0.919	19.3	0.863
	Europe and Central Asia	0.802	0.743	7.4	—	0.927	5.3	0.931	10.9	0.923
	Latin America and the Caribbean	0.763	0.716	6.2	—	0.939	2.6	0.966	12.4	0.912
	South Asia	0.641	0.622	3.0	—	0.970	1.9	0.975	4.9	0.965
	Sub-Saharan Africa	0.549	0.539	1.8	—	0.982	0.7	0.991	3.8	0.973
Least developed countries		0.542	0.533	1.7	—	0.984	0.4	0.995	3.8	0.973
Small island developing states		0.730	..	..	—	..	2.7	0.965	..	..
Organisation for Economic Co-operation and Development		0.906	0.787	13.1	—	0.869	8.7	0.887	21.0	0.851
World		**0.739**	**0.685**	**7.3**	**—**	**0.926**	**4.5**	**0.941**	**12.5**	**0.911**

Notes

a Based on countries for which a Planetary pressures-adjusted Human Development Index value is calculated.

Definitions

Human Development Index (HDI): A composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge and a decent standard of living. See *Technical note 1* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf for details on how the HDI is calculated.

Planetary pressures-adjusted HDI (PHDI): HDI value adjusted by the level of carbon dioxide emissions and material footprint per capita to account for the excessive human pressure on the planet. It should be seen as an incentive for transformation. See *Technical note 6* at http://hdr.undp.org/sites/default/files/hdr2023_technical_notes.pdf for details on how the PHDI is calculated.

Difference from HDI value: Percentage difference between the PHDI value and the HDI value, calculated only for countries for which a PHDI value is calculated.

Difference from HDI rank: Difference in ranks on the PHDI and the HDI, calculated only for countries for which a PHDI value is calculated.

Adjustment factor for planetary pressures: Arithmetic average of the carbon dioxide emissions index and the material footprint index, both defined below. A high value implies less pressure on the planet.

Carbon dioxide emissions per capita (production): Carbon dioxide emissions produced as a consequence of human activities (use of coal, oil and gas for combustion and industrial processes, gas flaring and cement manufacture), divided by midyear population. Values are territorial emissions, meaning that emissions are attributed to the country in which they physically occur.

Carbon dioxide emissions (production) index: Carbon dioxide emissions per capita (production-based) expressed as an index with a minimum value of 0 and a maximum value of 76.61 tonnes per capita. A high value on this index implies less pressure on the planet.

Material footprint per capita: Material footprint is the attribution of global material extraction to a country's domestic final demand. Total material footprint is the sum of the material footprint for biomass, fossil fuels, metal ores and nonmetal ores. This indicator is calculated as the raw material equivalent of imports plus domestic extraction minus raw material equivalents of exports, divided by annual average population.

Material footprint index: Material footprint per capita expressed as an index with a minimum value of 0 and a maximum value of 140.82 tonnes per capita. A high value on this index implies less pressure on the planet.

Main data sources

Column 1: HDRO calculations based on data from Barro and Lee (2018), IMF (2023), UNDESA (2022, 2023), UNESCO Institute for Statistics (2023), United Nations Statistics Division (2023) and World Bank (2023).

Column 2: Calculated as the product of the HDI and the adjustment factor presented in column 5.

Column 3: Calculated based on data in columns 1 and 2.

Column 4: Calculated based on PHDI values and recalculated HDI ranks for countries for which a PHDI value is calculated.

Column 5: Calculated based on data in columns 7 and 9.

Column 6: Global Carbon Project 2023.

Column 7: Calculated based on data in column 6.

Column 8: United Nations Environment Programme 2023.

Column 9: Calculated based on data in column 8.

Developing regions

Arab States (20 countries or territories)
Algeria, Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, State of Palestine, Oman, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, Yemen

East Asia and the Pacific (26 countries)
Brunei Darussalam, Cambodia, China, Fiji, Indonesia, Kiribati, Democratic People's Republic of Korea, Lao People's Democratic Republic, Malaysia, Marshall Islands, Federated States of Micronesia, Mongolia, Myanmar, Nauru, Palau, Papua New Guinea, Philippines, Samoa, Singapore, Solomon Islands, Thailand, Timor-Leste, Tonga, Tuvalu, Vanuatu, Viet Nam

Europe and Central Asia (17 countries)
Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Montenegro, North Macedonia, Serbia, Tajikistan, Türkiye, Turkmenistan, Ukraine, Uzbekistan

Latin America and the Caribbean (33 countries)
Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Plurinational State of Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Bolivarian Republic of Venezuela

South Asia (9 countries)
Afghanistan, Bangladesh, Bhutan, India, Islamic Republic of Iran, Maldives, Nepal, Pakistan, Sri Lanka

Sub-Saharan Africa (46 countries)
Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Democratic Republic of the Congo, Côte d'Ivoire, Equatorial Guinea, Eritrea, Kingdom of Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, South Sudan, United Republic of Tanzania, Togo, Uganda, Zambia, Zimbabwe

Note: All countries listed in developing regions are included in aggregates for developing countries. Countries included in aggregates for Least Developed Countries and Small Island Developing States follow UN classifications, which are available at https://www.un.org/ohrlls/. Countries included in aggregates for Organisation for Economic Co-operation and Development are listed at http://www.oecd.org/about/membersandpartners/list-oecd-member-countries.htm.

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Note: Statistical references relate to statistical material presented in this Statistical Annex and in the full set of statistical tables posted at https://hdr.undp.org/en/human-development-report-2023-24.

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Leaving No One Behind In An Ageing World

World Social Report 2023

DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS

WORLD SOCIAL REPORT 2023: LEAVING NO ONE BEHIND IN AN AGEING WORLD

United Nations

DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS

The Department of Economic and Social Affairs of the United Nations Secretariat is a vital interface between global policies in the economic, social and environmental spheres and national action. The Department works in three main interlinked areas: (i) it compiles, generates and analyses a wide range of economic, social and environmental data and information on which States Members of the United Nations draw to review common problems and to take stock of policy options; (ii) it facilitates the negotiations of Member States in many intergovernmental bodies on joint courses of action to address ongoing or emerging global challenges; and (iii) it advises interested Governments on the ways and means of translating policy frameworks developed in United Nations conferences and summits into programmes at the country level and, through technical assistance, helps build national capacities.

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FOREWORD

Our world is changing in fundamental ways. One key trend is the gradual and largely irreversible shift towards an older population, already underway in most countries.

The number of persons aged 65 years or older worldwide is expected to double over the next three decades, reaching 1.6 billion in 2050, when older people will account for more than 16 per cent of the global population.

People are living longer, healthier lives. The rise in human longevity is a success story caused by improved sanitation and medical therapies, greater access to education and family planning, and strides towards gender equality and women's empowerment.

This shift in the population age structure brings into question current arrangements of old-age support in countries both young and old. As the health and wealth of societies continue to improve, traditional notions of dependency at older ages are becoming less and less valid. Yet, effective systems of old-age support will continue to be needed, as will the intergenerational solidarity required to sustain them.

Not everyone has benefitted to the same extent from the social and economic improvements that drive longevity.

High and rising levels of inequality threaten to become a defining feature of present and future generations. Due to a combination of acute crises and unfavourable long-term trends in employment and wages, successive generations are increasingly unequal and economically insecure in both developed and developing countries despite ongoing improvements in health and education. Without swift and bold policy action to counter this trend, future cohorts of older persons may be even more economically unequal than those alive today. But rising inequality is not inevitable, and policy makers can influence the future direction of inequality as populations continue to live longer.

The *World Social Report 2023* explores the social and economic opportunities and challenges that population ageing presents. As Governments come together to mark the twentieth anniversary of the Madrid International Plan of Action on Ageing, the *Report* builds on the Plan's framework of support to national policies to create equitable, fair and inclusive societies for people of all ages.

Policies to promote healthy ageing, prevent poverty and foster employment and opportunities for decent work before people reach older ages are vital to enhance economic security and reduce inequality among older persons. Taking advantage of the skills, expertise and knowledge of older persons, women, and other groups that have traditionally been excluded from or disadvantaged in the labour market can go a long way towards promoting equity and ensuring that old-age support systems are fiscally sustainable.

A key message of the *World Social Report 2023* is that population ageing and policies implemented in response to this historic global trend can be harnessed to uphold the pledge contained in the 2030 Agenda for Sustainable Development that no one will be left behind. Together, we can address today's inequalities for the benefit of tomorrow's generations, managing the challenges and capitalizing on the opportunities that population ageing brings.

Questions of intergenerational equity in an ageing world need to take centre stage as the world prepares for the Sustainable Development Goals Summit in 2023 and the Summit of the Future in 2024. Now is the time to plan for the long term, to prepare for the challenges ahead and take advantage of the new opportunities these demographic shifts bring. It is the time to strengthen solidarity between younger and older people today and between present and future generations.

LI Junhua

Under-Secretary-General for Economic and Social Affairs
United Nations

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EXPLANATORY NOTES

The following symbols have been used in tables throughout the report:

A hyphen (-) between years, for example, 1990-1991, signifies the full period involved, including the beginning and end years.
A full stop (.) is used to indicate decimals.

A dollars sign ($) indicates United States dollars, unless otherwise stated.

Details and percentages in tables do not necessarily add to totals, because of rounding.

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United Nations Official Document System. United Nations documentation obtained from other United Nations and non-United Nations sources are for informational purposes only. The Organization does not make any warranties or representations as to the accuracy or completeness of such materials.

The following abbreviations have been used:

Economic Commission for Latin America and the Caribbean (ECLAC)

Gross Domestic Product (GDP)

International Labour Organization (ILO)

International Organization for Migration (IOM)

International Monetary Fund (IMF)

Luxembourg Income Survey (LIS)

Organisation for Economic Co-operation and Development (OECD)

Purchasing power parity (PPP)

Sustainable Development Goals (SDGs)

United Nations Conference on Trade and Development (UNCTAD)

United Nations Children's Fund (UNESCO)

World Health Organization (WHO)

NOTES ON REGIONS, DEVELOPMENT GROUPS, COUNTRIES AND AREAS

The designations employed in this publication and the material presented in it do not imply the expression of any opinions whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The term "country" as used in this report also refers, as appropriate, to territories or areas.

In this publication, data for countries and areas are often aggregated in six continental regions: Africa, Asia, Europe, Latin America and the Caribbean, Northern America, and Oceania. Further information on continental regions is available from https://unstats.un.org/unsd/methodology/m49/. Countries and areas have also been grouped into geographic regions based on the classification being used to track progress towards the Sustainable Development Goals of the United Nations (see https://unstats.un.org/sdgs/indicators/regional-groups/).

The designation of "developing" and "developed", is intended for statistical purposes and does not express a judgment about the stage in the development process reached by a particular country or area. Developed regions comprise all countries and areas of Europe and Northern America, plus Australia, New Zealand and Japan.

Developing regions comprise all countries and areas of Africa, Asia (excluding Japan), Latin America and the Caribbean, and Oceania (excluding Australia and New Zealand). Further information is available at https://www.un.org/ohrlls/content/about-us.

The classification of countries and areas by income level is based on gross national income (GNI) per capita as reported by the World Bank. These income groups are not available for all countries and areas. Further information is available at https://datahelpdesk.worldbank.org/knowledgebase/topics/19280-country-classification.

EXECUTIVE SUMMARY

Population ageing is a defining global trend of our time. People are living longer, and more are older than ever before. Spectacular improvements in health and survival and reductions in fertility have driven this momentous shift, which has begun or is expected to begin soon in all countries and areas. This change brings both challenges and opportunities as countries strive to achieve the Sustainable Development Goals (SDGs).

In 2022, the world marked the twentieth anniversary of the adoption of the Madrid International Plan of Action on Ageing. To commemorate this landmark, the *World Social Report 2023* explores the economic and social implications of the ageing of the human population. It builds on the Plan of Action's framework for national policies to create equitable, inclusive societies for people of all ages, providing recommendations to put the rights and well-being of older persons at the centre, across the life course.

Population ageing is an inevitable result of the demographic transition towards longer lives and smaller families. While the shift towards older populations is largely irreversible, collective actions and policy decisions shape its path and consequences. Postponing critical measures that allow societies to benefit from and adapt to population ageing would impose high social, economic, fiscal and health-related costs, for both current and future generations. By contrast, with appropriate foresight and planning, Governments can manage the challenges from population ageing while enhancing opportunities for all people to thrive and ensuring that no one is left behind.

As elaborated in this report, population ageing needs to be widely understood as more than just a set of discrete concerns mainly for one group of people who have advanced beyond a given age. Ageing touches all parts of economies and societies, from health care and education to employment and taxation. Each stage of life can contribute to or detract from well-being at older ages.

AN AGEING WORLD IS A SUCCESS STORY

Population ageing signals our extraordinary collective success in improving living conditions for billions of people around the world. Better sanitation and medical therapies, greater access to education and family planning, and strides towards gender equality and women's empowerment have all contributed to, and in some cases benefitted from, the steady move from high to low levels of fertility and mortality. These advances have ushered in an era where rapid population growth is slowly coming to an end, accompanied by a gradual but permanent shift towards older ages. Over several decades, both the number and population share of older persons have risen globally, while the number and share of children and youth have begun to shrink. By 2050, the number of persons aged 65 years or older is expected to double, surpassing 1.6 billion.

Currently, population ageing is furthest along in Europe and Northern America, Australia and New Zealand, and most of Eastern and South-Eastern Asia. In most countries of those regions, the proportion of older persons – by convention, those aged 65 years or older – exceeds 10 per cent and in some cases 20 per cent of the total population. Most parts of sub-Saharan Africa and Oceania (excluding Australia and New Zealand) are still in an early stage of this transition, while most countries in Central and Southern Asia, Western Asia and Northern Africa, and Latin America and the Caribbean are at an intermediate stage.

Declining mortality throughout the life course has driven the increase of life expectancy at birth in most countries and globally. Greater longevity has accompanied a narrowing of the age range in which most deaths occur. In the past, death was common at all ages. Many children died from infectious diseases, for example, and women frequently perished in childbirth. In most countries today, "premature death" before age 60 or 70 is relatively rare.

Greater global life expectancy reflects underlying improvements in health. In countries with available data, the number of years lived in good health has climbed, accounting for most of the increase in years lived overall. Statistical averages hide broad disparities in life expectancy, however, including by sex and socioeconomic status. In almost all societies, women live longer than men on average, and the rich longer than the poor. These differences stem partly from poor nutrition and exposures to environmental and occupational hazards that are more common among men and people with limited income and education.

In 2020, the World Health Organization and the United Nations designated 2021-2030 as the Decade of Healthy Ageing. Its purpose is to promote strategies, grounded in solid evidence, that support well-being among older people. It advocates for developing and maintaining functional abilities, recognizing that these depend on each individual's intrinsic capacity, the surrounding environment and interactions between the two. The Decade builds on the Madrid International Plan of Action on Ageing and aligns with the timing of the Sustainable Development Goals.

POPULATION AGEING BRINGS ECONOMIC REWARDS AND CHALLENGES

Levels of economic production and consumption vary over the life course. Typically, people in the middle phases of life produce more than they consume, generating a surplus to provide for their dependent children and others who rely on them for support and contributing towards economic security for themselves at older ages. The demographic transition includes first an increase and then a decrease in the share of working-age people in the total population. The initial increase occurs following a sustained reduction in fertility, which lowers the portion of children and youth in the population. The subsequent decrease in the relative size of the working-age population is driven by rapid growth in the proportion of older persons.

When the share of working-age people is growing, countries have a window of opportunity to jumpstart more rapid economic gains. Reaping this "demographic dividend", however, depends on maintaining or expanding investments in education and health, and on generating opportunities for productive employment and decent work as rapidly growing numbers of young people enter the workforce.

While consumption and production patterns change as people age, older people make important economic and social contributions at all stages of the demographic transition. Many continue paid employment. Within families, older people often provide financial support to other family members or assistance with childcare. Standard demographic indicators – such as the old-age dependency ratio – do not account for these factors, however (box 1). Further, many older people still encounter obstacles that limit their contributions. Age-based discrimination in the labour market, for instance, undercuts their full participation in the economy.

Older persons should have the option of continuing to work for as long as they desire and are able to do so. Nevertheless, the ability to work and generate income wanes sooner or later at advanced ages. As populations grow older, questions arise around how to support rising numbers of older people in the face of escalating pension, health-care and long-term care costs, particularly if equitable and sustainable systems are not in place to distribute resources among age groups.

The means of financing goods and services for older persons differ across countries. In more developed regions, public transfer systems, including pensions and health care, provide over two thirds of the consumption by older persons. In less developed regions, older persons tend to work longer and rely more on accumulated assets or family assistance. Countries at all stages of population ageing should take proactive and forward-looking measures to adapt and innovate in their labour markets and pension and health-care systems to ensure that support for older persons is both adequate and fiscally sustainable.

Lower fertility opens doors for families and societies to invest more in the education of children. Higher levels of personal savings in anticipation of a longer life can spur capital accumulation, increased productivity and faster economic growth. This period can continue as long as the savings are invested productively.

BOX 1

FINDING BETTER WAYS TO MEASURE POPULATION AGEING AND AGE-RELATED DEPENDENCY

There are different approaches to measuring population ageing and levels of age-related dependency. Two commonly used measures are: first, the size of the population aged 65 years or older as a proportion of the total population, and second, the old-age dependency ratio. The latter compares the size of the older population to that of the working-age population. By defining age groups in a chronological and static manner, however, the old-age dependency ratio does not consider changes over time in the health and activity levels of older persons or their diverse capabilities. In addition, by including older persons but omitting children and young people in calculating the ratio, the measure provides an incomplete picture of age-related dependency over the life course.

Some alternative measures could remedy these shortcomings. The total dependency ratio, for instance, includes both younger and older age groups. Another measure, the economic old-age dependency ratio, reflects not only the age distribution of a population but also variations over the age range in levels of labour income and consumption. Another set of indicators shifts the focus from the time elapsed since birth to the time remaining until death.

Some studies have demonstrated that the need for health care and social support at older ages is often closely linked to a person's remaining years of life. Where life spans are increasing, analyses and forecasts of ageing-related social and economic costs that are based on the expected time until death can provide relevant and useful information about the likely fiscal impacts of ongoing demographic changes.

PATHS TO OLDER AGES ARE UNEQUAL

Although the improvements in health and survival that drive the growth of older populations have been broadly shared, not everyone benefits equally. Many of today's older persons are in excellent health. Others live with multiple ailments or severe disability. Some are economically active and enjoy income security, but many live in poverty. Population averages conceal the vast inequalities and diverse needs and abilities of older people.

Inequality starts early in life. Without policies to prevent it, disadvantages reinforce one another throughout peoples' lives, leading to gaping disparities at older ages. Education and employment consistently emerge as primary determinants of health and economic outcomes at every stage of life, including at older ages. Moreover, health and employment are closely intertwined. Poor health can negatively affect employment opportunities, while the type of work that people do, the conditions in which they work and whether they have a job in the first place impacts their physical and mental health.

This report highlights the importance of country-specific conditions and policies to reduce inequality throughout people's lives, guided by some broad parameters. In general, countries with comprehensive social protection systems and universally accessible essential services, including for education and health care, have been much more successful at mitigating income inequality and reducing poverty at older ages than those without such systems. In both developed and developing countries, older persons are more likely to live in poor households than working-age people. Nevertheless, the gap in levels of poverty between older and working-age populations is much larger in developing regions where social protection systems and services are less well established and often far from comprehensive.

Inequalities evolve over the life course and vary from one generation to the next. Today's youth are healthier and better educated than prior generations. Moving forward, they are expected to be healthier and to live longer on average. Education levels are likely to continue increasing despite disruptions caused by the COVID-19 pandemic. At the same time, young people today face great uncertainty and economic insecurity in the transition to adulthood. Profound changes in the world of work are affecting job stability and disrupting income security.

Growing disparities in the labour market will likely result in higher levels of inequality as people age. For most countries with available data, income inequality has risen from one 10-year birth cohort to the next at almost all ages in both developed and developing regions. This rise may spur widening disparities in health and life expectancy among future cohorts of older persons. Moreover, widespread informal employment and the increased prevalence of other precarious forms of work threaten access to adequate pensions and other social protection benefits, putting economic security at risk for large numbers of older persons. Without remedial action, there is a significant risk that standards of living at older ages will become increasingly unequal.

GENDER DISPARITIES DRIVE UNEQUAL AGEING

Poverty levels at older ages are typically higher among women. Lower levels of participation in formal labour markets, shorter working careers and lower wages compared to men leave many women struggling with greater economic insecurity later in life. Given women's longer life expectancies, older women are more likely than older men to be widowed, less likely to remarry and more likely to live alone – three features that can exacerbate economic insecurity.

Women also bear the brunt of deficiencies in caregiving. The unequal distribution of care and domestic work within families curtails women's working lives and constricts pension incomes. In the labour market, women make up most caregivers, working in both the informal and formal sectors of a poorly regulated care economy where workers typically earn low wages. At the end of their lives, older women are more likely to need long-term care because they live longer and are at greater risk of age-related disabilities than their male counterparts.

Gender equality requires rebalancing care duties within families and adopting family and labour policies that enable women and men to manage both domestic responsibilities and market employment. Such changes will foster women's labour force participation, strengthening the productive capacity of economies as populations grow older. Yet increased participation in the labour market will not be sufficient on its own. Substantial improvement in women's economic security throughout the life course, including at older ages, depends on eliminating gender disparities in education and ensuring access to decent work for both women and men. Bringing care work more consistently into the formal economy would create decent jobs and expand employment opportunities for women.

LONG-TERM CARE NEEDS ARE SOARING

Demand for long-term care is soaring in many countries as the population of older persons grows larger, especially at ages 80 and higher. Traditionally, co-habiting family members, usually unpaid women and girls, met the care needs of older persons. Intergenerational co-residence is declining in both developed and developing countries, however. Care models that rely exclusively or primarily on families are increasingly inadequate.

So far, public spending in most countries has not been sufficient to cover the growing demand for long-term care. The average expenditure by countries of the Organisation for Economic Co-operation and Development (OECD) was 1.5 per cent of GDP in 2019, down from 1.7 per cent in 2017. Insufficient funding means caregivers are undervalued, underpaid and inadequately trained and often work in difficult conditions. A shortage of well-trained caregivers leads to poor quality care. Many countries, even wealthy ones, continue to rely on informal services by paid or unpaid caregivers.

The COVID-19 pandemic exposed existing weaknesses in health care for older persons, especially long-term care, and demonstrated how such weaknesses can aggravate inequalities. Poor quality and underfunded systems of care, insufficient provisions for care at home, low wages and precarious conditions for paid care workers, and a lack of reliable protocols to prevent COVID-19 transmission within health facilities contributed to a heavy death toll among older persons. The crisis underlined the imperative for fundamental reforms of long-term care.

Those who deliver unpaid or poorly compensated care to older persons provide critical services. Yet their contributions are not adequately recognized. Governments can close this gap by developing integrated long-term care strategies that build on appropriate regulation, training and support for caregivers and mechanisms such as accreditation and monitoring to ensure quality. Instituting compulsory public insurance can free individuals from burdensome out-of-pocket costs for long-term care. Promoting formal employment for care workers and improving their working conditions can help meet the demand for quality care. Rethinking approaches to long-term care will benefit not only today's older persons and those who care for them but also future generations of older persons and their caregivers.

LEAVING NO ONE BEHIND IN AN AGEING WORLD REQUIRES POLICY ACTION NOW

This report highlights two sets of actions to build societies for all people at all ages. The first set can be taken throughout people's lifetimes to promote labour market participation and increased productivity, uphold good health and prevent poverty. The second set consists of policies to reduce inequality and promote economic security at older ages in a fiscally sustainable manner, taking into account both pensions and health care.

ADDRESSING THE ROOT CAUSES OF DISADVANTAGE AMONG OLDER PEOPLE STARTS AT BIRTH

Giving every person an equal chance to grow older in good health and with economic security begins with promoting equal access to opportunities from birth. All children should be able to develop and advance their capabilities, including through quality education and health care. Education should not stop after childhood or young adulthood, given rapidly evolving technologies and labour markets. Opportunities for continued learning and skills development throughout the life course help workers to adapt to shifts in labour demand, to use new technologies more effectively and to increase their productivity over time.

Improved education can raise labour productivity and reduce poverty and inequality but only when coupled with realistic prospects for decent work. Job creation matters but so does the quality of the work. Employment in the informal sector is often characterized by low worker productivity, limited access to social protection programmes and marginal contributions to public revenues. At the same time, decades of wage stagnation jeopardize the ability of low-wage workers to save for old age.

Increasing investment in the institutions of work – from regulations and employment contracts to collective agreements, labour inspection mechanisms and comprehensive social protection systems – will accelerate pathways to formalization, boost productivity and, above all, strengthen the social contract in an ageing world. Formalizing large informal sectors will take time, however. Throughout this transition, countries should progressively extend the coverage of social protection systems to all workers in the informal economy.

The world of work begins at home. Reducing the burdens of domestic care work, which fall disproportionately on women and impede their equal participation in the workforce, should be a central objective of employment and social policies. From parental leave to investment in public childcare services and dependent child tax credits, policies can foster the equitable sharing of unpaid care work and promote equal opportunities for women in the paid workplace.

Population ageing also reinforces the impetus for international investments so that countries with large working-age populations, including many in Africa, can attract much-needed capital. Such capital flows can boost labour productivity and wages and foster more rapid economic growth worldwide. Realizing the historic opportunity created by a rapidly growing pool of workers and a large market size also calls for transformative economic and structural reforms to encourage foreign direct investment and technological diffusion. In tandem, countries must invest in raising educational levels and ensuring that school curricula cultivate skills that people can use to gain a secure footing in the labour market.

IMPROVING THE LIVES OF OLDER PERSONS CALLS FOR ADEQUATE PENSIONS

Countries at advanced stages of population ageing may struggle with concerns about the sustainability of public expenditures, particularly for health care and pensions. Yet some proposed pension system reforms intended to ensure fiscal sustainability can, when applied across the board, negatively affect income security among low-income earners.

Most public pension systems have not kept up with changes in employment patterns, especially the growing insecurity of low-paying jobs. COVID-19 and earlier crises have exposed the risks of cutting public transfers across the board. This report proposes measures to improve sustainability while maintaining or increasing the role of pensions in reducing inequality. It also warns against shifting the financial risks associated with pension funds onto individuals or moving away from collective risk-sharing.

Countries without comprehensive social protection systems should focus on extending pension coverage, providing adequate benefits and financing public pension systems to reach target 1.3 of the SDGs.[1] Although there is no one-size-fits-all route to increased pension coverage, three actions can help to ensure the financial well-being of all older persons. The first is to encourage private savings and

1 The aim of target 1.3 is "to implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable".

improve financial literacy. The second is to introduce or expand tax-funded pension schemes so that all older persons maintain a basic level of income security. The third is to strengthen the institutions of work, as discussed in the previous section.

A critical factor in extending pension coverage and guaranteeing adequacy is funding. In most countries, it is possible to increase public revenues without intensifying the tax burden on low-income workers or the middle class. With an understanding of how population ageing may impact different categories of taxes, Governments can adopt forward-looking reforms to prepare for and address foreseeable fiscal pressures. For many developing countries, a top priority should be to improve their capacity for generating tax revenues, including by promoting transitions from informal to formal employment, combating tax evasion and strengthening tax administration. Such efforts need to be supported by effective and inclusive international cooperation on tax issues.

As populations age, all countries will face the challenge of providing adequate pensions and care for older persons while ensuring the long-term fiscal sustainability of current support systems. In this context, the fact that future generations of older people may be more unequal and economically insecure must be considered. Pension systems must be fiscally viable yet reforms weakening their redistributive power will jeopardize the well-being of growing numbers of older persons. If such reforms are seen as ineffective, they may also undermine the capacity of States to maintain pension systems.

It is also important to put inequalities across age groups and generations into perspective. Although these certainly require policy attention and action by Governments, discussions of sustainability and fairness to future generations should be cast in the broader context of the large and persistent divide separating rich and poor today, both within and among countries.

PUTTING AGEING AT THE CENTRE

As this report goes to press, the world continues to suffer from destabilizing shocks with profound impacts on health, economic prosperity and social welfare. After more than two years of the COVID-19 crisis, the war in Ukraine is upending a fragile social and economic recovery. Multiple humanitarian crises are erupting amid rising costs of living everywhere. Climate change looms large, inflicting severe and unprecedented droughts and floods, further stressing the global food supply and threatening the survival of many.

The *World Social Report 2023*, including its analysis and review of policy options to address population ageing, is intended to provide world leaders with information and policy guidance as they chart a path forward and renew commitments to achieving the SDGs. Rebuilding after multiple crises and advancing implementation of the 2030 Agenda for Sustainable Development hinge on wide-ranging and comprehensive policy responses at the national and multilateral levels. Leaders of all countries should recognize that these need to give a central emphasis to managing the challenges of population ageing while making the most of its opportunities.

WORLD SOCIAL REPORT 2023: LEAVING NO ONE BEHIND IN AN AGEING WORLD

INTRODUCTION

We live in a world of rapid social and economic change. People in the twenty-first century have and will continue to have, on average, a noticeably different life experience compared to earlier generations. Amid abundant change and diversity in the human condition, there are nevertheless common features of life in all human societies and similar changes affecting all populations, including a shift in population age structure towards older ages.

The long-term process of population ageing has begun, or is expected to begin soon, in all countries and areas of the world

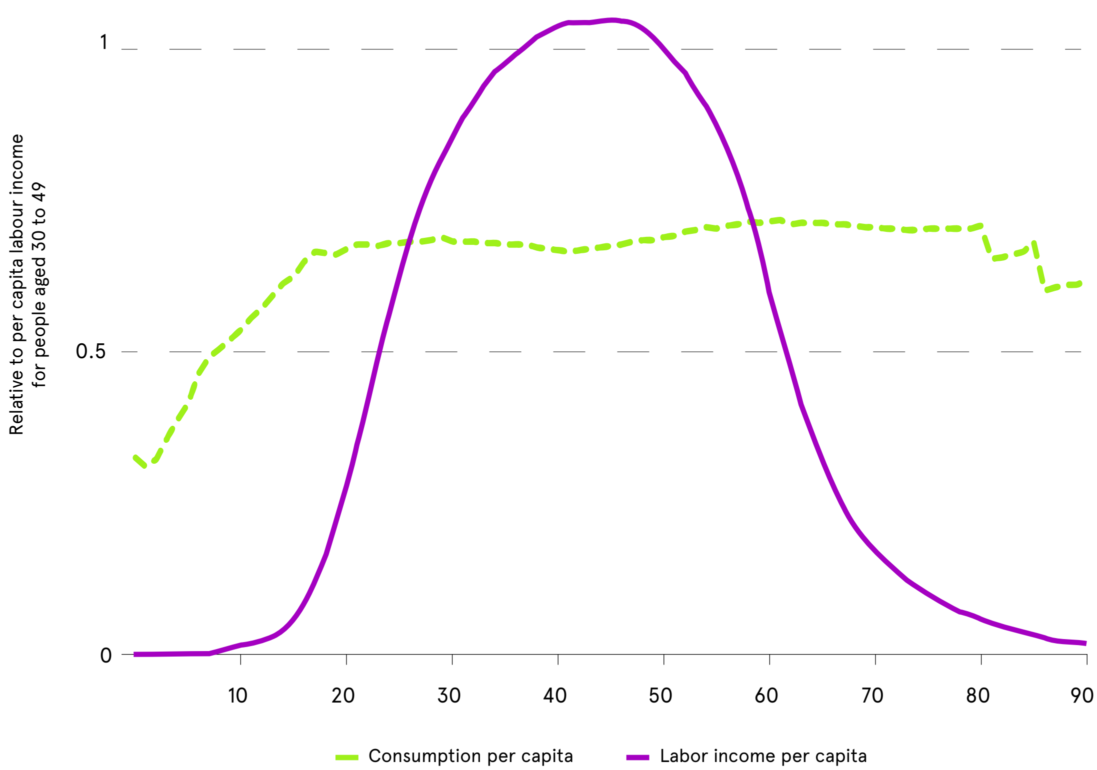
Due to spectacular improvements in health and survival and to reductions in family size and fertility, the long-term process of population ageing has begun, or is expected to begin soon, in all countries and areas of the world. The share of older persons as a proportion of the global population is gradually increasing while the share of children and young people is slowly decreasing. These global trends bring both challenges and opportunities across the economic, social and environmental dimensions of sustainable development.

Much relates to variations in how people produce and consume over the course of life. Typically, people in the middle stages produce more than they consume, generating a surplus to provide for their dependent children or others who rely on them for support or to secure an income for themselves at older ages (figure 0.1). This general pattern holds across populations at various levels of social and economic development.

Population averages, however, do not reveal the full diversity of individual experiences at any given age. Some working-age people do not generate sufficient labour income to finance what they need to live. Many older persons are in good health and continue to provide for themselves and contribute to their communities until advanced ages. Nevertheless, the ability to engage in productive work and carry out activities of daily living wanes sooner or later, given the progressive physiological deterioration that marks biological ageing.

As individuals grow older, questions arise around how they will sustain themselves financially when they no longer work or receive labour income, and how they will be cared for when they can no longer care for themselves. Societies provide support and care for older persons through various channels. Traditionally, families have played an essential part. Over time, however, States have taken on an increasing role in transferring resources and providing assistance to older persons as part of modern social contracts.

Figure 0.1 **Age patterns of labour income and consumption, averaged across 41 countries, based on data between 1994 and 2016**



Source: Computed using data from the National Transfer Accounts project. Available at https://ntaccounts.org (accessed on 23 August 2021).

Note: Age patterns of consumption and labour income are shown relative to the average labour income for people aged 30 to 49.

As populations globally undergo a demographic transition towards longer lives and smaller families, and the number and population share of older people grow, all Governments need to adapt and innovate in their policies and programmes to ensure that older persons remain productive and empowered members of society and to prepare to support more older people when needed. With appropriate foresight and planning, Governments can manage the challenges associated with population ageing while also taking full advantage of the opportunities it offers and ensuring that no one is left behind.

All Governments need to adapt their policies to enable older persons to remain productive and empowered members of society

In the initial stage of population ageing, countries have a window of opportunity to benefit from a demographic dividend – a boost in per capita economic growth arising from an increasing share of the working-age population. Expanding opportunities for decent work and investing in quality education and health-care services help maximize the potential benefits of the dividend and steer economic growth that is inclusive and diminishes poverty and inequality.

Governments in countries with rapidly ageing populations have responded in various ways. In most cases, concerns have emerged around the fiscal sustainability of programmes to respond to ageing. Unfortunately, some measures focused primarily on balancing the budget may also give short shrift to essential forms of social protection and, in doing so, intensify poverty and inequality among older people.

Some countries, for instance, have shifted financial risks onto pensioners through pension programmes that rely on workers contributing to an investment fund that will pay their pensions in retirement. The accumulated return on investment in large part determines the benefit received. This leaves individual beneficiaries bearing the uncertainties of investment performance, which may result in insufficient income later in life.

Despite such concerns, there are reasons to be optimistic about population ageing. Based on current global trends, future cohorts of working-age and older persons are likely to be healthier and better educated, and therefore more productive, compared to earlier cohorts. These changes highlight potentially positive impacts on the economy and broader society. Whether these potentially positive effects materialize depends on countries maintaining or increasing public investments in health care and education for all, including lifelong learning. Eliminating age-related discrimination and barriers to formal employment are other critical measures for older persons to make continued contributions.

The implications of population ageing have been on the agenda of the international community for decades. At the First World Assembly on Ageing convened in Vienna, Austria, in 1982, population ageing was identified for the first time as a global issue with vital connections to development. The Second World Assembly on Ageing, held 20 years later in Madrid, concluded with the adoption of a Political Declaration and the Madrid International Plan of Action on Ageing, a landmark agreement in which Governments committed to "building a society for all ages". The Plan of Action provides guidance on a broad range of issues under three priorities: older persons and development, advancing health and well-being into old age, and ensuring enabling and supportive environments. The plan acknowledges the contributions and concerns of older persons as vital to the international development agenda.

In 1994, the Programme of Action adopted at the International Conference on Population and Development in Cairo recognized population ageing as an irreversible trend and called on Governments and other stakeholders to take advantage of the associated opportunities by helping older people to maintain their economic and social independence, and by providing health care and support through family and other formal and informal safety nets. The Programme of Action calls specifically for the support and protection of older women, recognizing that they constitute the majority of older persons globally.

While the Millennium Development Goals, adopted in 2000, only marginally included consideration of older persons and their needs and contributions to society, the 2030 Agenda for Sustainable Development sets out a universal plan of action to achieve sustainable development in a balanced manner. It calls for leaving no one behind and meeting the Sustainable Development Goals (SDGs) for all segments of society and at all ages, with a particular focus on the most vulnerable people, including those at older ages.

Recognizing the importance of healthy ageing[2] to achieving all 17 SDGs, in December 2020, the United Nations General Assembly proclaimed 2021–2030 as the United Nations Decade of Healthy Ageing.[3] The Assembly expressed concern that, despite the predictability of population ageing and its accelerating pace, the world is not sufficiently prepared to protect the rights and address the needs of older people.[4] United Nations Member States acknowledged that population ageing has major impacts on health systems and many other aspects of societies, including labour and financial markets and services for education, housing, long-term care and social protection.

To commemorate the twentieth anniversary of the Madrid International Plan of Action on Ageing, and at the onset of the Decade of Healthy Ageing, the *World Social Report 2023* examines the social and economic implications of population ageing for sustainable development. The report presents concrete policy options to harness opportunities and address challenges, including those related to sustainability, equity and inclusion.

2 Healthy ageing, defined by the World Health Organization (WHO) as "the process of developing and maintaining the functional ability that enables wellbeing in older age", replaces WHO's previous focus on active ageing, a policy framework developed in 2002. Healthy ageing, like active ageing, emphasizes the need for action across multiple sectors and enabling older persons to remain a resource to their families, communities and economies (WHO, 2020a).

3 General Assembly resolution 75/131.

4 In 2010, the General Assembly established an Open-ended Working Group on Ageing, mandated to identify possible gaps in the existing international framework and how best to address them. In 2012, the Assembly requested the Working Group to present a proposal containing the main elements to include in an international legal instrument to promote and protect the rights and dignity of older persons, which are not sufficiently addressed through existing mechanisms.

Chapter 1 examines changes in population age distribution over the demographic transition, particularly the rapid growth in the number and share of the older population. Although levels and trends differ by country and region, the world is gradually transitioning towards longer lives and smaller families.

Chapter 2 describes the global trend towards lower mortality and increased longevity. It shows that in countries with available data, the number of years lived in good health appears to be increasing.

Chapter 3 discusses the implications of population ageing for the economy. It affirms that different stages of the demographic transition have varying economic impacts. Other influential factors are economic structure and levels of human and social development. Understanding these dynamics can open opportunities to better prepare for a future with a greater share of older persons.

Chapter 4 examines inequality over the life course and illustrates how it contributes to poverty in old age. The analysis suggests that, although future cohorts of older persons will likely be healthier and more educated than those alive today, they may also be more unequal and economically insecure. Proactive changes are needed to reduce inequalities among people right now with the expectation that this will prevent worsening inequalities as people age.

Chapter 5 examines weaknesses in long-term care and support systems given changing living arrangements among older persons. It describes how reforming such systems could benefit today's older persons and those who care for them as well as future cohorts of older persons. The chapter draws attention to the importance of the care economy and to the imperative for policymakers to address the disproportionate role of women and immigrants in a sector that is often poorly compensated and remains largely invisible in economic accounting.

All countries must make choices about how to maximize the opportunities that population ageing brings while ensuring people's well-being at all stages along the life course. This report highlights policies that countries can adopt to minimize poverty and to support people in remaining productive and healthy as they age. A key message is that countries can address concerns about fiscal sustainability without sacrificing equity or economic security at older ages.

CHAPTER 1

AN AGEING WORLD

KEY MESSAGES

- The number of people aged 65 years or older worldwide is projected to more than double, rising from 761 million in 2021 to 1.6 billion in 2050. The number of people aged 80 years or older is growing even faster.

- Population ageing is an irreversible global trend. It is the inevitable result of the demographic transition – the trend towards longer lives and smaller families – that is taking place even in countries with relatively youthful populations. In 2021, 1 in 10 people worldwide were aged 65 or above. In 2050, this age group is projected to account for 1 in 6 people globally.

- As fertility levels fall, the share of younger people declines, while the shares of working-age adults and, eventually, older people go up. Further population ageing is driven by more people living longer, healthier lives.

- Among regions, Northern Africa and Western Asia and sub-Saharan Africa are expected to experience the fastest growth in the number of older people over the next three decades. Today, Europe and Northern America combined have the highest share of older persons.

- Women tend to live longer than men and thus comprise the majority of older persons, especially at advanced ages. Since the average survival of males is projected to gradually move closer to that of females, small but noticeable reductions in the sex gap in life expectancy and in the female share of the population at older ages are likely in coming decades.

- Conventional measures of population ageing, such as the old-age dependency ratio, are often used as proxy indicators of economic dependency. Other measures can provide a more nuanced picture by taking account of increased life expectancy or the economic production and consumption of various age groups.

We live in an ageing world, marked by a shift in the distribution of populations towards older ages. This pattern began on a global scale around the middle of the twentieth century and is expected to intensify in the decades ahead. Between 2021 and 2050, the global share of the older population, defined as people aged 65 years or over, is projected to increase from less than 10 to around 17 per cent. The number of older people is expected to more than double from 761 million to 1.6 billion during the same period (United Nations, 2022a). Most of the more developed countries have experienced population ageing over several decades and are already in advanced stages of this process. By contrast, many developing countries face rapid transitions towards ageing societies.

This chapter presents an overview of levels and trends in population ageing around the world. It also discusses how common demographic measures of population ageing can be modified to integrate health and economic considerations and thus provide clearer guidance as countries seek to implement policies and services to meet changing needs.

A.

OLDER POPULATIONS ARE RAPIDLY GROWING EVERYWHERE

The number of older people is growing fast, having tripled from around 260 million in 1980 to 761 million in 2021 (figure 1.1). By 2030, the number is projected to top 1 billion and eventually to reach over 1.6 billion in 2050. By the end of the twenty-first century, the world could have nearly 2.5 billion older people (United Nations, 2022a).

The number of older people increased rapidly in all regions of the world from 1980 to 2021, a trend that is likely to continue over the next three decades

The number of older people increased rapidly in all regions of the world from 1980 to 2021, a trend that is likely to continue over the next three decades. From 2021 to 2050, the population aged 65 or over in Eastern and South-Eastern Asia and in Central and Southern Asia is projected to grow by more than 540 million, accounting for more than 60 per cent of the global increase. Over the next three decades, Northern Africa and Western Asia and sub-Saharan Africa are projected to have the fastest growth – or highest growth rate – of the population aged 65 or above.

Globally, the number of people aged 80 years or over is rising even faster than the number aged 65 or above. By 2050, the world will have an estimated 459 million persons aged 80 or more, almost triple the number in 2021 at around 155 million. Between 2021 and 2050, this age group is projected to increase by more than 200 per cent in all regions except Europe and Northern America and Australia and New Zealand, where it is expected to grow by 10 per cent and 60 per cent, respectively.

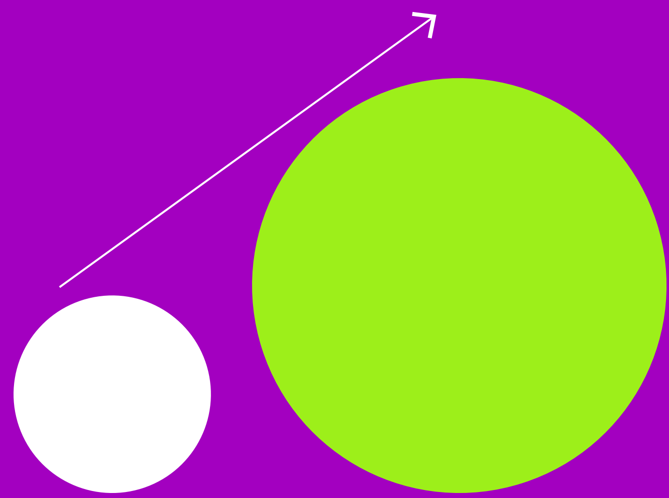
FACTS AND FIGURES FROM CHAPTER 1

MORE THAN DOUBLE

the number of people aged 65+ will
MORE THAN DOUBLE from

761
MILLION in 2021 to

1.6
BILLION in 2050



THE 80+ POPULATION IS GROWING FAST

increase expected from

155
MILLION in 2021

to

459
MILLION in 2050

SOCIETIES WILL BE OLDER

from 1 in 10 people 65+

in 2021

to 1 in 6 people 65+

in 2050

THE GEOGRAPHY OF THE WORLD'S OLDEST COUNTRIES AND TERRITORIES IS SHIFTING

from Europe towards Eastern and South-Eastern Asia by 2050

World's oldest country or territory (with the largest share of people 65+)

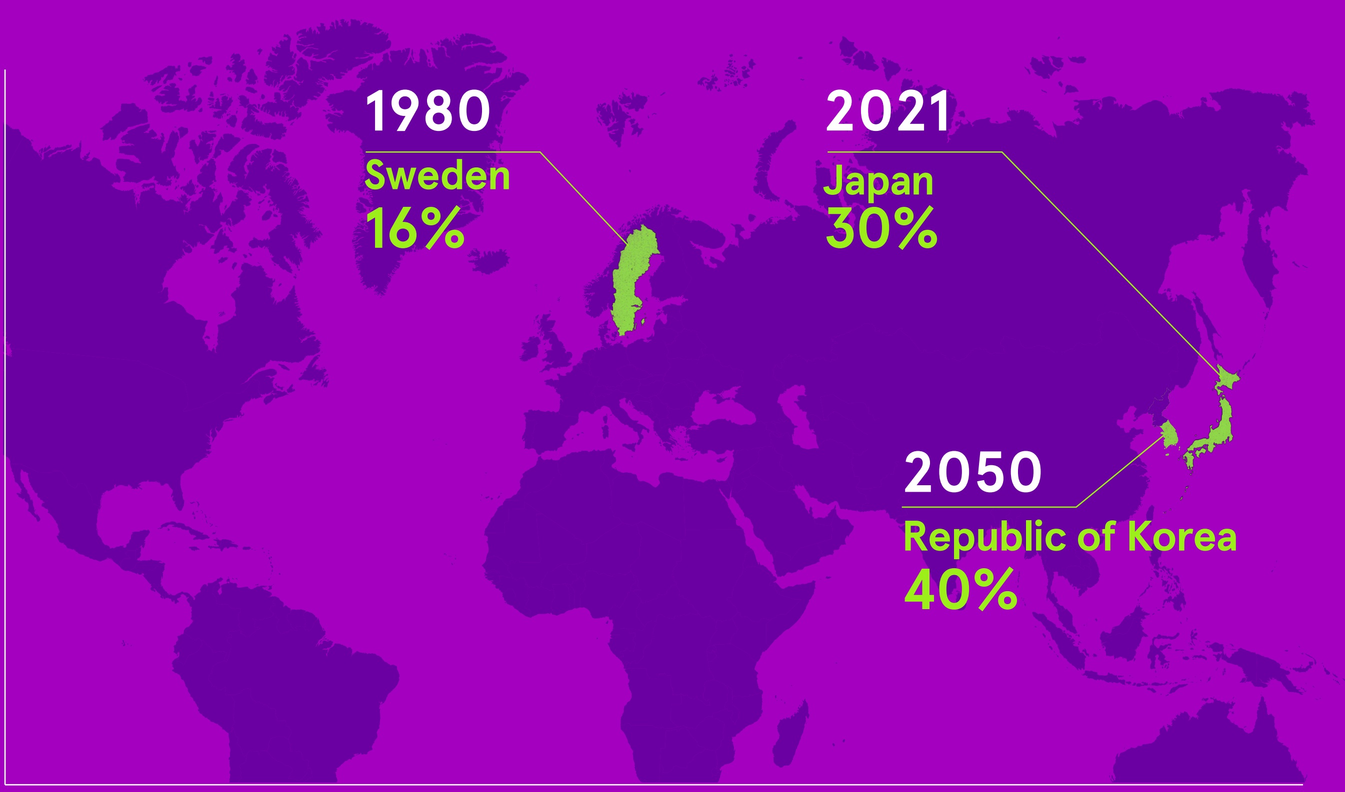
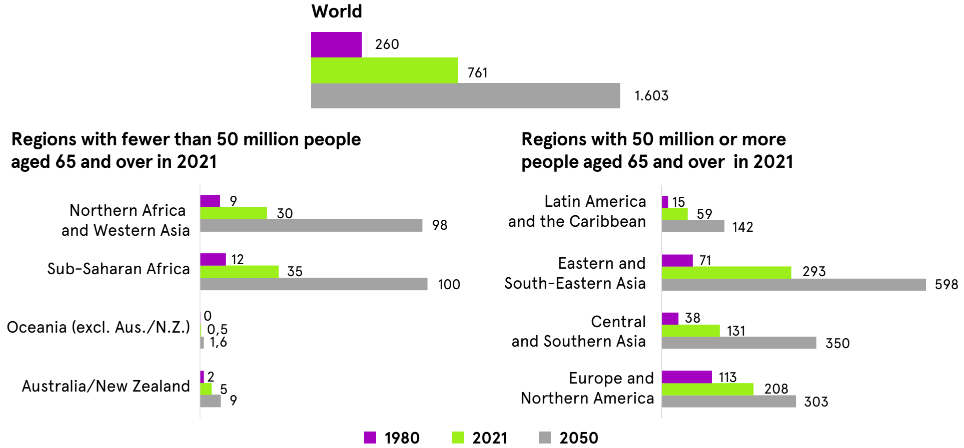


Figure 1.1 **Number of people aged 65 years or above in millions, world and regions, 1980, 2021 and 2050**



Source: United Nations (2022a).

Women live longer than men on average and thus comprise a majority of older persons, especially at the highest ages. In 2021, women outlived men by an average of 5.4 years and accounted for 56 per cent of the global population aged 65 or over. Among those aged 80 or over, the proportion of women reached 62 per cent. Since survival rates for men are projected to gradually move closer to those of women, the sex distribution at older ages is expected to become more balanced. Still, in 2050, women will likely comprise a majority of the population aged 65 or above and 80 or above (54 per cent and 59 per cent, respectively).

B.

THE POPULATION AGE DISTRIBUTION IS SHIFTING STEADILY UPWARD

The older population is growing globally both in absolute numbers and as a share of the total population. Population ageing unfolds over many decades through a gradual upward shift in the age distribution. While the share of population at older ages goes up, the share at younger ages goes down. The median and average ages of the population both rise in the process.

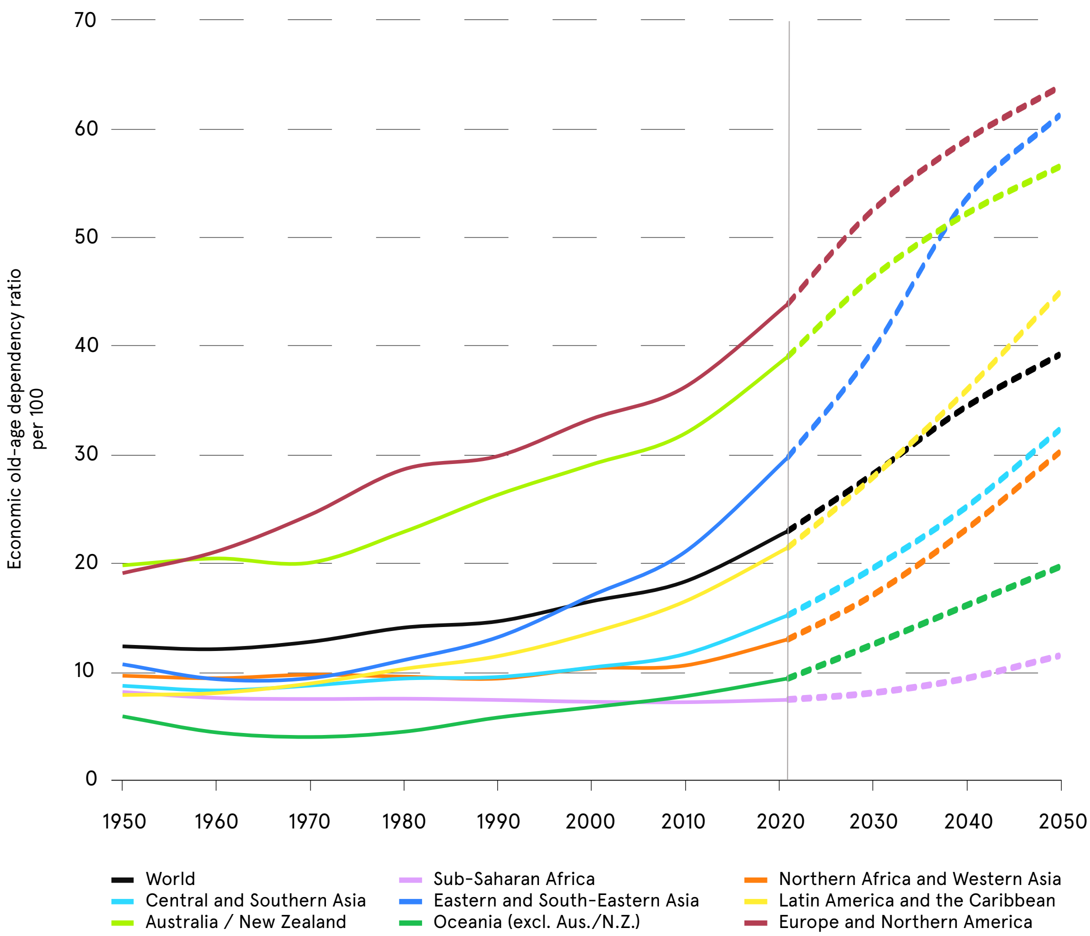
In 2021, 1 in 10 people worldwide was aged 65 or over compared to 1 in 20 in 1950. In 2050, this age group may account for 1 in 6 people worldwide (figure 1.2). Over the next three decades, the proportion of older people is projected to double in five regions while increasing more slowly in the other three. In sub-Saharan Africa, high birth rates are expected to keep the share of children and youth relatively large and therefore the share of older persons relatively small. In Europe and Northern America and in Australia and New Zealand, where population ageing is already well advanced, further ageing will take place more slowly.

In 1980, the world's 10 oldest populations were in Europe, each with around 15 per cent of the population at ages 65 or above (table 1.1). By 2021, the share

The geography of the world's oldest countries will shift from Europe towards Eastern and South-Eastern Asia between now and 2050

above age 65 had pushed past 20 per cent in all 10 countries, on its way to an expected 30 per cent by 2050. Although Japan had the world's oldest population in 2021, China, Hong Kong, Special Administrative Region (SAR) of China, and the Republic of Korea will likely surpass it before 2050. The geography of the world's oldest countries will shift from Europe towards Eastern and South-Eastern Asia between now and 2050, when the latter is expected to include 5 of the 10 oldest populations.

Figure 1.2 **Percentage of people aged 65 years or over, world and regions, estimates for 1950–2021 and projections for 2022–2050**



Source: United Nations (2022a).

Table 1.1 **Countries and areas with the largest shares of people aged 65 years or over, 1980, 2021 and 2050**

	1980		2021		2050	
RANK	COUNTRY OR AREA	PERCENTAGE AGED 65 YEARS OR OVER	COUNTRY OR AREA	PERCENTAGE AGED 65 YEARS OR OVER	COUNTRY OR AREA	PERCENTAGE AGED 65 YEARS OR OVER
1	Sweden	16.3	Japan	29.8	China, Hong Kong, SAR of China	40.6
2	Germany	15.7	Italy	23.7	Republic of Korea	39.4
3	Austria	15.4	Finland	22.9	Japan	37.5
4	United Kingdom	14.9	Portugal	22.6	Italy	37.1
5	Norway	14.8	Greece	22.5	Spain	36.6
6	Belgium	14.4	Bulgaria	22.4	China, Taiwan, Province of China	35.3
7	Denmark	14.4	Puerto Rico	22.4	Greece	34.8
8	France	14.0	Germany	22.2	Portugal	34.5
9	Switzerland	13.8	Martinique	22.1	Singapore	34.2
10	Luxembourg	13.6	Croatia	22.0	Kuwait	33.6

Source: United Nations (2022a).
Note: For countries and areas with a population of 90,000 or more by mid-2021.

Population ageing is progressing more rapidly in developing countries than it did historically in more developed countries

Population ageing is progressing more rapidly in developing countries than it did historically in more developed countries. With few exceptions, such as Japan, in most countries of the more developed regions, the proportion of the population aged 65 or above rose from 7 to 14 per cent in anywhere from 40 to 120 years. It took (or will take) between 20 and 50 years to increase the share further from 14 to 21 per cent. By contrast, most developing countries will likely see a doubling in the share of older persons from 7 to 14 per cent in 15 to 35 years and a further increase from 14 to 21 per cent in just 10 to 30 years.

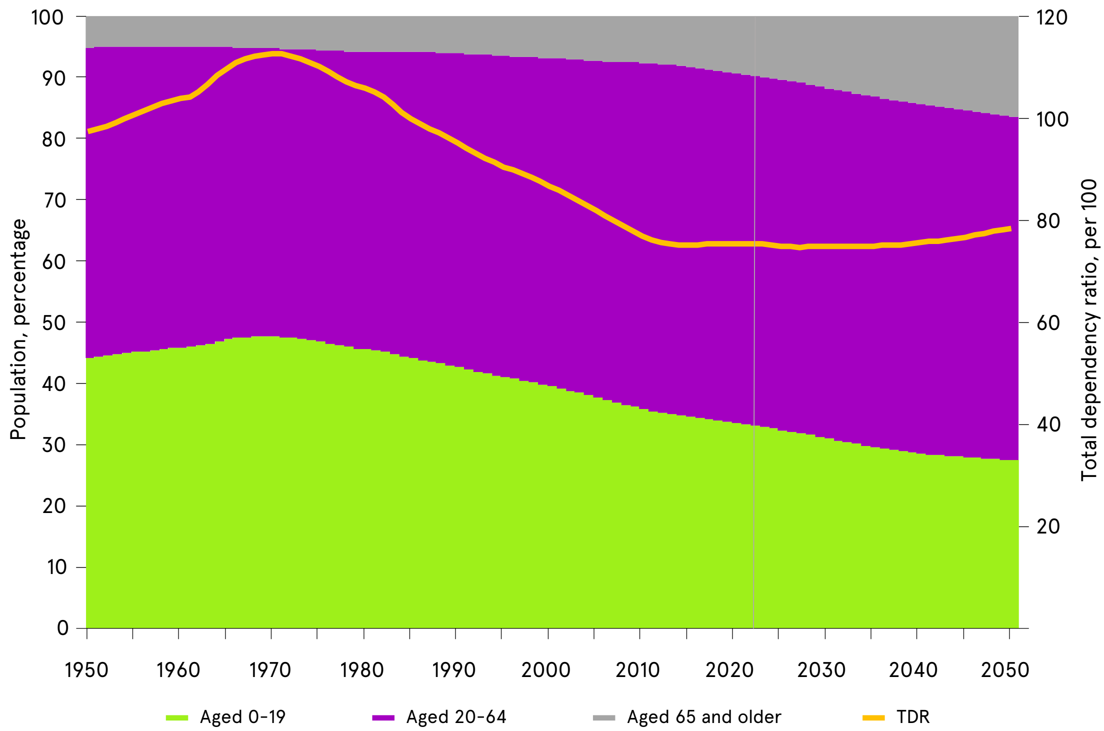
Between 2021 and 2050, all regions are expected to experience a rise in the median age, which divides the younger and older halves of the population. Globally, the median age is expected to climb from 30 years in 2021 to 36 years in 2050. The region of Latin America and the Caribbean is projected to experience a rapid rise in the median age from 30 years in 2021 to 40 years in 2050. Over the same period, the median age in Europe and Northern America is projected to increase from 40 to 46 years. Between now and 2050, 16 countries are expected to reach a median age of 50 years or higher.

Historically, older persons made up a much smaller share of the population compared to younger age groups. As fertility rates drop during demographic transition, the shift in the age structure manifests initially as a swelling share of adults in the working and reproductive ages and falling proportions of children and youth. If fertility remains at lower levels, the population begins to age and eventually the share of older people starts to rise. Successive cohorts tend to live longer, increasing the demands on younger generations as potential sources of assistance in old age.

Children and older people tend to rely on economically active adults for financial support and care. A total dependency ratio provides an approximate indication of how many dependents are likely to need support from each person of working age, on average. The ratio reflects the number of children and young people under age 20 plus the number of older persons compared to the number of working-age people, often defined as those between ages 20 and 64. The actual ages of dependency, however, vary considerably from country to country and from person to person. Factors such as the pursuit of higher education or youth unemployment often prolong the dependent period beyond age 20. Health and financial considerations as well as personal preferences influence the age at which people retire from the workforce and eventually become dependent.

Figure 1.3

Distribution of the global population in broad age groups and total dependency ratios, estimates for 1950–2021 and projections for 2022–2050



Source: United Nations (2022a). TDR indicates total dependency ratio.

In 2002, at the time of the Second World Assembly on Ageing, more than half of the global population was between 20 and 64 years old (54 per cent), meaning 8 or 9 individuals potentially depended on every 10 workers (figure 1.3). Most "dependents" were children and youth below age 20; only 15 per cent were older people. By 2021, with the progression of population ageing, older people made up a larger share of the dependent group, although still less than that of children and youth, and the proportion of working-age persons in the total population had increased to 57 per cent. This share will remain relatively stable through 2050, keeping the dependency ratio below 1. Part of the increased portion of people at ages 65 or over stems from the greater share over age 80. The latter is expected to increase from 2 to around 5 per cent of the global population between 2021 and 2050.

A regional review of the evolution of the working-age population shows that it peaked in Europe and Northern America in 2013. It is projected to peak in 2027 in Eastern and South-Eastern Asia, followed by Latin America and the Caribbean in 2043 and Central and Southern Asia in 2058. All other regions are expected to experience continued growth in the working-age population through the end of the century.

Although population ageing is progressing everywhere, younger populations will continue to constitute the largest share of dependents globally even while declining from 33 per cent of the global population in 2021 to around 28 per cent in 2050. Three regions will complete the transition from a high share of youth dependents to a high share of older dependents before 2050: Australia and New Zealand, Europe and Northern America, and Eastern and South-Eastern Asia. Latin America and the Caribbean will complete this transition by 2060 and Central and Southern Asia by 2080. Populations in sub-Saharan Africa, Oceania (excluding Australia and New Zealand), and Northern Africa and Western Asia will continue to have dominant shares of young dependents through the end of this century.

C.

BETTER MEASUREMENT IMPROVES UNDERSTANDING OF AGEING SOCIETIES

The total dependency ratio allows an overall understanding of the demand for public services and the necessary financial resources. Yet to better comprehend the socioeconomic implications of population ageing, several additional measures help account for the diversity of capacities and dependencies across ages.

The old-age dependency ratio, based on chronological age, compares the size of the older population to that of the working-age population. It assumes implicitly that all older persons are net recipients of economic transfers, including for health care, and that these transfers are financed by the labour income of younger age groups. Defining age groups in a purely chronological and static manner, however, may limit understanding of possible changes over time in the health status and activity levels of older persons (see chapter 2). Other concepts and measures that shift the focus from the number of years lived since birth to the expected time until death, or remaining life expectancy, offer an alternative perspective on how population ageing impacts social and economic development.

Given the diversity among older persons in terms of economic activity, health and well-being, and levels of non-market activity, and considering that not all working-age people are economically active, researchers have proposed alternative measures of population ageing that incorporate information about age patterns of production and consumption. Such measures have been developed in the context of the National Transfer Accounts (United Nations, 2013, 2019a; Lee and Mason, 2011; Mason and others, 2017).[5]

1. COMPARING CHRONOLOGICAL AND PROSPECTIVE MEASURES OF OLD-AGE DEPENDENCY

The old-age dependency ratio is based on chronological age and is defined as the number of persons aged 65 years or over divided by the number of working-age people (20 to 64 years). This indicator allows an examination of national trends in population ageing and a comparison across countries at a given point in time. Age 65 is generally the threshold for defining older persons, who are often net recipients of economic transfers through publicly funded pensions and health care.

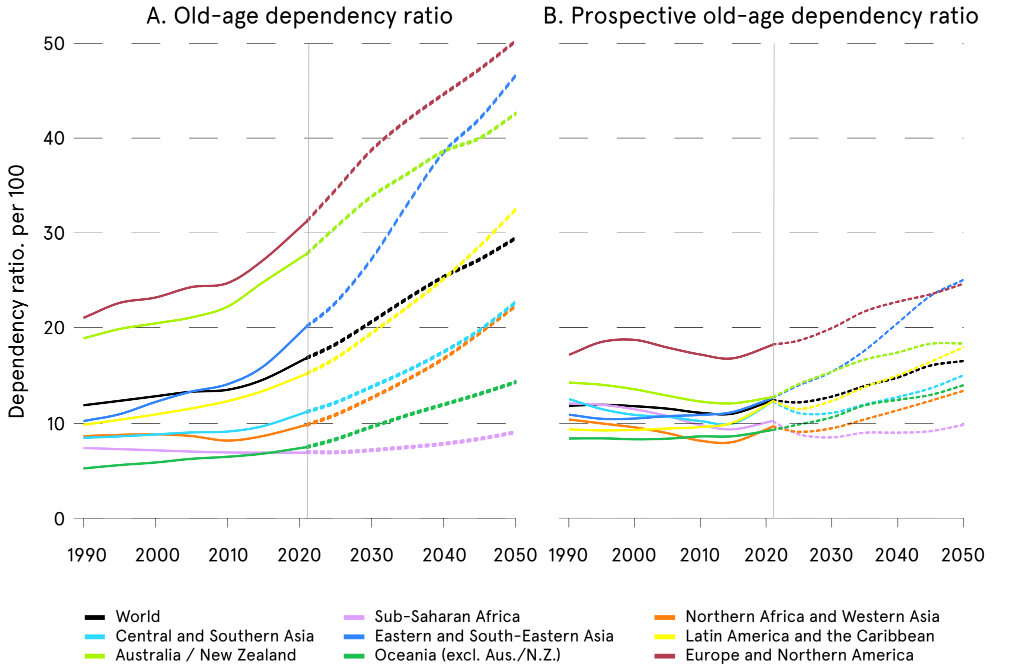
In all regions of the world, the old-age dependency ratio has increased continuously since 1990, albeit at varying speeds. Globally, in 2021, there were 17 persons aged 65 years or over per 100 persons aged 20 to 64. By 2050, this ratio is projected to increase to 29 per 100. In fact, the old-age dependency ratio is expected to rise in all regions between 2021 and 2050 (figure 1.4).

A complementary way to assess population ageing involves shifting the focus from the time since birth (chronological age) to the expected time until death (thanatological age). At an aggregate level, the expected time until death is determined by a set of age-specific mortality rates covering the remaining years of life. Since a person's health, welfare and social care demands at older ages are often more closely linked to thanatological than to chronological age, forecasts of the social and economic costs of ageing that are based only on chronological age are prone to bias (Riffe and others, 2016). During periods of declining mortality and increasing longevity, predictions of health and social care costs based on chronological age tend to overestimate total financial expenditure, as most acute medical care costs occur in the final months of life with little additional impact from a person's age at that time (Miller, 2001; Riffe and others, 2016; Sanderson and Scherbov, 2010; Stearns and Norton, 2004).

The prospective old-age dependency ratio (Sanderson and Scherbov, 2005, 2007) considers as "old" those ages at which people are expected to live, on average, a certain number of years (for this analysis, 15 years). Accordingly, this ratio is calculated as the number of persons above the age for which the remaining life expectancy is closest to 15 years, relative to the number of persons between age 20 and that age. In this way, the number of people with a remaining life

5 Ageing measures featured in this chapter focus on those with comprehensive data available at the global level or for large numbers of countries. Chapter 2 refers to other measures that are available only for a select number of countries for certain periods of time, including measures that incorporate information about health status or functional ability (WHO, 2015).

Figure 1.4 **Traditional and prospective old-age dependency ratios, world and regions, estimates for 1990–2021 and projections for 2022–2050**



Sources: United Nations (2022a), own calculations, based on Sanderson and Scherbov (2005, 2010, 2019). *Note*: The bump in the trajectories of prospective ratios around 2020–2022, as shown in panel B, are due to the impact of the COVID-19 pandemic, which interrupted trends in life expectancy for most regions.

expectancy of less than 15 years serves as a proxy for the number who are economically dependent on others due to advanced age.

Comparing the traditional and prospective old-age dependency ratios, the latter is lower in all regions except sub-Saharan Africa and Oceania (excluding Australia and New Zealand). This result suggests that the impact of population ageing may be less than what is implied by the traditional old-age dependency ratio in populations with high levels of life expectancy (figure 1.4).

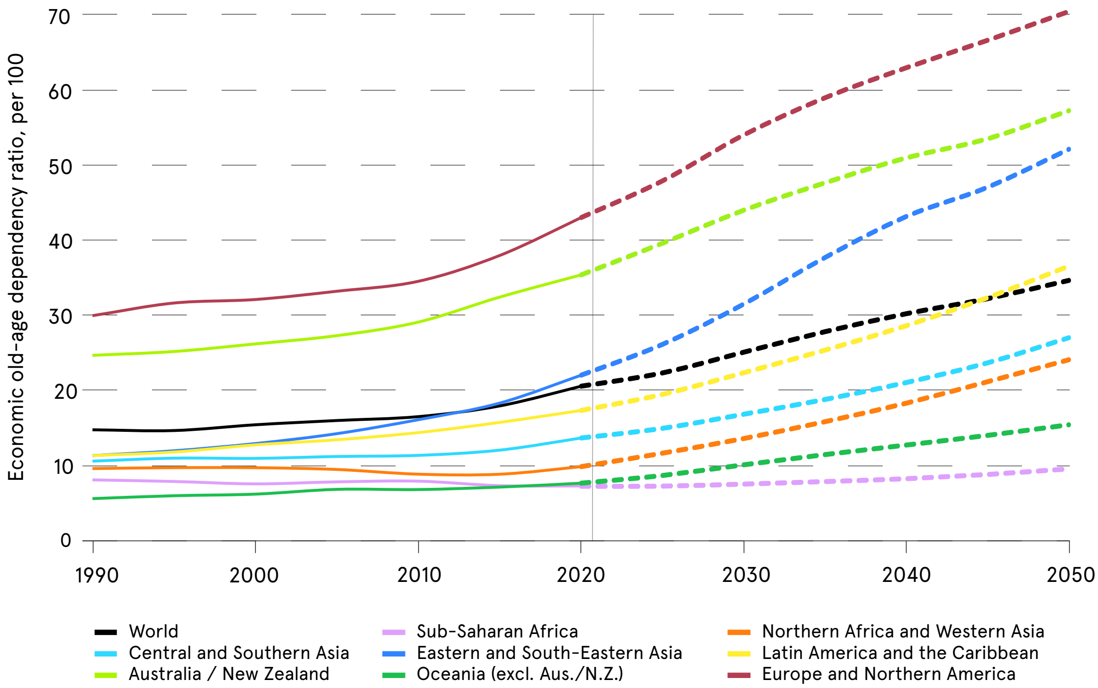
2. MEASURING AGEING FROM AN ECONOMIC PERSPECTIVE

The old-age dependency ratio has economic analogues based on levels of consumption and production and other components of economic behaviour over the life course, as described in the literature on National Transfer Accounts (United Nations, 2013, 2019a; Lee and Mason, 2011; Mason and others, 2017). The analysis of such accounts focuses on the age distributions of consumption, labour earnings and other economic aggregates in a national economy. National Transfer Accounts can be used to measure and analyse the age and generational dimensions of an economy, providing evidence of the consequences of population ageing for economic policymaking.

In contrast to the measures discussed above, the economic old-age dependency ratio explicitly considers age-related patterns of economic activity to assess levels of dependency (net consumers) associated with old age. The ratio is defined as the effective number of consumers aged 65 years or over divided by the effective number of workers at all ages.[6] The key advantage of this measure is that it explicitly incorporates age-specific variations in labour income and consumption. In doing so, it gives a more direct, focused and realistic measure of economic dependency over the life cycle than either the old-age dependency ratio or the prospective old-age dependency ratio.

The economic old-age dependency ratio indicates that globally in 2020, there were 21 effective consumers aged 65 years or over per 100 effective producers. By 2050, this ratio is projected to rise to 35 per 100, with increases in all regions (figure 1.5). The economic old-age dependency ratio is slightly higher than the old-age dependency ratio in all regions, with a greater difference in Europe and Northern America and in Australia and New Zealand compared to other regions due to their relatively higher consumption at older ages (United Nations, 2019a).

Figure 1.5 **Economic old-age dependency ratios, world and regions, estimates for 1990–2021 and projections for 2022–2050**



Source: Based on the method outlined in Mason and others (2017).

6 The effective number of workers or consumers at a given age is calculated as the population at that age weighted by the labour income or consumption profile. People aged 30–49 are counted, on average, as one effective worker and one effective consumer. People at other ages are counted as more or less than one effective worker or consumer depending on how much they produce through their labour or consume relative to the average for those aged 30 to 49 (Mason and others, 2017).

Considering total demand for public support by younger and older populations worldwide, the share of dependents is expected to remain rather stable. The composition is changing, however. Most regions are already experiencing or will experience a shift in dependency from younger to older ages. Because populations are ageing at different speeds, national ratios vary significantly. In half of all countries or areas, the total dependency ratio is expected to change either upwards or downwards by 25 per cent or more from today until 2050. In 40 per cent of countries or areas, it will change by 30 per cent or more.

Most countries in the early stages of population ageing will continue to benefit from stable and in some instances even growing workforces while striving to meet the demands of large shares of young people and mounting numbers of older persons. Regions at more advanced stages of population ageing may see declining demands from shrinking younger populations and shift their focus to promoting the health and well-being of working-age and older populations. In doing so, they may benefit from people working longer in better health, with reduced needs for health care.

Conventional measures of population ageing, such as the old-age dependency ratio, are often used as a proxy indicator of economic dependency. From this perspective, growing numbers and rising shares of older persons are frequently considered a looming threat to public services, particularly health care and pensions. Other measures that account for increased life expectancy and actual economic production and consumption in various age groups, however, provide a more nuanced picture.

D.

DEMOGRAPHIC TRANSITION STEMS FROM LONGER LIVES AND SMALLER FAMILIES

The demographic transition, a gradual shift towards longer lives and smaller families, began first in Europe and Northern America, where levels of fertility and mortality began to fall as early as 1800, leading to a larger population and, eventually, a much older one as well. The transition took off on a global scale around the middle of the twentieth century (Caldwell, 2006; Lee and Reher, 2011).[7] The process typically unfolds in stages (figure 1.6). Population growth first accelerates and then slows down, while the age distribution first becomes younger before shifting towards older ages.[8]

Three main mechanisms drive population ageing during the demographic transition. First, the share of older people increases as fertility levels decline and reduce the proportion of younger people (ageing "from the bottom"). Second, the continuing extension of the human lifespan raises the number of older people (ageing "from the top").

7 Today, no country or area is in the pre-transition stage. Among the 236 countries or areas that comprise the global population, one sixth, located almost exclusively in sub-Saharan Africa, are in an early stage; one third are in an intermediate stage; and the other half are in a late or post-transition stage (United Nations, 2022a).

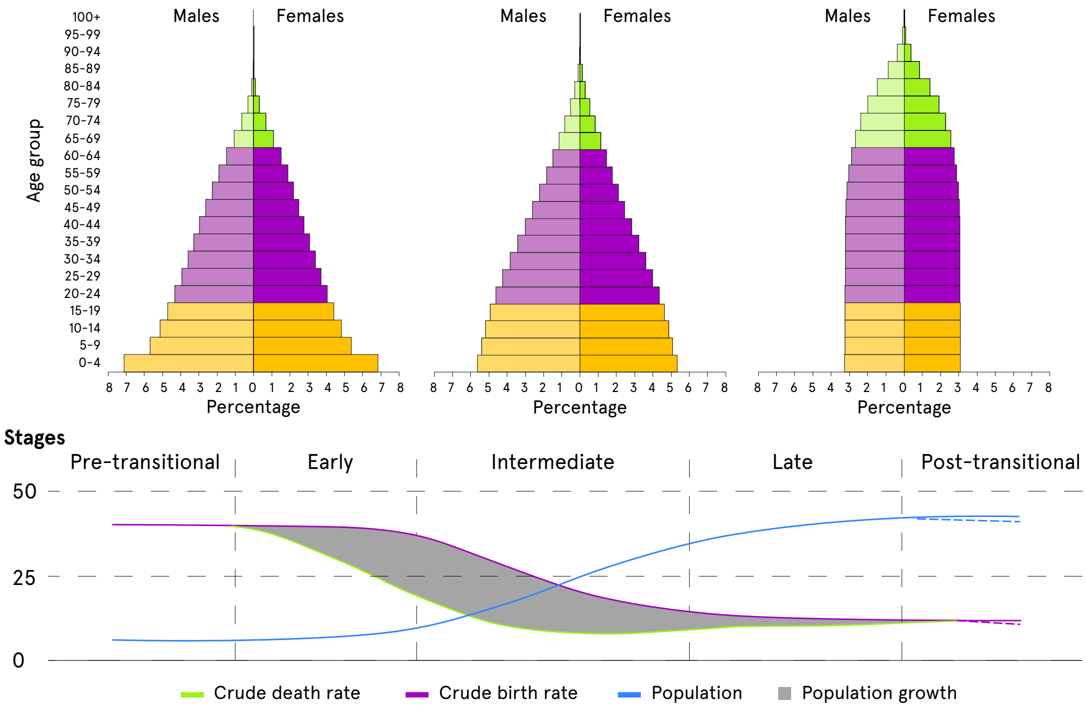
8 This stylized description of the demographic transition refers to a population that is closed to migration, in which population trends are determined entirely by changes in levels of fertility and mortality. Box 1.2 examines the role of international migration in population ageing.

Third, when the cohort of people who are about to enter old age is large compared to its predecessors, their progression into older ages will enlarge the older population (a "cohort effect"). A large number of people ageing into their 60s and beyond stems from earlier declines in mortality at younger ages but can also result from high or fluctuating levels of fertility in the past, historical inflows of migrants or a combination of factors (Bloom, 2019; Sudharsanan and Bloom, 2018).[9] Because such a cohort effect is driven by past demographic changes, it can influence the age distribution of a population even if levels of fertility and mortality are not changing.

Before the demographic transition, the population distribution by age and sex resembles a pyramid, with a wide base and relatively few older people (figure 1.6, left population pyramid). At the onset of the transition, the opposite of population ageing – population rejuvenation – often occurs. Mortality levels typically fall first among infants and children due to improved nutrition and effective control of infectious diseases, including pneumonia, diarrhoea and malaria (Caselli, Meslé and Vallin, 2002), while fertility levels remain high. As the population grows due to declining mortality at younger ages, the share of children and youth expands, widening the base of the pyramid.

Figure 1.6

Population distribution by age and sex, crude birth and death rates, and total population size at different stages of the demographic transition



Source: United Nations calculations.

Note: The crude birth (or death) rate is the annual number of live births (or deaths) divided by the population size at the midpoint of the observation period. Both rates are expressed as the number of births or deaths per 1,000 people per year.

9 Change in the age distribution associated with large cohorts born from the late 1940s until the early 1960s in some countries, known as the "baby boom" generation (Van Bavel and Reher, 2013), is an example of population ageing led by a temporary rise in fertility. Today's ageing "boomers" comprise a significant part of the older population in some countries.

In an intermediate stage, fertility starts to fall while mortality continues to decline, including at adult ages. The base of the population pyramid shrinks as the share of children falls, while the share of people at working and childbearing ages expands, signalling the onset of population ageing (figure 1.6, middle population pyramid). Eventually, the share of older persons starts to increase as well. As the transition progresses, fertility may reach and level off at the so-called "replacement" level, at which successive generations become roughly equal in size (box 1.1). In this scenario, there will be less of a difference in population size across the age range, as the population "pyramid" becomes more like a bell tower or a rocket (figure 1.6, right population pyramid).

While population ageing is an inevitable consequence of demographic transition, population decline is not

Once the demographic transition is complete, populations may stop growing and reach a stable size or begin to decline (figure. 1.6, the post-transitional stage). However, while population ageing is an

BOX 1.1 DEFINING REPLACEMENT-LEVEL FERTILITY

Replacement-level fertility refers to a level of childbearing where each generation exactly replaces the previous one in terms of size. In other words, children of the current generation of parents grow up to become an equivalent number of potential parents in the next generation. To "replace" themselves, women need to have, on average, one daughter who survives through the reproductive age and so on for succeeding generations.

An average of 2 births per woman will exactly replace mothers and fathers, but only if two conditions hold true: first, the same numbers of boys and girls are born, and second, all female children survive to the end of the reproductive age range. In reality, replacement-level fertility is slightly higher than 2 births per woman to account for the unbalanced natural sex ratio at birth (slightly more boys than girls) and for the loss of reproductive potential due to premature mortality. In populations with relatively low levels of mortality, replacement-level fertility requires approximately 2.1 live births per woman over a lifetime. In countries with higher levels of mortality, a slightly higher level of fertility is required to compensate for the greater loss of reproductive potential and to ensure the replacement of generations (Espenshade, Guzman and Westoff, 2003).

inevitable consequence of demographic transition, population decline is not. The fall in fertility that typically occurs during the transition is a necessary but not sufficient condition to produce a deficit of births. Population decline occurs only if below-replacement levels of fertility continue for several decades without a counteracting effect due to international migration (box 1.2). Today, about half the countries or areas of the world have completed or are in a late state of the transition, with life expectancies at birth of 75 years or more and fertility below the replacement level (box 1.3).

BOX 1.2

INTERNATIONAL MIGRATION CAN BOTH SLOW AND ADD TO POPULATION AGEING

Beyond the interplay of mortality and fertility, international migration can influence the age distribution in countries with large inflows of migrants. Because immigrants typically include a disproportionate number of young adults, immigration often results in a younger population and workforce in destination countries, postponing the process of population ageing by a few years without fundamentally altering the trend towards an older population. The children of immigrants also contribute to a younger population, especially when migrants have more children than the resident population.

International migrants comprise a sizeable share of working-age people in some countries today. By lowering the old-age dependency ratio, they contribute to a more affordable balance between workers and retirees. If migrants remain and grow old in destination countries, they will eventually add to older cohorts, increasing the share of older people and gradually diluting the impact of immigration on the population age distribution. On the other hand, if migrants return to their countries of origin and do not become permanent residents of the host country, and if they are followed by younger cohorts of migrants, immigration can have an enduring impact through keeping the population somewhat younger than it would have been in the absence of migration.

In 2020, international migrants accounted for nearly 19 per cent of the working-age population of high-income countries and over 1 in 10 of those aged 65 or above (United Nations, 2020a).

BOX 1.3

FROM TAX CREDITS TO BABY BONUSES, COUNTRIES CONCERNED ABOUT LOW FERTILITY OFFER SUPPORT FOR BEARING AND REARING CHILDREN

In 2021, fertility hovered below the replacement level in 124 of 236 countries or areas. Among these, 47 had fertility below 1.5 births per woman (United Nations, 2022a). Government policies and institutional settings, as well as associated cultural, economic and sociopolitical structures and histories, can cause fertility to decline to low levels.

Influential factors include the incompatibility between professional careers and family life, which has been identified as a major driver of low fertility (Wilkins, 2019; Sobotka, Matysiak and Brzozowska, 2019; McDonald, 2006). Other factors encompass the flexibility of the labour market, the educational system, gender equity, the links between marriage and childbearing, governmental subsidies for the costs of childrearing, the housing market and international migration (United Nations, 2015a). Over the past three decades, amid concerns about population ageing and potential population decline, a growing number of governments have adopted policies to raise the fertility level. Based on survey data from 2019, Governments in half of the 82 low-fertility countries with available data had adopted policies to raise the fertility level (United Nations, 2021b).

A wide range of family policies can help parents balance their work and family life. Examples include employment-related support, such as parental leave for one or both parents and flexible working hours; monetary support, such as tax credits, child and family allowances, baby bonuses and childcare subsidies; and service provision, such as childcare and after school programmes. Some high-income countries (e.g., France, Hungary, Japan, the Republic of Korea, the Russian Federation and Singapore) have adopted explicit policies to influence the fertility level through economic or social incentives and tax credits. Others do not have such specific policies in place (Demeny, 2011; May, 2012).

In developed countries, family-oriented policies have evolved mostly through social welfare systems. For example, the "maternity capital" programme in the Russian Federation and the "speed premium" in Sweden provide cash benefits for having children. Norway makes high-quality childcare facilities available, and Estonia grants universal and generous parental leave (Sobotka, Matysiak and Brzozowska, 2019). Some developing countries, despite their less extensive welfare systems, have adopted measures that include maternity leave, family or child allowances and publicly subsidized childcare. Notably, all low-fertility countries except the United States of America provide national paid maternal leave. Fewer countries also provide paternal or parental leave (United Nations, 2021a).

A recent review of policy responses to concerns about low fertility indicates that di-

BOX 1.3

rect monetary support may have temporary effects, mainly on the timing and spacing of births, but little long-term impact (Sobotka, Matysiak and Brzozowska, 2019). Policies that lower the costs of childbearing in a predictable way over several years, not just around the time of birth, are more likely to be effective. Clashes between work and family life underline the need to advance gender equality, achieve work-family balance, subsidize costs for childbearing and housing, and ensure that the private sector allows flexible working arrangements and access to parental leave for both parents (Wilkins, 2019).

Improving work-family balance and guaranteeing income security could have positive impacts on dependency ratios and fiscal sustainability. Such policies can assist men and women in realizing their desired family size while contributing to financial independence at older ages, especially for women. They may also support the voluntary extension of people's working lives.

CHAPTER 2

TOWARDS LIVING LONGER, HEALTHIER LIVES

KEY MESSAGES

- There is no doubt that increasing human life expectancy is a long-term trend. Survival to older ages has become more common worldwide. Health among older people varies considerably, however, both among and within countries.

- Increased global life expectancy reflects better health overall. The number of years lived in good health, or at least without severe disability, has risen in many places.

- Men live, on average, fewer years than women. Yet older women experience a greater prevalence of morbidity and disability. Given the dominance of cardiovascular disease and cancer as causes of death, different personal behaviours and diverse exposures to environmental risks both contribute to group variations in morbidity and mortality, including by sex.

- Inequalities in income, education and living arrangements, including those due to race or ethnicity, help explain observed differences in the health of individuals and their risks of dying over the life course. Uneven access to affordable, quality health care can lead to unequal use of services and disparities in life expectancy.

- Rapid growth in the number of people reaching older ages highlights the importance of promoting health and preventing and treating illness throughout the life course, as conditions experienced earlier in life can have a substantial impact on a person's health and well-being at older ages. The concept of "healthy ageing" highlights the importance of maintaining functional ability as people grow older to enable their continued participation in society.

- Societies with ageing populations need to adapt to having increasing numbers of older persons with a wide range of functional abilities. The ability to perform critical functions and to participate in everyday activities depends not only on the intrinsic capacity of individuals but also on the social and physical environments in which they live. Supportive environments can help older persons to remain active and independent as they age.

Virtually all people aspire to live longer lives. Some may wonder whether the extra years of life will be spent in good health or consumed by disease and disability. For individuals, deteriorating health at older ages raises concerns about living independently and securing needed care and support. From a collective perspective, societies need to adapt to increasing longevity by adjusting labour markets, social security and health-care systems, and other institutions.

The United Nations has recognized that older persons have a right to supportive environments to enjoy healthy lives and fully participate in and contribute to their families, communities and broader societies. To advance action along these lines, Member States of WHO and the United Nations proclaimed 2021-2030 to be the United Nations Decade of Healthy Ageing. The Decade builds on previous international agreements, including the 2002 Madrid International Plan of Action on Ageing and programmes such as the 2016-2020 WHO Global Strategy and Action Plan on Ageing and Health.

A.

A LONGER LIFESPAN IS A SUCCESS STORY

Around the world, populations have shifted from high to low mortality rates as part of a larger process known as the demographic transition. Despite differences in the timing and pace of this shift, the average length of life, or life expectancy at birth, has increased progressively in nearly all countries and globally. Declining mortality accompanies a change in the distribution of deaths from younger to older ages.

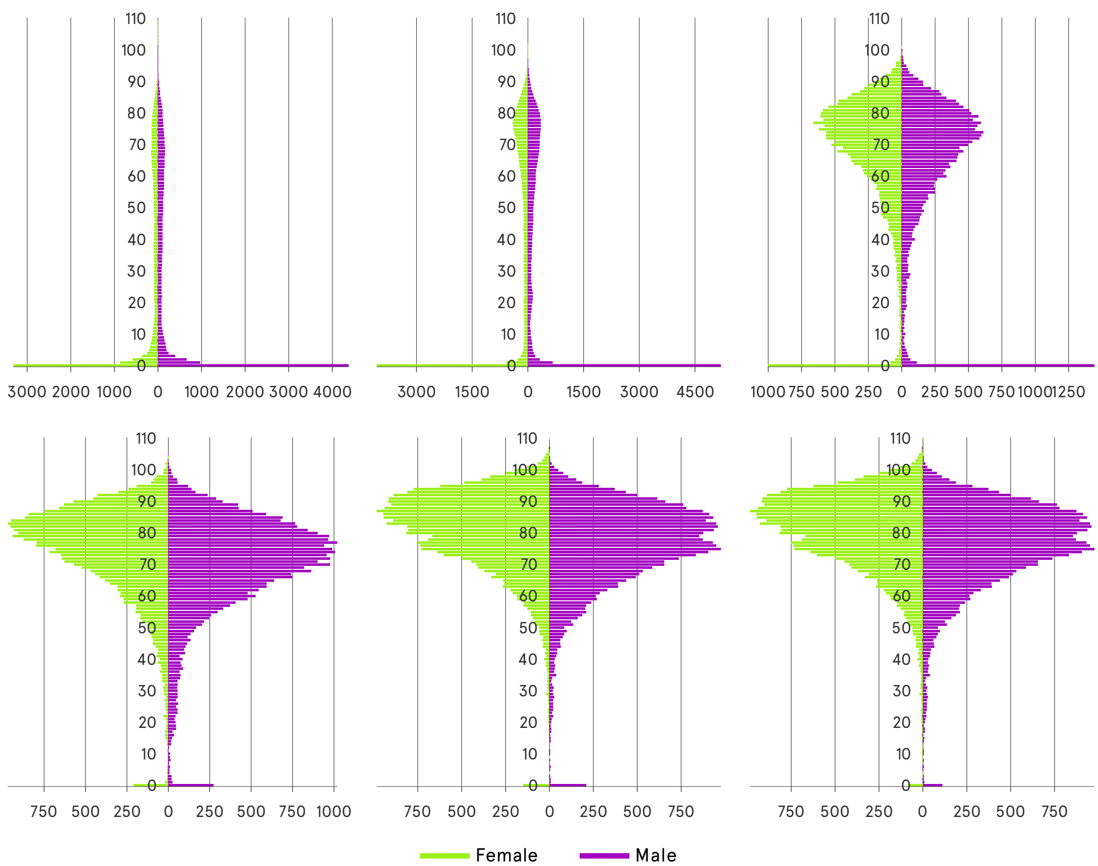
Figure 2.1 illustrates this pattern with historical data from Denmark from 1835 to the present. In the nineteenth century, a large share of deaths occurred among children and young adults, with a secondary concentration among people ranging in age from 60 to 80 years, approximately. Over time, infant and child mortality declined due to preventive health measures, better treatment of infectious diseases, and improvements in maternal and child health care.

Deaths in Denmark started to tilt towards adult ages in the early twentieth century, reflecting a decline in the number of premature deaths among both men and women. This shift intensified by the middle of the century, at which point there were very few deaths below age 30 and a large and increasing concentration among older adults, especially octogenarians, nonagenarians and centenarians.

Such trends have unfolded now in countries in all world regions. A summary expression for the growing proportion of deaths within a short age interval is the "compression" of mortality (Wilmoth and Horiuchi, 1999; Kannisto, 2000; Robine, 2021). This term describes the clustering of deaths around the most frequent or modal age at death. A higher modal age indicates a shift towards more advanced ages at death (or mortality delay) and an increase in average lifespan. Recent rises in external causes of death,[10] however, have halted this compression, slowed the rise in life expectancy and increased the variability of ages at death for several countries in Europe and Northern America (Beltrán-Sánchez, Finch and Crimmins, 2015).

In the early twentieth century, increasing life expectancy in the more developed regions arose mostly from decreased mortality among infants and young children (Thatcher and others, 2010). More recently, mortality decline at older adult ages has become a major driver of rising life expectancy in countries with already low levels of mortality. Indeed, since the early 1990s, more than two thirds of the average gain in life expectancy in low-mortality countries has come from extended years of life among those aged 60 or older. In countries with higher levels of mortality, recent increases in life expectancy have mostly resulted from reduced mortality at younger ages.[11]

Figure 2.1 **Number of deaths by sex and age in Denmark, 1835-2020**



Source: Robine (2021), based on data from the Human Mortality Database. Available at www.mortality.org/.

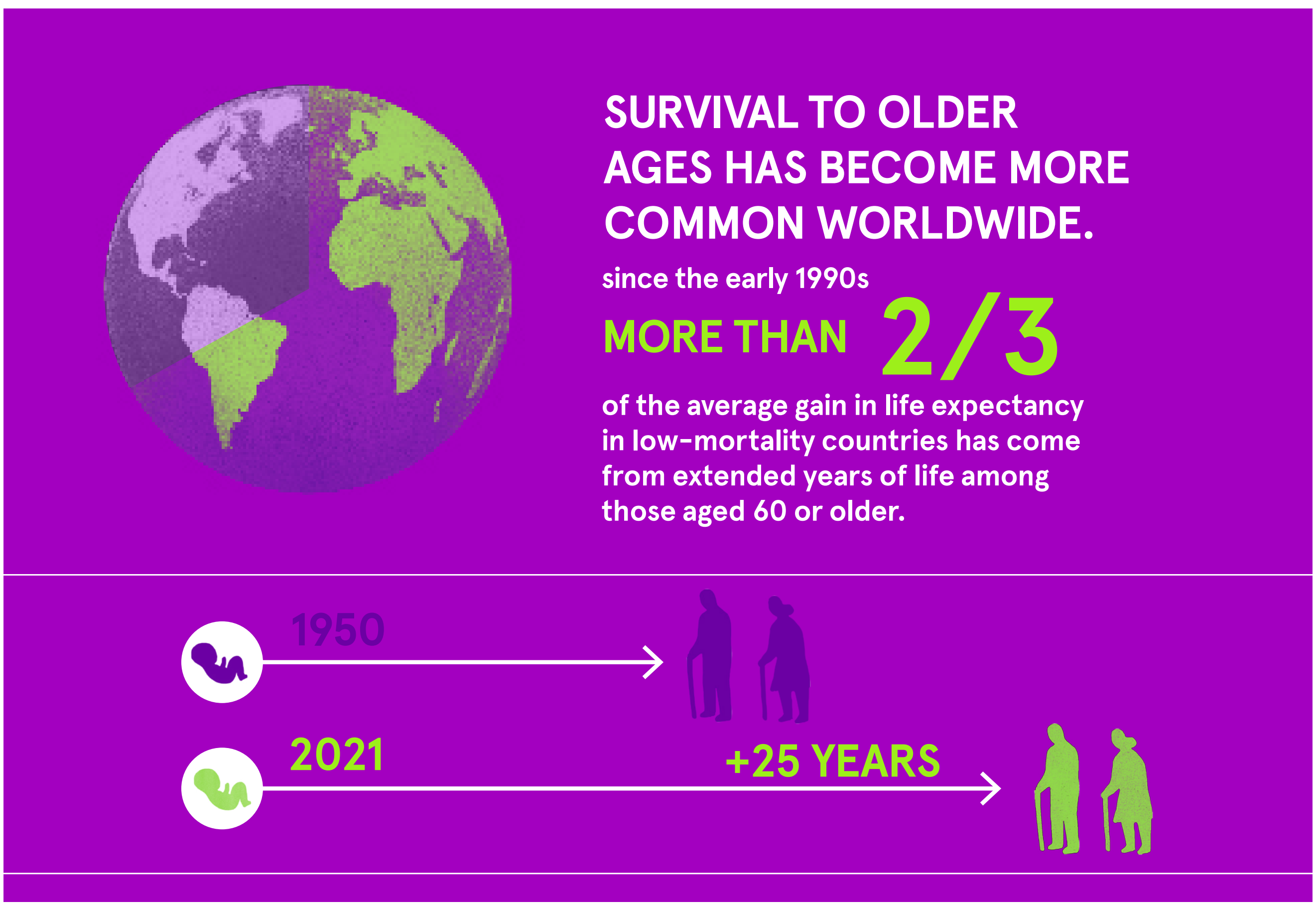
10 External causes of death include intentional and unintentional injury, poisoning (including drug overdose), and complications from medical or surgical care (WHO, 2022b).

11 High-mortality countries refer to those where life expectancy at birth was below age 60 from 1990 to 1995; low-mortality countries had a life expectancy at birth of age 75 or higher in the same period.

Globally, a baby born in 2021 could expect to live on average almost 25 years more than a newborn from 1950 (for a discussion of the impact of the COVID-19 pandemic, see box 2.1).[12]

Globally, a baby born in 2021 could expect to live on average almost 25 years more than a newborn from 1950

While all regions have experienced rising life expectancy, the greatest gains have been in Eastern and South-Eastern Asia, where improvements in survival have added nearly 34 years to the average length of life. In 2021, people in that region could expect to live 76.5 years compared to just 43 years in 1950. Unsurprisingly, high-income countries and areas in Asia and the Pacific and in Europe feature at the top of life expectancies globally. Middle-income countries follow suit with multiple countries in Latin America and the Caribbean having also attained a life expectancy of 80 or more years. Most low-income countries, although subject to higher mortality rates, are also seeing significant gains in life expectancy (United Nations, 2022a).



12 These values reflect "period" life expectancy, which shows the average age to which a newborn would live if current death rates continued during their entire life. The estimates do not predict actual lifespans.

BOX 2.1

COVID-19 HAS DISRUPTED STEADY GAINS IN GLOBAL LIFE EXPECTANCY

Global life expectancy at birth fell to an estimated 71 years in 2021, down from 72.8 in 2019, due mostly to the COVID-19 pandemic. Some countries saw greater declines than others. In Central and Southern Asia and Latin America and the Caribbean, life expectancy fell by almost three years on average between 2019 and 2021. As with many causes of death, COVID-19 took many more lives among older people than younger ones. Older people have a greater risk of serious illness and higher case fatality rates.[13]

Environmental and social factors account for substantial variation across countries in old-age COVID-19 mortality. Such factors include the prevalence of comorbidities, the presence of robust old-age social protection systems and the capacity of health systems to protect those at increased risk.

The living arrangements of older persons in congregate settings emerged as a factor increasing the risk of contracting and dying from COVID-19 by heightening the efficiency of transmission (Comas-Herrera and others, 2020).

Based on the latest available estimates of the effect of the pandemic on mortality, global life expectancy at age 65 fell by 1.2 years between 2019 and 2021, representing more than 71 per cent of the total decline in life expectancy at birth. Outside Australia and New Zealand, all regions of the world experienced a drop-off in the average number of years a 65-year-old person could expect to live. This was sharpest in Central and Southern Asia (−2.3 years) and Latin America and the Caribbean (−1.5 years) (United Nations, 2022a, 2022b).

13 The case fatality rate refers to the share of people who died from COVID-19 among all persons infected with the virus during a certain period.

B.

WOMEN HAVE A SURVIVAL ADVANTAGE – BUT IT MAY NOT LAST

Women live longer, on average, than men. A female survival advantage exists in nearly all populations with available data, both past and present (table 2.1) (United Nations, 2020b). Historical data suggest that the sex gap may have been no more than two or three years in pre-industrial populations (Beltrán-Sánchez, Finch and Crimmins, 2015). In more recent times, however, the gap has widened, especially where mortality levels are relatively low. In 1950, women could expect to live almost four years more than men globally. In 2021, although both men and women could anticipate living longer than in 1950, the difference between the two had increased to more than five years. Global life expectancy at birth is projected to increase further for both women and men, reaching 80 years for women and 75 years for men by 2050.

Table 2.1 **Life expectancy at birth by sex, world, regions and income groups, 1950, 2021 and 2050**

	1950		2021		2050	
REGION	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE
World	48.4	44.6	73.8	68.4	79.8	74.8
Sub-Saharan Africa	38.7	36.2	61.6	57.8	69.1	64.3
Northern Africa and Western Asia	43.4	39.8	74.8	69.7	80.8	76.0
Central and Southern Asia	40.2	41.5	69.6	65.9	79.4	74.9
Eastern and South-Eastern Asia	45.6	40.3	79.6	73.6	84.1	79.4
Latin America and the Caribbean	50.8	46.5	75.8	68.8	83.1	78.1
Australia/New Zealand	71.6	66.7	85.6	82.7	88.6	85.4
Oceania (excluding Australia and New Zealand)	43.9	40.3	70.1	64.6	74.9	68.4
Europe and Northern America	66.6	61.2	80.4	73.9	86.1	81.6
World Bank income groups						
High-income countries	65.0	58.2	83.1	77.5	87.6	83.4
Middle-income countries	44.9	42.2	72.7	67.6	79.6	74.8
Low-income countries	35.1	28.6	65.0	60.0	71.6	66.0

Source: United Nations (2022a).

Changes in the sex gap in life expectancy closely relate to shifting disease patterns. From the late nineteenth century until the early twenty-first century, an increasing share of deaths came from chronic and degenerative diseases and conditions. For several decades, cardiovascular disease has been the leading cause of death in most low-mortality countries. While the sex difference for some causes of death is small (for example, most infectious diseases and cancers), the male disadvantage is relatively large for cardiovascular ailments. Over the next few decades, continuing reductions in morbidity and mortality from cardiovascular disease may bring a gradual reduction in the life expectancy gap between men and women, at least for low-mortality countries (Crimmins and others, 2019).

Although girls and women tend to experience lower mortality rates across the age range, the female advantage in survival is most noticeable at older ages. Older women have lower cumulative exposures than men to lifestyle risk factors such as tobacco and alcohol use, along with differences in diets, occupational hazards, environmental exposures and use of health care. Men are more likely to die from cancer, cardiovascular disease and other ailments associated with exposure to lifestyle risks, particularly after age 65. Women often experience higher rates of chronic conditions, such as arthritis, osteoporosis and depression, which may be debilitating and diminish the quality of life but are less likely to result in death (Carmel, 2019; OECD, 2021a; United Nations, 2020c).

With men and women experiencing somewhat different health problems, one sex cannot be characterized as enjoying better health. Much depends on historical time, geographic location and individual behaviours (Crimmins and others, 2019).

C.

MANY FACTORS DETERMINE HEALTHY AGEING

As with mortality risks, the health status of older people diverges considerably. Different experiences of illness and disability reflect diversity among individuals in genetics, life histories, environmental exposures, personal behaviours and access to health care, as well as random variation.

Ongoing examination has probed the relationship between the "quantity" and "quality" of life. The WHO defines healthy ageing as "the process of developing and maintaining the functional ability that enables wellbeing in older age" (WHO, 2020a, p. 8). Functional ability depends on having the capabilities "that enable people to meet their basic needs, learn, grow and make decisions, be mobile, build and maintain relationships, and contribute to society" (ibid., p. 11). Several factors influence functional ability, such as the presence and severity of disease or injury (morbidity) and age-related physiological changes (biological ageing or senescence), which affect a person's intrinsic capacity. In addition, the physical, social and economic environments in which people live can promote or hinder healthy ageing.[14]

Although healthy ageing centres on the health status and needs of older people, the term refers to a process that spans the life course. Changes conducive to increased longevity and greater well-being at older ages may occur early in life. Better nutrition in childhood, improved access to health care throughout life, reduced exposure to hazardous working conditions and favourable behavioural changes in terms of smoking, diets or physical activity can all contribute to healthier older lives (Crimmins and others, 2019). Risks of specific morbidities and mortality vary widely across individuals of the same age. This dynamic process across the life course produces great heterogeneity in the patterns and trajectories of both intrinsic capacities and functional abilities among older people (WHO, 2015, 2020).

Many indicators can assess the average number of years that a person can expect to live in good health, including disability-free life expectancy, health-adjusted life expectancy, chronic disease-free life expectancy, life expectancy in good perceived health and cognitive-impairment-free life expectancy. An assessment of health status and an estimation of expected years lived in good or poor health can vary by indicator.

Changes conducive to increased longevity and greater well-being at older ages may occur early in life

D.

LONGER LIVES ARE NOT ALWAYS HEALTHY, ESPECIALLY FOR WOMEN

Healthy life expectancy is analogous to life expectancy but adds a quality dimension to the quantity of life. It offers a summary measure of how many remaining years are expected to be lived in good health, free of disease or disability. A specific measure of healthy life expectancy is disability-free life expectancy. Whether disability-free life expectancy increases in proportion to total life expectancy is a question of debate.

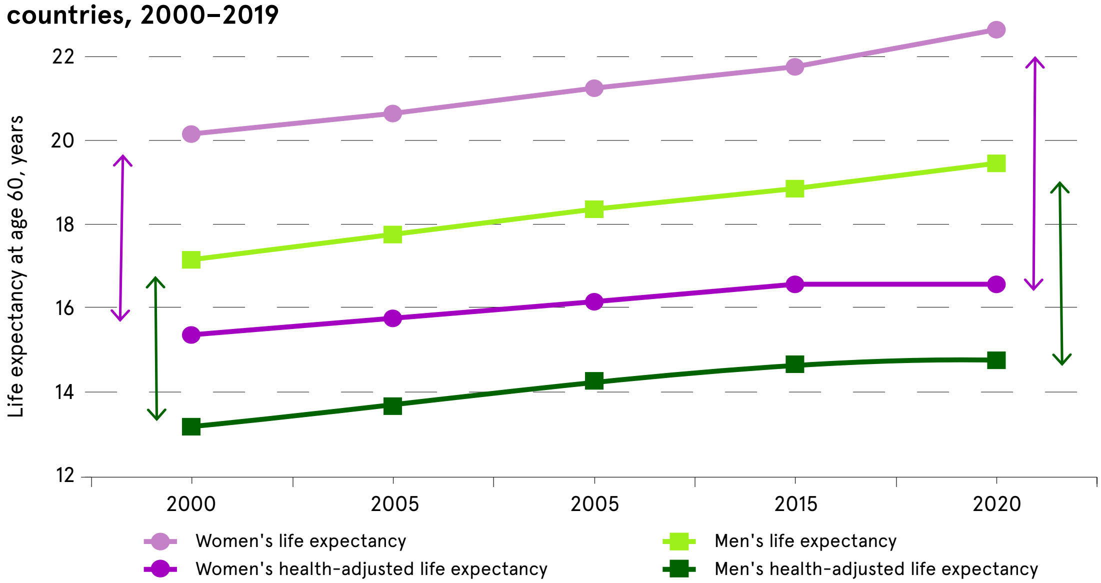
A recent analysis of selected countries in Asia, Western Europe and Northern America found that increased life expectancy in recent decades was accompanied by a proportional increase in disability-free life expectancy, with the number of years lived without disability as a share of total life expectancy remaining fairly constant. The study concluded that all life spans are increasing, meaning that life expectancy without disability as well as life expectancy with disability are increasing in roughly the same proportion. The implication is that "while on the one hand, an increase in life expectancy in good functional health should be welcome, there should also be concerns about the increase in the number of years lived with disabilities" (Robine, 2021, p. 12).

14 Environments include the home, community and broader society, and all the factors within them, such as the built environment, people and their relationships, attitudes and values, health and social policies, the systems that support them and the services that they implement (WHO, 2020b, p. 10).

There is less evidence about levels and trends of healthy life expectancy for other parts of the world, including sub-Saharan Africa, Eastern Europe, Latin America, Northern Africa and the Middle East, and Southern Asia. In India, older people (aged 60 or over) experienced both an increase in life expectancy and in life expectancy without mobility limitations between 1995 and 2004 (Sreerupa and others, 2018). A relative compression of disability (i.e., the reduced proportion of remaining life with mobility limitations) took place among older men in rural areas compared to a relative expansion of disability (increased proportion) among older women in urban areas. In South Africa, healthy life expectancy based on self-rated health at ages 50 and above increased more than life expectancy from 2005 to 2012 (Chirinda and others, 2018). In São Paulo, Brazil, disability-free life expectancy at age 60 fell sharply between 2000 and 2010 while life expectancy kept increasing (Campolina and others, 2014). Life expectancy free of cognitive impairment at age 60, both the observed value in years and as a proportion of total life expectancy, increased from 2003 to 2016 in Chile (Moreno and others, 2019).

More systematic and comparable data to assess a population's health status come from measures of health-adjusted life expectancy commonly used by WHO since the early 1990s. Health-adjusted life expectancy is the number of years that a person is expected to live in good health plus fractions of years lived with some form of disease, injury or disability (WHO, 2020c). According to the latest estimates, between 2000 and 2019, global life expectancy at birth increased by six years, from 67 to 74 years.[15] Healthy life expectancy also increased by six years, from 58 to 64 years.

Figure 2.2 **Life expectancy and health-adjusted life expectancy at age 60, by sex, selected countries, 2000–2019**



Source: WHO (2020c).

Note: Estimates for 183 countries with available data.

15 Slight differences exist between estimates from WHO and the 2022 revision of the *World Population Prospects*.

Figure 2.2 presents life expectancy and health-adjusted life expectancy at age 60 between 2000 and 2019. The difference between the two indicates the number of years lived with a given disease burden or disability. On average, life expectancy at age 60 increased faster than health-adjusted life expectancy for both men and women. In 2000, the gap for men was 4.1 years; for women, it was 5.3 years. By 2019, the gap had increased to 4.7 years for men and 6.0 years for women. Globally, the proportion of time spent in ill-health has slightly increased at birth and at age 60. These averages, however, mask significant variation within and across countries (WHO, 2020b).

Surveys based on self-reported disabilities often find that older women are more likely than older men to indicate that they are disabled. Disability in this context refers to an inability to perform certain activities of daily living, such as walking across a room, feeding oneself or using toilet facilities without assistance. This gap may indicate women's greater propensity to report health problems. Yet researchers have confirmed the higher prevalence of disability among older women through direct physical measurements. Overall, the available evidence supports the conclusion that the sex gap in disability at older ages is real, with women having a noticeable disadvantage (Crimmins and others, 2019).

E.

DISPARITIES IN HEALTH AND LIFE EXPECTANCY INTERSECT WITH MULTIPLE INEQUALITIES

While all regions of the world have seen substantial improvements in life expectancy, the risk of death differs from one person to another, depending on access to health care and socioeconomic status, among many factors. Increased inequality may emerge due to declining life expectancy among lower socioeconomic groups even as it continues to rise in higher socioeconomic groups.

Cost and other barriers can lead to disparities in access to and use of health care, adoption of technological innovations in medicine and preventive health behaviours. Those with higher socioeconomic standing have greater access to resources, including better and earlier medical care to avoid disease or minimize its impact. Wider societal, economic, environmental and cultural conditions influence some risk factors associated with many diseases affecting older persons. These dynamics can result in social stratification and lead to inequalities in health and ultimately life expectancy.

Recent increases in the inequality of life expectancy within a number of developed countries has coincided with widening gaps between the wealthiest and the poorest members of the population. For example, in the United States and Denmark, life expectancy has been stagnant or even declined among low-income groups while the wealthiest continue to show gains (Kinge and others, 2019; Dahl and others, 2021). Inequalities in life expectancy associated with income levels are not uniform among men and women, however. In Sweden, the gap in life expectancy at age 65 for men from the highest and lowest income quartiles increased from 3.4 to 4.5 years between 2005 and 2016. For women the gap grew from 2.3 to 3.4 years (Fors, Wastesson and Morin, 2021).

Recent increases in inequality in life expectancy in some developed countries have coincided with widening gaps between the rich and the poor

A study of 15 European countries using level of education as a measure of socioeconomic status found the most educated consistently living longer than those with lower education (Mackenbach and others, 2019). The results varied among countries, with a 2.1-year difference between men in Spain with the highest and lowest levels of education and a more than 8-year difference between these two groups in Lithuania. The gaps were smaller for women but still persistent. Women in Spain had a 0.6-year difference in life expectancy between low- and high-income groups, while women in Lithuania saw a gap of more than 4 years.

Significant racial inequalities in life expectancy persist in the United States, partly attributable to racial differences in education and income. In some cases, these gaps have narrowed. For example, between 1980 and 2018, college-educated adults lived three more years, on average, between ages 25 and 75 than those without a degree (Case and Deaton, 2021). This educational divide was present for college-educated Black and White people alike. Over this period, the racial divide in expected years of life narrowed by 70 per cent for those with or without a college degree, while the educational divide in average longevity doubled for both White and Black people.

Risk factors explain much of the inequality in life expectancy by income and education. Behavioural risks (smoking, alcohol consumption, being overweight, physical inactivity) are key channels for socioeconomic status to impact lifespan (Al Snih and others, 2007; Tian and others, 2011). For instance, smoking prevalence and obesity have fallen much faster among well-educated and higher-income Americans than among those with lower socioeconomic status (Bor, Cohen and Galea, 2017).

Socioeconomic status has largely determined the unequal impacts of COVID-19 infection and disparities in mortality rates (box 2.1). Lower-status groups were less likely to work from home and more likely to face infection (Mena and others, 2021), even as they had more limited access to health care. Further, risk factors or comorbidities that increased COVID-19 mortality and morbidity (cardiovascular disease, diabetes, heart diseases and obesity, among others) are higher among lower socioeconomic groups.

In the United States, during the pandemic, ethnic and racial disparities in hospital outcomes for Medicare beneficiaries aged 65 years and older included higher death rates (Song and others, 2021). People in counties with low socioeconomic status had higher rates of both COVID-19 cases and fatalities than those in counties with higher socioeconomic status (Hawkins, Charles and Mehaffey, 2020).

F.

PREMATURE DEATHS HAVE DECLINED BUT THE FUTURE IS UNCERTAIN

The COVID-19 pandemic reversed many recent gains in health and well-being. Global life expectancy at birth was lower in 2021 by 1.7 years compared to 2019. Eight years from now, however, when the 2030 Agenda for Sustainable Development and the Decade of Healthy Ageing come to an end, it is expected that life expectancy at birth will have recovered worldwide.[16] At that point, average longevity is projected to be 82 years in the more developed regions and 73 years in the less developed ones. By then, life expectancy at age 65 is predicted to reach 21 and 17 years in the more and less developed regions, respectively, and the share of people aged 65 years or more will have risen globally from 10 to 12 per cent.

More and more people are surviving at younger ages and therefore dying at older ages. While few studies examine developing countries with high and intermediate levels of mortality, those countries may follow paths of mortality decline similar to those in the more developed countries. Many developing nations, however, are still struggling to prevent premature deaths from communicable and non-communicable diseases, including neonatal conditions, lower respiratory infections and diseases of the circulatory system (Gouda and others, 2019). Given this situation, and considering the global impacts of the COVID-19 pandemic on trends and patterns of morbidity and mortality, future trends are uncertain at least in the short term.

While all regions have seen substantial increases in life expectancy, striking inequalities persist both among and within countries. These are tied to income, education, race and other factors and to differences in living arrangements. They in part determine the health of individuals across the life course as well as their risk of dying. Disparities in life expectancy also arise from unequal access to affordable, quality health care.

While there is little doubt about the long-term trend towards longer lives, the relationship between longevity and health at older ages has varied over time and across countries. Although the length of a healthy life, or at least the number of years lived without severe disability, has increased in many places, it remains unclear if longer

16 In 2021, life expectancies globally were affected by the impact of the COVID-19 pandemic on death rates, particularly among older persons. For the projection period, all countries are assumed to catch up with their pre-COVID-19 pandemic levels and trends in life expectancy at birth between 2022 and 2025, depending on their mortality experience in 2020 and 2021 and their adult COVID-19 vaccination coverage in early 2022. Such recovery can be considered a reasonable assumption in a context of uncertainty about the implications of the pandemic over the short and medium term in different regions (United Nations, 2022b, 2022c).

lives go hand-in-hand with healthier ones in all situations. The answer depends on a population's health profile, the time period considered and the specific measure used to evaluate health status. A central goal of the Decade of Healthy Ageing is to ensure that growing populations of older persons enjoy additional years of good health. Disease prevention, access to health care over the life course, and supportive and enabling environments all play key roles in achieving this objective.

CHAPTER 3

WHAT POPULATION AGEING MEANS FOR ECONOMIES AND INTERGENERATIONAL EQUITY

KEY MESSAGES

- **Changes in population age structure unfold at different times and speeds. The impact of ageing on the economy depends on where countries are in their demographic transition as well as their economic structure and level of social development, including education and human capital formation.**

- **The young and the old consume, on average, more than they produce through formal labour. Families, markets and governments mediate the reallocation of economic resources from one age group to another to smooth consumption over the life course. An ageing population calls for the continuous adaptation of channels for redistribution.**

- **Ageing societies may face fiscal challenges due to rising health-care, long-term care, retirement and other old-age support costs, combined with a potential reduction in government revenue from fewer working-age taxpayers. Addressing these issues starts with making ageing integral to economic development and ensuring that older people can use their expertise and skills in ways that benefit them and the broader economy.**

- **Women's labour force participation rate remains below that of men in every age group, reflecting gender gaps in education and the predominant share of women in unpaid work, among other concerns. Such patterns mean that women generally receive lower pension benefits in most countries. Pension systems need to be transformed to help reduce gender gaps and protect women's income security in old age.**

- **In all societies, policymakers must support the reconciliation of conflicting work and family demands through effective and equitable social and economic policies.**

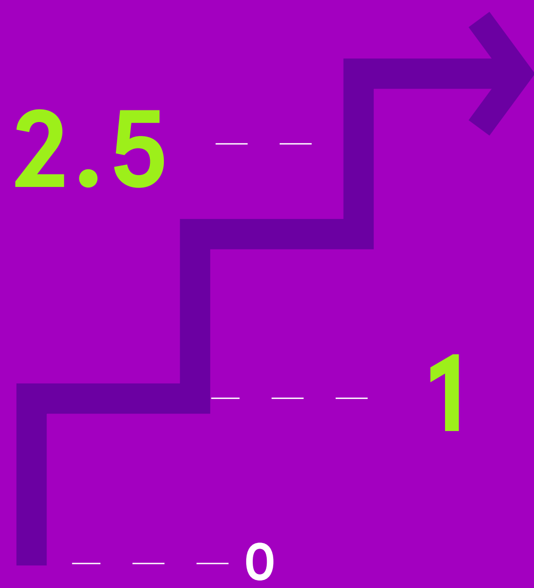
FACTS FROM CHAPTER 3

THE SHIFT IN THE AGE STRUCTURE OF A POPULATION CAN RESULT IN DEMOGRAPHIC DIVIDENDS THAT CAN CONTRIBUTE BETWEEN

1 AND 2.5

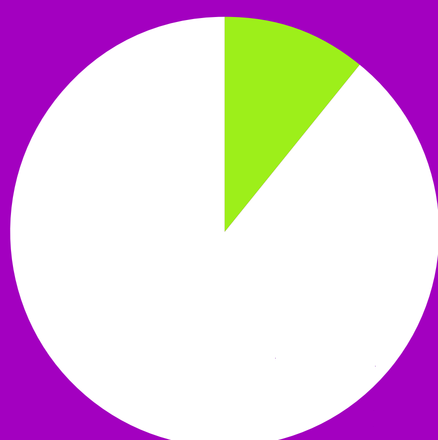
PER CENT

OF ANNUAL GROWTH IN GDP PER CAPITA



2015

the life cycle deficit, or unmet resource needs of all older persons worldwide



was estimated at

11.5

PER CENT

of the total labour income

Population ageing has profound impacts on the economy depending on where countries are in their demographic transition. It poses challenges but also opens opportunities.

**Population ageing has profound impacts on the economy depending on where countries are in their demographic transition.
It poses challenges but also opens opportunities**

As more countries move from high to low fertility and mortality levels, the global population is undergoing major changes in age distribution. This shift is unfolding at different times and speeds across countries and regions, producing ageing at intermediate and advanced stages.

The young (aged 0 to 19) and, in most societies, the old (aged 65 or older) consume, on average, more than they produce through their labour. Most working-age people (aged 20 to 64), by contrast, consume less than they produce through their own labour. Families, markets and governments support this pattern of income and consumption over the life course by mediating the reallocation of economic resources from one age group to another. For older people, intergenerational reallocations can arise from their individual accumulation of wealth, including savings or other financial capital and property or physical capital. Other reallocations come from private transfers, such as between family members, and public transfers, including through government programmes.

Public systems for intergenerational transfers are based on the prevailing social contract. Children, young people and older persons receive education, health care, pensions and other support from the working-age population, which benefitted from such support from earlier generations when it was young and can expect the same from future generations when it grows old. Older people often continue to contribute to the economy and society through various forms of formal and informal work, including childcare, volunteerism and part-time employment as well as productive investment. Within families, older persons may make net transfers to their children.

In 2015, the life cycle deficit, or unmet resource needs of all older persons worldwide, was estimated at 11.5 per cent of the total labour income of all those who work, irrespective of their age, on average, based on a sample of 119 countries (Mason and Lee, 2018). This deficit, which is larger in high-income than low-income countries, needs to be financed through either public or private transfers.

Countries significantly diverge in how they finance the deficit. Most rely on some combination of public transfers, asset-based reallocations (net asset income or spending down of savings) and private or family transfers. This combination and overall available resources determine the financial impact of ageing on a society and the potential policy responses. In many low- and middle-income countries, older persons depend heavily on asset-based reallocations and to a smaller extent on public transfers. Family transfers play a significant but comparatively smaller role in many countries. Net private/family transfers to the older population tend to be negative; older persons generally transfer more to their children and grandchildren than what they receive from them.

Rapid population ageing may escalate needs for health care, long-term care and pension expenditures at a time when a growing share of older people may constrict the productive capacity of the economy (IMF, 2019). This can translate into impacts on public finances, requiring mitigation through effective and equitable strategies. Significant population ageing may require reforming economic and social protection structures, public finances, and public and private pension schemes, bearing in mind that the effects of ageing on the economy and public finances are not inevitable. Much depends on policy choices.

The effects of ageing on the economy and public finances are not inevitable. Much depends on policy choices

How countries measure population ageing is continuously evolving as people live longer and healthier lives. Chronological ageing or the share of people aged 65 years and older has traditionally informed fiscal and social planning as a summary statistic indicating the scale of economic, social security and health needs among older persons. Older people are not a homogenous group, however. While chronological age is a valuable measure of ageing, it is also important to examine how different age groups compare in terms of economic productivity, health, functional abilities and/or biological age, as these attributes may more directly capture socioeconomic and health requirements. Current measures of labour force participation similarly do not adequately reflect the significant role that older people play in the informal economy, underlining the need to develop more accurate measures of the economic contribution of older people.

This chapter examines how countries can navigate the economic challenges and opportunities of ageing. This includes assessing key labour market variables, such as the size and composition of the working-age population and the labour force participation rate, given their impact on overall productive capacity. The chapter also considers core strategies to harness the opportunities of ageing and ensure its positive contribution to the economy and society more broadly.

A.

AGEING OPENS DOORS AND POSES CHALLENGES

The multiple economic impacts from population ageing require careful navigation through appropriate policy responses tailored to different stages of demographic transition. Dimensions to consider include demographic dividends, the productive capacity of the economy, consumption patterns, financing consumption and achieving sustainable economic growth.

1. TWO DEMOGRAPHIC DIVIDENDS CAN DRIVE GREATER GROWTH

The shift in the age structure of a population can result in two demographic dividends that at their height can contribute between 1 and 2.5 per cent of annual growth in GDP per capita (Mason and others, 2017). A first demographic dividend can take place when declines in both fertility and mortality rates result in an increasing share of the working-age population. Having fewer dependents and more workers frees resources for consumption or investment in accelerated economic and social development. During the first dividend period, the ratio of effective producers to effective consumers in the economy is rising. This period can be quite long, often lasting five decades or more (figure 3.1). But eventually, lower fertility reduces the growth of the labour force even as longer life spans accelerate the growth of the older population. As a result, increases in per capita income start to slow.

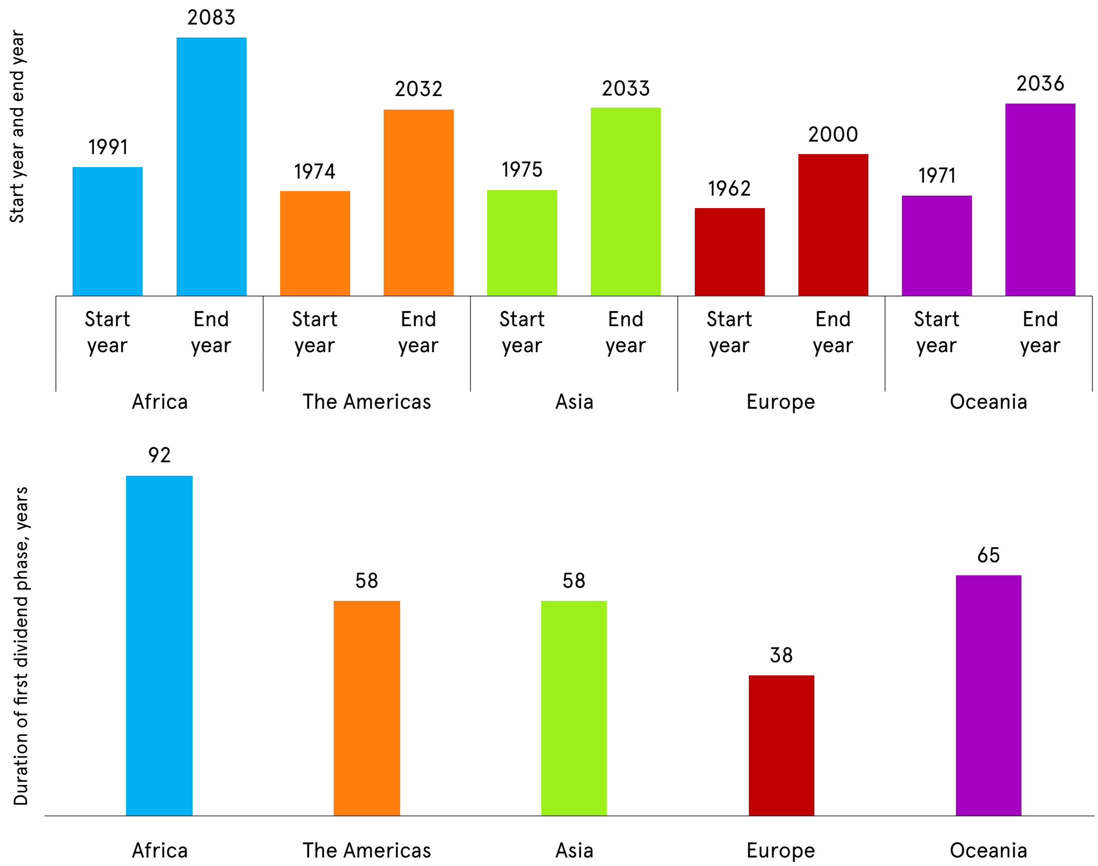
The first demographic dividend can have a lasting impact on economic growth if gains in per capita income are used to increase human capital through investment in health and education, to accumulate physical capital, to support technological innovation and to strengthen growth-inducing institutions. Realizing the first demographic dividend also depends on the ability of labour markets to absorb and provide decent jobs for the rapidly growing working-age population.

A second dividend may occur later in the demographic transition, driven by the increased capital intensity of the economy and the savings of working-age individuals for retirement. A population concentrated at older working ages and facing an extended period of retirement has a powerful incentive to accumulate assets, unless people are confident that families or governments will provide for their needs. The rise in savings among people at older working ages can support greater human and physical capital accumulation, increased productivity and higher national income, and stimulate further economic growth. Raising the ratio of capital to labour makes labour more productive, a "capital deepening" that drives the second dividend. This period remains as long as savings generated in the economy are invested productively in human, physical and environmental capital.

The timing and duration of the first demographic dividend has varied considerably across regions (figure 3.1). In the Americas, Asia and Oceania, it likely started in the 1970s, with an end predicted in the 2030s. Ageing in Europe started earlier with the first demographic dividend phase estimated to have concluded around 2000. In Africa, the demographic dividend phase likely started in the early 1990s but may last much longer than in other regions, ending only in the early 2080s (Mason and others, 2017).[17]

17 The United Nations Department of Economic and Social Affairs has published the *National Transfer Accounts Manual: Measuring and Analysing the Generational Economy*. This methodology provides a link between population trends and economics. Its foundation is a life course analysis of income and consumption for 60 countries and territories that make up a large part of both the global population and GDP. Participants in the National Transfer Accounts project have extended the estimates and analyses to another 106 countries, bringing the total to 166.

Figure 3.1 **Years marking the beginning and end of the demographic dividend (upper panel) and average duration of the first demographic dividend (lower panel), both by region**



Source: Mason and others (2017).

2. AGEING HAS AN IMPACT ON PRODUCTIVE CAPACITY

The changing size and composition of the working-age population and labour force are key factors in the impact of population ageing on productive capacity. In any economy, productive capacity drives growth and structural economic transformation. Such capacity encompasses the diverse competencies, resources, skills, infrastructure, technological capabilities, institutions and knowledge systems that a country needs to produce and deliver progressively more sophisticated goods and services in an efficient and competitive manner (UNCTAD, 2021).

Economic activity varies by the age structure of a population. As it shifts to older ages, the proportion of workers (net producers) first increases and then declines while the share of older persons (net consumers) rises. This compositional change can reduce aggregate economic output unless sufficient increased productivity, brought about by investment in human and physical capital, offsets the effects of a shrinking labour force.

A. SIZE AND COMPOSITION OF THE WORKING-AGE POPULATION

An expanding working-age population provides opportunities for faster economic growth. It also poses challenges for job creation due to the increasing number of people entering the labour market. By contrast, a shrinking working-age population can slow economic growth, reduce competitiveness and increase the old-age dependency ratio. If a society is to maintain or raise its standard of living, the working-age population must produce enough to provide for its own material needs while funding public and private transfers to children and older persons and saving for retirement.

In numbers, the global working-age population is expected to grow from 4.5 billion people in 2021 to 5.4 billion in 2050. As a share of the global population, however, it is projected to decline from 57 to 56 per cent. This relatively modest aggregate change averages out greater shifts in some regions, particularly Africa, with a projected doubling in the number of working-age people from 639 million in 2021 to 1.3 billion in 2050.

The working-age population is also growing older, which may further reduce productive capacity, especially in countries relying heavily on manual labour. The number of older working-age people (55 to 64 years) is projected to increase from 723 million in 2021 to 1,075 million in 2050 and to 1,218 million by 2100. Africa is expected to account for two thirds of the projected global increase in older workers from now until the end of the century. The number of older workers in Africa is projected to rise from 63 million in 2021 (9 per cent of the world population aged 55 to 64) to 160 million in 2050 (15 per cent) and 432 million in 2100 (35 per cent).

B. SIZE OF THE LABOUR FORCE

A decline in the working-age population can affect aggregate output and income in an economy unless it is countered by higher labour force participation rates. The labour force participation rate, as defined by the International Labour Organization (ILO), is the percentage of the working-age population 16 years or older that is employed or actively looking for work.[18] It does not include those employed in the informal sector, however. The global labour force participation rate in 2019 was 60.7 per cent: 74 per cent for men and 47 per cent for women (ILO, 2020).

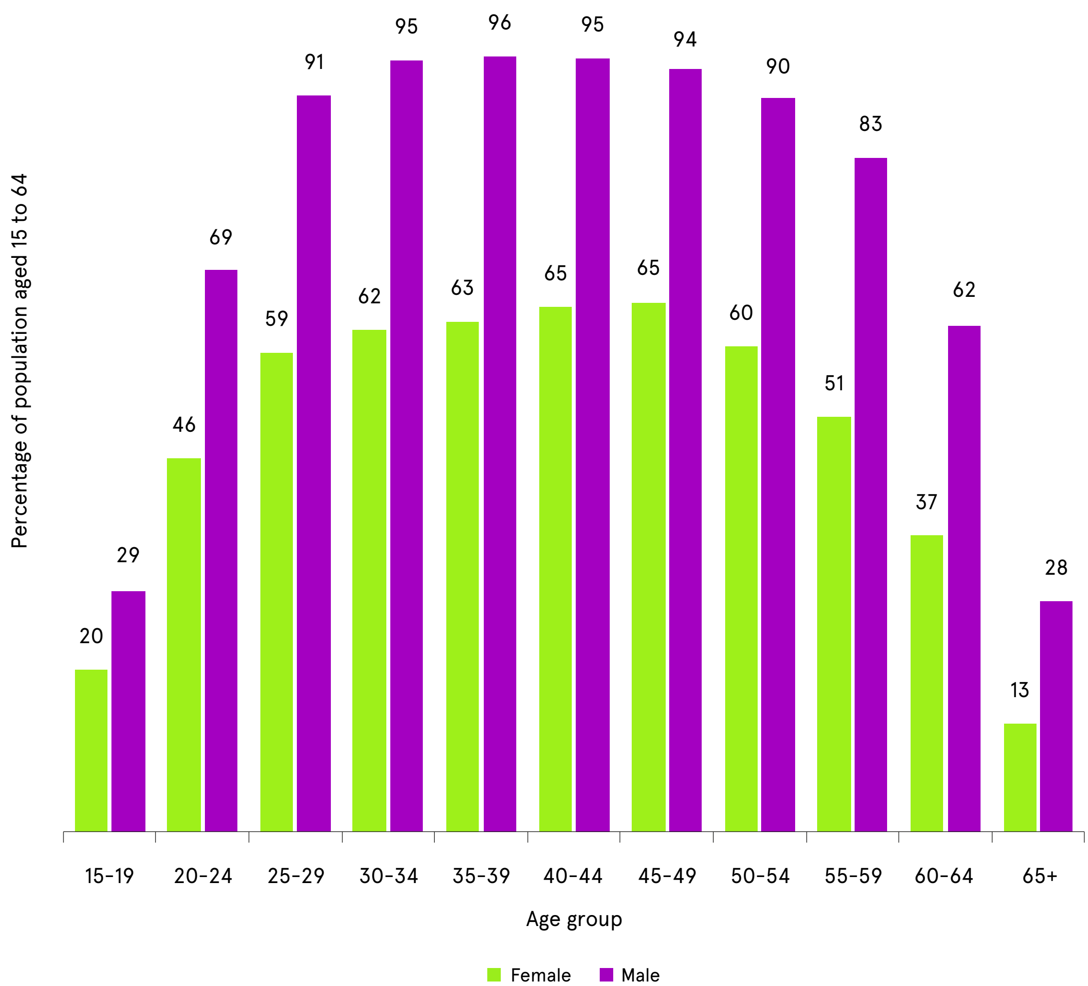
The labour force participation rate generally declines with age, which reduces per capita and even aggregate output and income. Since 1990, the global labour force participation rate has trended downward partly due to the ageing of the working-age population, a direction projected to continue until at least 2030 (ILO, 2018a). This should be of concern especially in regions where the working-age population is shrinking, for reasons that include the higher price of labour expected with a declining labour force. Further, in developing countries, where most older persons work informally in agriculture, a structural economic transformation resulting in a shift

18 The United Nations Population Division defines the working-age population as individuals aged 20 to 64 years. The ILO defines the labour force participation rate, however, as the percentage of the working-age population that is 16 years or older that is employed or actively looking for work. This means that the two indicators are not fully comparable.

of employment away from this sector has caused many to lose their jobs. Changes in Asia, which accounts for over half the world's population, have driven the declining global labour force participation rate.

The global labour force participation rates of men and women diverge by some 30 percentage points, on average, for persons aged 20 to 64 (figure 3.2). While the global labour force participation rate of women aged 30 to 54 is 60 per cent or higher, it is 51 per cent for those aged 55 to 59. This may reflect an earlier retirement age for women in some countries and other factors such as greater expectations that women will care for older family members. Many gender-based patterns and norms constrain the ability of women to participate in the formal labour force. A large proportion of the work that women do is informal and/or unremunerated care work that goes unrecognized by current labour measures.

Figure 3.2 **Global labour force participation rate by age and sex, 2019**



Source: Calculations based on ILO (2020).

Several factors underlie declining labour force participation among older workers over time: poor working conditions, ill health, low job satisfaction, labour market rigidities and the overall ageing of the working-age population. In addition, the institutional arrangements of pensions systems may reduce incentives for older workers to remain on the job. In many developed countries, for example, some workers choose to retire early, prior to the official or statutory retirement age (usually at age 65, although increasingly at older ages). For them, generous early pension benefits make the choice of work over leisure unattractive. Cultural norms and discrimination against older workers, including when it comes to recruitment, retention and retraining, may also help explain early retirement in some countries.

While encouraging older persons to work longer is important, there should always be an option to retire and live with basic income security above a certain age

Worldwide, an estimated three out of four older people work in the informal sector, which is not reflected in the global labour force participation rate. In 2019, Asia's labour force participation rate was the lowest of all regions (figure 3.3), partly reflecting sizeable informal sector employment. The labour force participation rate noticeably declines with increasing age in all regions after people reach age 55, although less so in Africa. Africa also stands out in terms of the proportion of people older than 65 remaining in the labour force, at 40 per cent. The same ratio in Europe and Latin America and the Caribbean is 8 per cent and 9 per cent, respectively. Africa's high ratio is likely due to the lack of adequate retirement benefits, which gives older persons no choice but to continue working. While it is important from an economic perspective to incentivize older people to work longer in ageing societies, there should always be an option to retire and live with basic income security above a certain age.

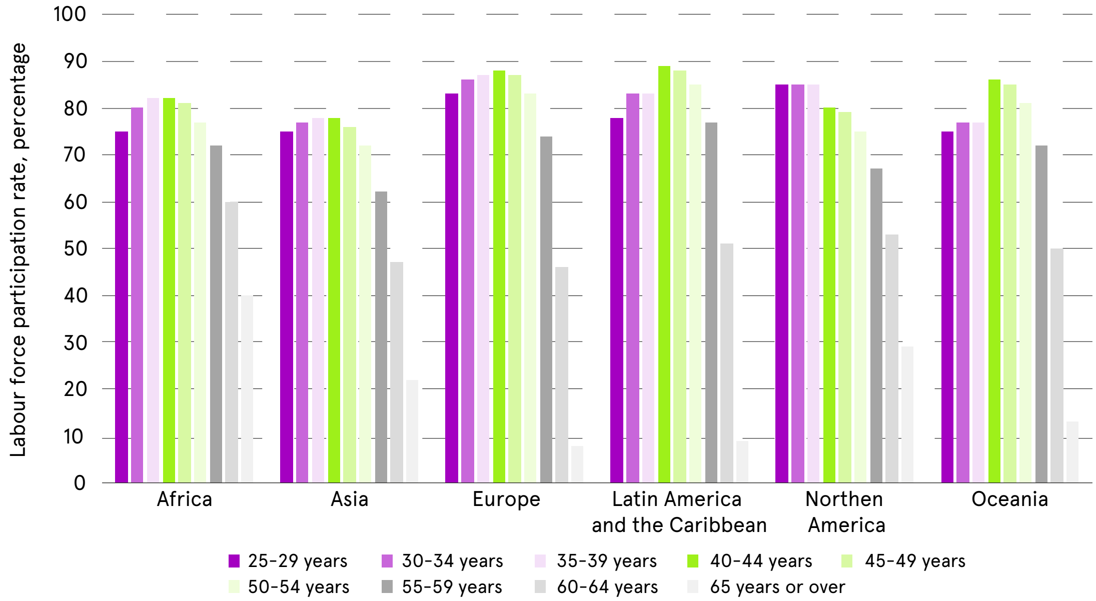
3. AS PEOPLE GROW OLDER, CONSUMPTION PATTERNS CHANGE

As income, needs and preferences change over the course of life, so do consumption behaviour and the marginal propensity to consume. This has implications for the composition and level of consumption in society.

Consumption patterns at older ages display some distinctive differences across countries (figure 3.4). One is the tendency in developed economies for consumption to increase sharply after people reach age 80. In some high-income countries, consumption at older ages exceeds that of younger adults by 30 per cent or more. This is due mainly to a large jump in the use of health care. Countries with more generous public transfer and welfare systems, such as Sweden, generally have higher consumption levels later in life compared to other developed countries such as Australia and Canada, where such systems are less extensive. In low- and middle-income countries, consumption remains relatively constant across all adult ages.

Figure 3.3

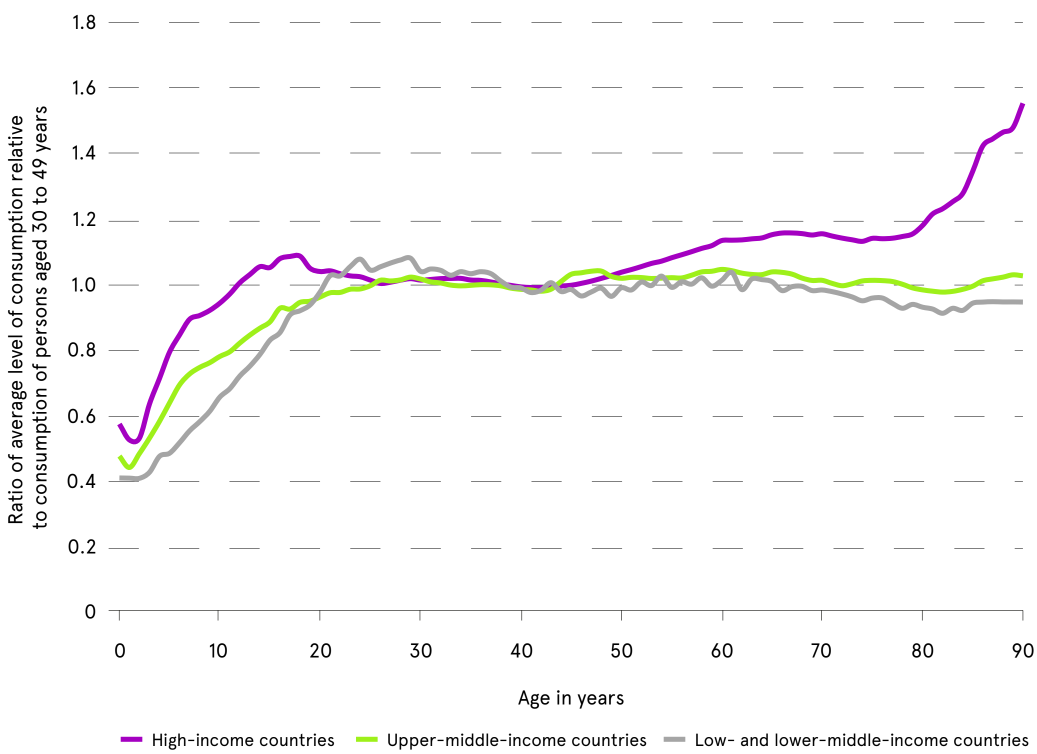
Labour force participation rate by region and age group (in years), 2019



Source: Calculations based on ILO (2020).

Figure 3.4

Per capita consumption by age relative to the consumption level among those aged 30 to 49, latest year available, 2005–2016



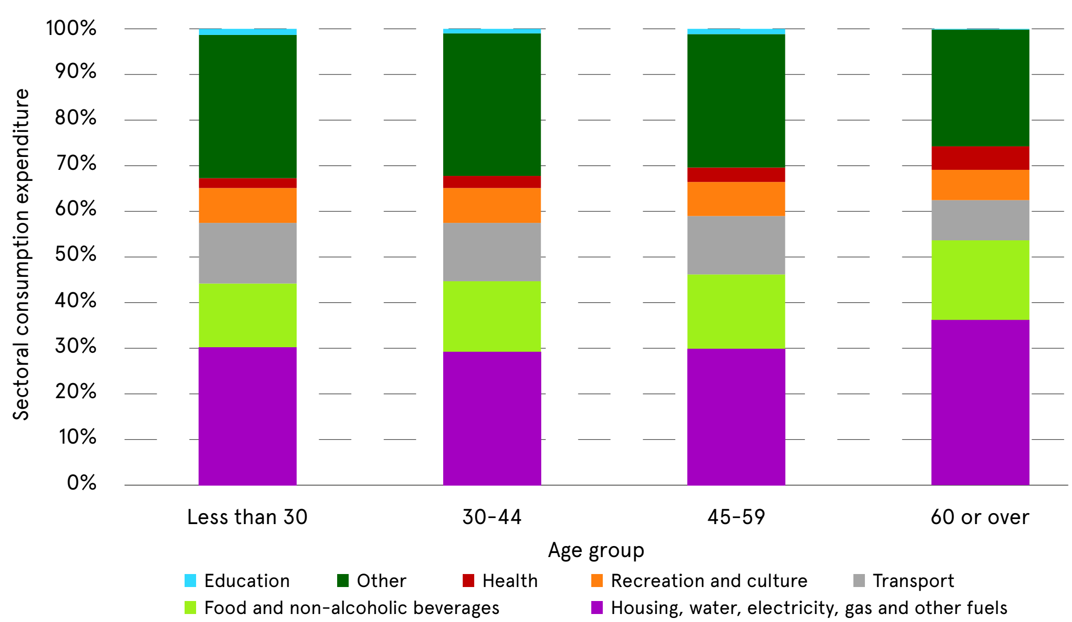
Source: National Transfer Accounts database. Available at https://ntaccounts.org (accessed on 4 April 2022).

Among the many drivers of consumption patterns, ageing is probably less important than factors such as income or education. At the same time, different age groups vary in how they consume. Evidence from the European Union suggests that older persons spend more on services, housing and health care than younger cohorts, and less on transport (figure 3.5).

In the United States, older households, where the household reference person is above age 65, spend a larger share of income on housing, utilities and fuel, household operations, housekeeping supplies and health care compared to working-age people. They spend significantly less on alcoholic beverages, apparel and services, tobacco and smoking supplies, and insurance and pensions. A study from Germany found that age influences the amount that individuals spend for different purposes, implying that "during the lifecycle, a private household adapts its consumption behaviour to the actual habits and needs as well as the income situation" (Stoever, 2012, p. 3). Data on consumption patterns in China show two consistently high-value expenditure categories in older households compared to younger ones: health care and housing. For older households in the lowest income quintile, food consumption is significantly lower than in younger households (Khan, 2022).

Age structure and consumption patterns have implications for inflation in coming decades (Juselius and Takats, 2016) but the burden of rising prices may not be equitably shared across age groups. For example, between 2014 and 2017, inflation for online goods was at least 1 full percentage point lower every year than inflation for equivalent goods in the overall consumer price index (Goolsbee and Klenow, 2018). Should this tendency continue to hold, older per-

Figure 3.5 **Structure of consumption expenditure by age, European Union countries, 2015**



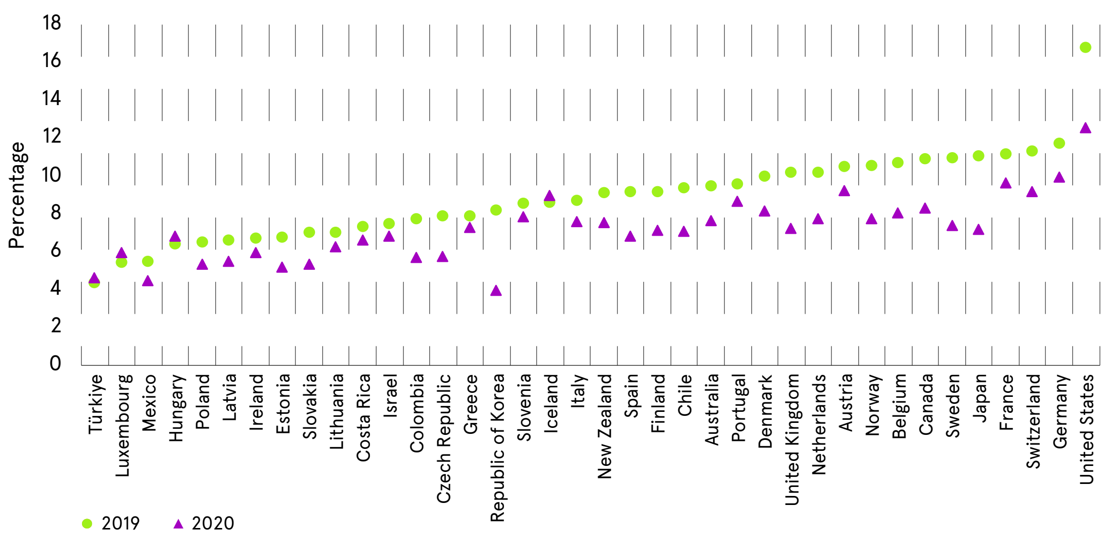
Source: Eurostat. Available at https://ec.europa.eu/eurostat/data/database.

sons, who are more likely to shop in stores than online, may face higher prices than other age cohorts (although such an effect would decline as people accustomed to shopping online age). Online shopping is also more common among high-income groups, and as this interacts with age, it can make some less affluent older persons particularly vulnerable to higher inflation.

The United States Bureau of Labor Statistics calculated an experimental consumer price index for households with a reference person or spouse aged 62 or older, finding that older persons face a higher inflation risk. In past decades, older Americans, according to this index, have on average seen slightly higher inflation than people in general (Stewart, 2008). This finding is particularly important because many countries link pension benefits to the consumer price index. If that index does not properly reflect cost-of-living increases for older persons, applying it may further accentuate income inequality.

Without policy reforms, population ageing tends to put upward pressure on age-related public spending. Global health-care expenditure, as a share of GDP, has consistently risen over the years, increasing in comparable terms (PPP, or purchasing power parity) from about $8.3 trillion in 2011 to $13.4 trillion in 2019. Data from Organisation for Economic Co-operation and Development (OECD) countries show that most have seen increases in public health expenditure since 2000 (figure 3.6). This is not just explained by population ageing. It also relates to the increasing prevalence of unhealthy and sedentary lifestyles. This trend is likely to continue, with the European Union expecting public spending on health care and long-term care to rise by 0.7 and 1.3 percentage points of GDP between 2013 and 2060, respectively (Nerlich and Schroth, 2018). Studies on emerging economies predict that population ageing will have a significant impact on public and private health-care expenses (Zhou and others, 2020).

Figure 3.6 **Total annual expenditure on health as a share of GDP in OECD countries**



Source: OECD.Stat. Available at https://stats.oecd.org/.

As the share of people aged 65 or older grows, both public and private health-care expenditures are expected to increase. The old-age dependency ratio has a significant impact on per capita health-care expenditure, after controlling for other factors (Khan, 2022). Yet the effect is not straightforward, depending on a host of variables. Both the number of older persons and their health status determine the relationship between ageing and health-care spending. Education level also directly links to better health and lower health-care expenditure among older persons. Long-term investment in education can thus have significant positive spillover effects on the health-care budget (Borrescio-Higa and Valenzuela, 2021).

Without equitable and sustainable systems in place, however, rising pension, health-care and long-term care costs can pose challenges to both individuals and the macroeconomy, raising risks of poverty and inequality among older people

The impacts of ageing also differ by modes for financing health care. In past decades in the United States, for instance, average medical costs have been strongly associated with time until death but only weakly associated with age (Miller, 2001). This is due in part to a health-care industry that uses costly new treatments and offers limited options for end-of-life care. In high-income countries, nearly 10 per cent of the aggregate annual health budget goes to the less than 1 per cent of people who die each year (Normand and others, 2021).

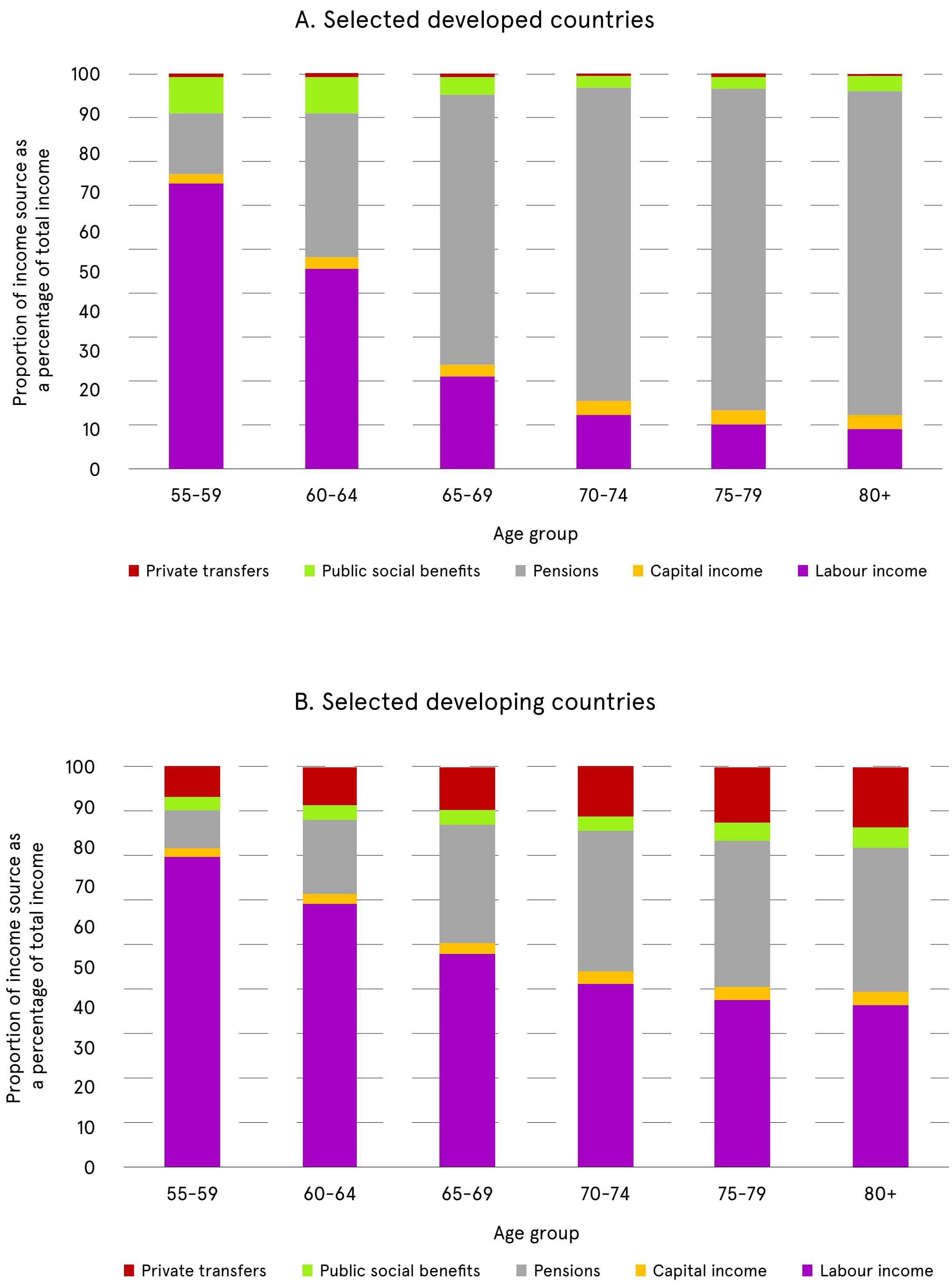
4. FINANCING OLD-AGE CONSUMPTION DEPENDS ON REALLOCATING RESOURCES

Patterns of income and consumption across the life course, including deficits for certain age groups, are not necessarily a macroeconomic problem if systems to reallocate resources are balanced and sustainable. At the individual level, adequate private savings and pensions can ensure the welfare of older people. Without equitable and sustainable systems in place, however, rising pension, health-care and long-term care costs can pose challenges to both individuals and the macroeconomy, raising risks of poverty and inequality among older people (Pandey and others, 2018).

A. SOURCES OF FINANCING

How older people finance their consumption differs across countries. The main sources of finance are people's own work, savings and other assets, and private and public transfers. In developed countries, public transfer systems, including for pensions and health care, meet at least two thirds of consumption needs among older persons. In developing countries with limited public transfer systems, older persons tend to work longer, rely on assets accumulated when younger or turn to their families for support (figure 3.7). In low-income countries, where public transfer systems are poorly developed, older persons rely more on assets than on private or family transfers. Asset-based reallocations fund about 95 per cent of the old-age deficit in India. In East Asia, family support remains important in many countries even if its role has been declining over time.

Figure 3.7 **Sources of income by age group**



Source: Calculation based on the Luxembourg Income Survey (LIS) Database, latest year available. Available at www.lisdatacenter.org.

Significant differences in financing the consumption of older persons operate among countries at similar levels of economic development and stages of demographic transition. For example, older people in Brazil receive much larger public transfers than their counterparts in Mexico, primarily through pension benefits. Brazilians become net beneficiaries of public transfers at age 52 while Mexicans pay more in taxes than they receive in public benefits until age 58. While Brazilians receive generous pension benefits throughout old age, people in Mexico work longer and tend to support themselves more through asset income than public transfers (Lee and Mason, 2011).

Without mitigating reforms, total expenditure on pensions will increase with population ageing. In advanced and emerging economies, pension spending as a percentage of GDP rose from around 7 per cent in the 1970s to 8 per cent in 2010. By 2050, public pension spending in these countries is projected to increase by 1 to 2.5 percentage points of GDP, to an average of 9.6 per cent of GDP (Amaglobeli and others, 2019). In the European Union, demographic changes alone are expected to raise pension spending by 7.6 per cent of GDP from 2013 to 2060 (Nerlich and Schroth, 2018).

B. IMPLICATIONS FOR GOVERNMENT REVENUE

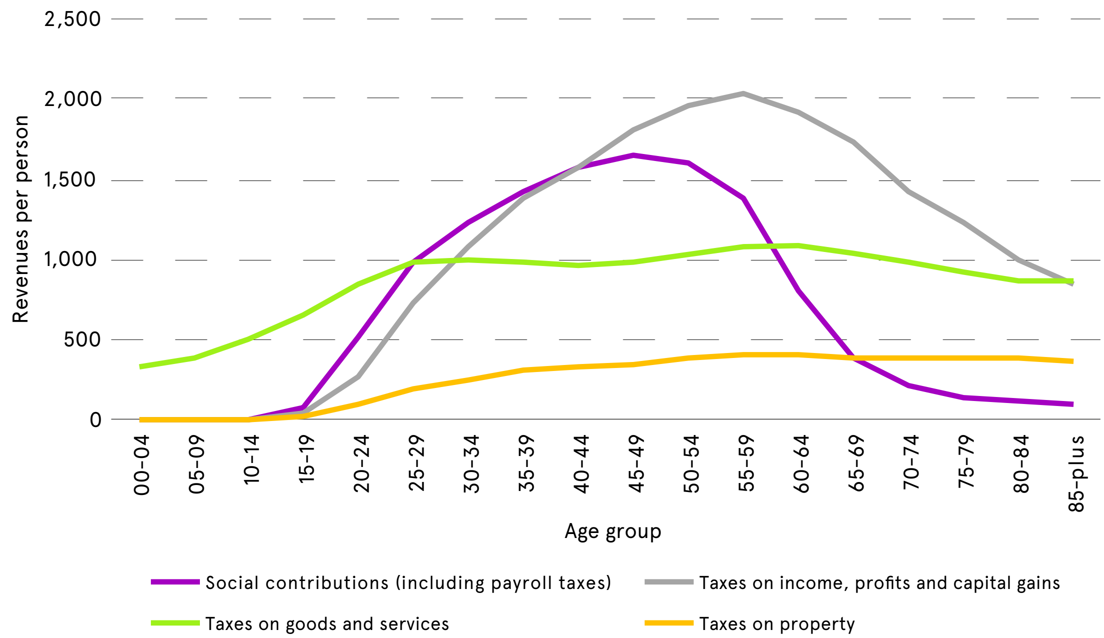
Population ageing may have implications for government revenues, amid concerns about potential declines in the labour force and uncertain effects on labour productivity. Government revenue tends to change with the number of taxpayers and their income, so it is more directly related to the working-age or employed population than to the total population. Since taxes and social contributions vary over the life course, population ageing may imperil or dampen the growth of fiscal revenues.

Countries in the early stages of ageing may see their tax revenue increase as all income sources have the potential to grow. Countries that are more advanced in ageing may see declines in fiscal revenue from social contributions linked to the labour market as well as taxes on income, profits and capital gains. Offsetting this effect would require older persons to remain gainfully employed or otherwise generate income (Cylus and others, 2019).

Figure 3.8 outlines the age profile of different types of tax revenues and potential changes in revenue sources as populations grow older. These trends would shift if older persons were healthier, better educated and work longer. The overall impact of ageing on government revenue thus depends on the combined effect of these factors.

Figure 3.8

Per capita taxes and social contributions across the life course, selected countries in Europe, Asia and the Americas



Source: Cylus and others (2019).

Note: Revenue types were averaged across six countries with available data: Italy, Japan, Sweden, Thailand, Uruguay and the United States.

A smaller labour force can have a substantial impact on government revenue. In Slovenia, for example, the projected decrease in the working-age population, from 66 per cent of the total population in 2016 to 58 per cent by 2040, together with a rising share of older persons could cause government revenues to contract by a projected 1.6 per cent as a share of GDP (Colin and Brys, 2020). Simulations for Germany indicate that annual income tax revenue could decrease by around 7 per cent by 2035 compared to 2016 despite greater labour market participation by older people (Beznoska and Hentze, 2017). This outcome, however, could be offset by changes to the tax system, such as by increasing marginal tax rates on the highest wage earners.

Population ageing may diminish revenue from value added taxes due to reduced taxable private consumption and a shift in demand towards specific services, such as health care, that are often subject to tax exemptions. Since the consumption tax burden of the oldest households is generally lowest, fiscal revenue will fall as the size of that age group increases. Revenue from taxes on capital, property and corporate income are likely less influenced by population ageing. In some countries, such revenue may even increase due to asset accumulation by older persons

An OECD simulation found that without policies to increase tax revenues to offset age-related increases in expenditures, public debt levels in advanced and emerging economies may increase dramatically and unsustainably over the next 40 years (Guillemette and Turner, 2018; Rouzet and others, 2019). The simulation incorporates demographic changes and the future impacts of already legislated increases in retirement age, built-in pension system stabilizers, the phasing out of early retirement provisions and changes to benefit formulas. Significant variations arise due to differences in pension commitments, however (figure 3.9).

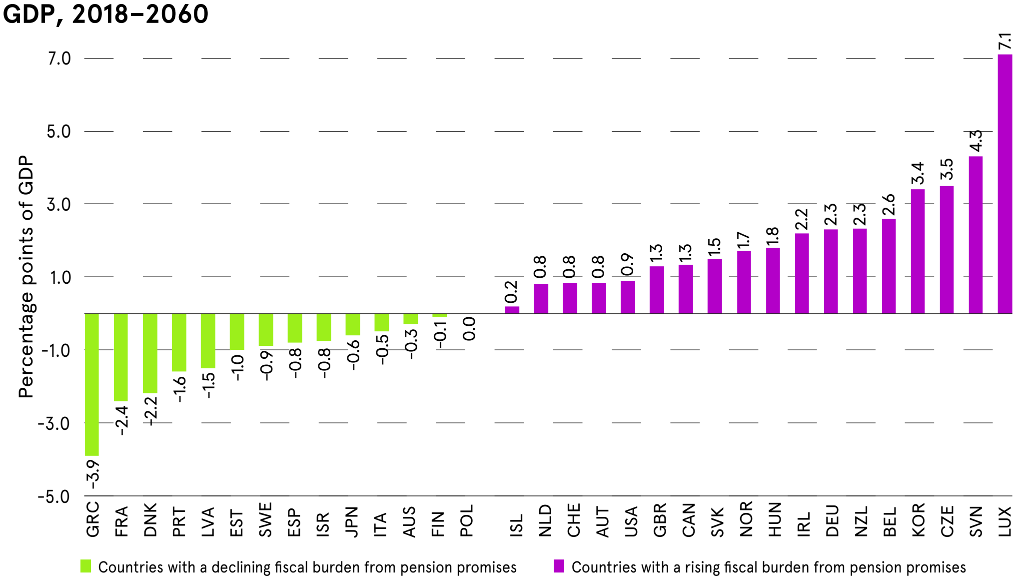
5. ADAPTING TO SUSTAIN ECONOMIC GROWTH OVER TIME

Economic growth may slow during the demographic transition as population growth levels off and societies move towards ageing. Ageing tends to increase capital accumulation and investment in the economy through many channels, as discussed earlier. While greater capital intensity raises productivity, the magnitude of this effect varies across countries and depends on different factors. In general, the retirement savings of working-age individuals takes on added importance as it can contribute to capital accumulation and investment in both domestic and international assets, resulting in higher national income.

Total investment in the economy may decline if expected growth in aggregate demand slows as an ageing population moves towards a different consumption profile (Aksoy and others, 2019). A shift in demand towards less capital-intensive services such as health care may reduce needs for capital investments (Lee, 2016). Ageing thus amplifies the need for countries to adopt policies that foster structural economic transformation, including through digitalization, investment in physical and human capital and the greening of the economy.

Figure 3.9

Changes in the fiscal burden due to pension promises in 32 OECD countries, percentage of GDP, 2018–2060



Source: Guillemette and Turner (2018).

Note: The change reflects the primary fiscal revenue needed between 2018 and 2060 to offset additional pension costs and stabilize public debt to GDP at the 2018 value.

Ageing can also alter the trajectory of productivity, especially in sectors requiring particular abilities. It is usually assumed that as work becomes increasingly dependent on digital tools and technology, an older workforce with fewer relevant skills will be less productive. This assumption is increasingly challenged, however, by successive cohorts of technologically sophisticated older persons. Moreover, older people have accumulated knowledge that may compensate for lower rates of technology adoption. The overall impact of ageing on labour productivity thus depends on the combined effect of these factors.

One promising approach to population ageing is to invest in technology and more capital-intensive economic activity. Already, the rapid advance of automation and artificial intelligence is reducing reliance on labour. Some evidence suggests that additional capital investment in automation in some advanced ageing economies is helping to accelerate economic growth (Acemoglu and Restrepo, 2020).

Other research indicates that ageing and shrinking populations may have a positive influence on the collective demand for resources, food production, energy use and pollution (Clements and others, 2015). The clearest influence is perhaps on changes in demand for environmental resources, with positive effects on natural capital (SDG target 12.2). This results from shifts in production towards more capital-intensive industries and methods and in consumption from material-intensive goods towards health and leisure activities. Countries with higher old-age dependency ratios have smaller ecological footprints.[19,20]

The influence of ageing on other sustainability measures is less clear but does offer opportunities to make progress in halving per capita global food waste and reducing food losses along production and supply chains (SDG target 12.3), and in improving prevention, reduction, recycling and reuse systems to reduce waste generation (SDG target 12.5). Population ageing also raises important questions around how to recognize unpaid care work in economic growth accounting, an issue briefly discussed in box 3.1.

19 The ecological footprint is a measure of how much area (in global hectares) of biologically productive land and water an individual, population or activity requires to produce all the resources it consumes and to absorb the waste it generates, using prevailing technology and resource management practices.

20 Population ageing may also increase the consumption of energy from heating and cooling. It is important to consider sources of energy generation in assessing the overall impact on the environment.

BOX 3.1

ACCOUNTING FOR UNPAID CARE INFORMS POLICIES EQUIPPED TO MANAGE AN AGEING SOCIETY

The ILO (2018a) has estimated that unpaid care work for household production accounts for 16.4 billion hours of work time annually, equivalent to around 2 billion jobs. Data from the UN SDG Global Database, based on a sample of 32 developing and 24 developed countries (56 in total), suggest a significant gender difference in the proportion of time spent on unpaid care and domestic work in countries at different stages of population ageing.

In developing countries, which tend to be at earlier stages of the demographic transition, women on average spend 17.3 per cent of their time on unpaid care and domestic work, compared to 17.1 per cent in mostly older developed countries. In contrast, men in ageing societies tend to spend a greater portion of their time on unpaid care work, at 8.7 per cent on average, than men in developing countries, at 5.8 per cent. Men's share in both cases remains much lower than women's share. Globally, women currently perform three quarters of unpaid care work hours, reflecting entrenched gender inequality (ILO, 2018a).

The neglect of unpaid care work in economic accounting results in inaccurate assessments of changes in individuals' well-being and the value of time (OECD, 2014; Lequiller and Blades, 2014). A more complete calculation would capture both the aggregate amount of unpaid care work and its distribution. It is also essential to assess the quality of care work, based on the experiences of those receiving care services. This emphasis is consistent with the "beyond GDP" movement's call for a shift from measuring economic production to measuring people's well-being (Stiglitz, Sen and Fitoussi, 2009). Quality is particularly pertinent for ageing countries as it is already low and could further deteriorate without sufficient investment to match rising demand.

From a policymaking perspective, insufficient measurement of unpaid care work limits analysis of gender gaps in labour market outcomes, such as labour force participation, wages and job quality – as well as effective measures to rectify these disparities. The lack of measurement also obscures the true scale of caregiving in an ageing society and limits proactive actions enabling unpaid caregivers (often women) to become full participants in the labour force.

With population ageing, a better understanding of unpaid care work could inform more accurate assessment of measures to mitigate adverse economic effects. For example, since unpaid care work is not included in GDP and unpaid care workers are not considered part of the labour market, national accounts miss a full reflection of the productivity of the women and men who carry out unpaid care work.

BOX 3.1

Further, calculations to estimate the economic benefit from narrowing the gender gap in labour force participation, with the implicit assumption that women who are not "participating" in the labour market are unproductive, would likely overstate the impact of potential policy measures to bring more women into paid work. It would be more appropriate to interpret the potential boost to growth as a ceiling, indicating its limits. A more accurate estimate would require better understanding and measurement of the economic contribution of unpaid, predominantly female, care workers.

B.

KEEPING UP WITH AGEING CALLS FOR SHIFTING CONSUMPTION AND PRODUCTION STRATEGIES

In both developed and developing countries, opportunities and challenges from population ageing warrant adopting effective, equitable strategies for both the production and consumption sides of the economy. Ageing should be central to economic development agendas, including to ensure that the broader economy benefits from the expertise and skills of older persons.

Ageing should be central to economic development agendas, including to ensure that the broader economy benefits from the expertise and skills of older persons

1. WOMEN AND OLDER WORKERS ADD VALUE IN LABOUR MARKETS

As societies age, labour force participation rates need to rise accordingly, particularly for women, older workers and other groups traditionally excluded from the formal labour market. This applies especially to countries with advanced ageing.

Women's greater role in the labour force has been integral to positively transforming the structures of economies in many countries in recent decades. Yet they still participate at rates well below those of men in every age group, reflecting distinct gender roles and social status, among other issues. Women's increased participation would slow the projected decline in the size of the labour force.

Towards that end, a key challenge for policymakers is to reconcile conflicting work and family demands. Employment and social policies need to make it possible for women to have children while remaining in the labour market and continuing to develop their careers. Policies can include the provision of subsidized childcare, maternal and paternal leave, and tax credits, among others.

Employment and social policies need to make it possible for women to have children while remaining in the labour market and continuing to develop their careers

The greater participation of women and older workers in the labour force will require workplaces to make changes in occupational safety and health, working hours and organization, such as more flexible working hours and arrangements and taxation systems, as well as enhanced support to families with children. For older workers, it may be important to eliminate distortions in pension and social transfer programmes that discourage them from remaining in the labour force. Older persons should be able to work as long as they wish and can do so productively. This will require systematically countering age-based discrimination, the main challenge to realizing older people's right to work at all levels of the labour market (United Nations, 2021b).

The economic benefits of closing the gender gap in labour force participation are significant according to a recent examination of historical factors contributing to economic growth in 178 countries.[21] The analysis reaffirmed the essential importance of improving labour productivity and women's participation in the labour force. In 2018, roughly one third of working-age people globally remained outside the labour force, with significant variation by gender. Globally, a 20-percentage-point gap exists between male and female rates of labour force participation (figure 3.2). The gap is as high as 31.2 percentage points in Asia and as low as 8.7 percentage points in Northern America.

Expanding female labour force participation provides a major opportunity to boost GDP per capita and expand the economic base in countries with ageing populations. Closing the gender gap would add another 30 per cent to global GDP per capita. In effect, this amount represents the global opportunity cost of women's lower labour force participation.

In Europe, legislated pension reforms, particularly a higher retirement age, track an expected rise in employment rates among women and older persons. These are projected to raise the labour force participation rate of workers aged 55 to 64 from 62 per cent in 2019 to 72 per cent by 2070. An even larger increase is predicted for women, leading to a convergence with men (European Commission, 2021a). These forecasts also envisage long-term improvements in the employment ratio and a lowering of the unemployment rate from 6.8 per cent in 2019 to 5.8 per cent by 2070.

21 Based on an unpublished internal research note by the Development Research Branch of the United Nations Department of Economic and Social Affairs in April 2022.

In OECD countries, the relaxation of rules stipulating mandatory retirement and the promotion of more flexible working arrangements are projected to raise GDP growth by an additional 2.5 percentage points, on average. The OECD projects that giving older workers greater opportunities to work would enhance GDP per capita by as much as 19 per cent over the next three decades (United Nations, 2021c).

Every society needs to focus on investing in the education and skills of people of all ages, including during the demographic transition towards older societies

2. GREATER LABOUR PRODUCTIVITY DEPENDS ON INVESTING IN SKILLS

Lifelong learning improves the labour productivity of all workers, especially amid rapidly changing technologies. In ageing societies, labour productivity may fall because of declining average physical and cognitive abilities among older workers without commensurate efforts to enhance their skills and knowledge. An ageing labour force thus provides an additional incentive for firms to invest in new technologies that enhance labour productivity. The combined impact of these measures will ultimately determine the overall effect of population ageing on labour productivity.

Every society needs to focus on investing in the education and skills of people of all ages, including during the demographic transition towards older societies (box 3.2). This enhances labour productivity while also transforming economic structures and incentives, leading to accelerated application of digital and green technologies as instruments of sustainable development.

BOX 3.2

HOW TO AMPLIFY ECONOMIC GROWTH DURING THE DEMOGRAPHIC TRANSITION

Increasing labour productivity is imperative for countries seeking to mitigate ageing's adverse effects on income growth. Based on a recent analysis, the needed rate of improvement depends on achieving gender parity in labour force participation, increasing the statutory retirement age from age 65 to age 70, and maintaining or increasing the level of international migration.

The analysis estimated labour productivity growth required to reach a given target for income growth, considering demographic changes projected in the *World Population Prospects* (United Nations, 2019b). The annual income growth targets were a 2 per cent per year increase between 2020 and 2050 for OECD countries and others with higher income than the group's average, and, for other countries, halving the income gap with the OECD average by 2050. The exercise applied alternative scenarios for the three factors and quantified the extent to which they can help to achieve the target income growth.

On average and across countries, achieving gender parity in labour force participation, an increase in the retirement age and maintaining existing migration flows could lower the annual labour productivity growth required during 2020-2050 to achieve the above income growth target by 9.5 per cent, 6.7 per cent and 1.0 per cent, respectively, or 17.2 per cent combined. Significant regional variation reflects different development conditions (figure 3.10). The 10 countries that could benefit most from the three factors would see the required labour productivity growth reduced by 44 per cent on average.

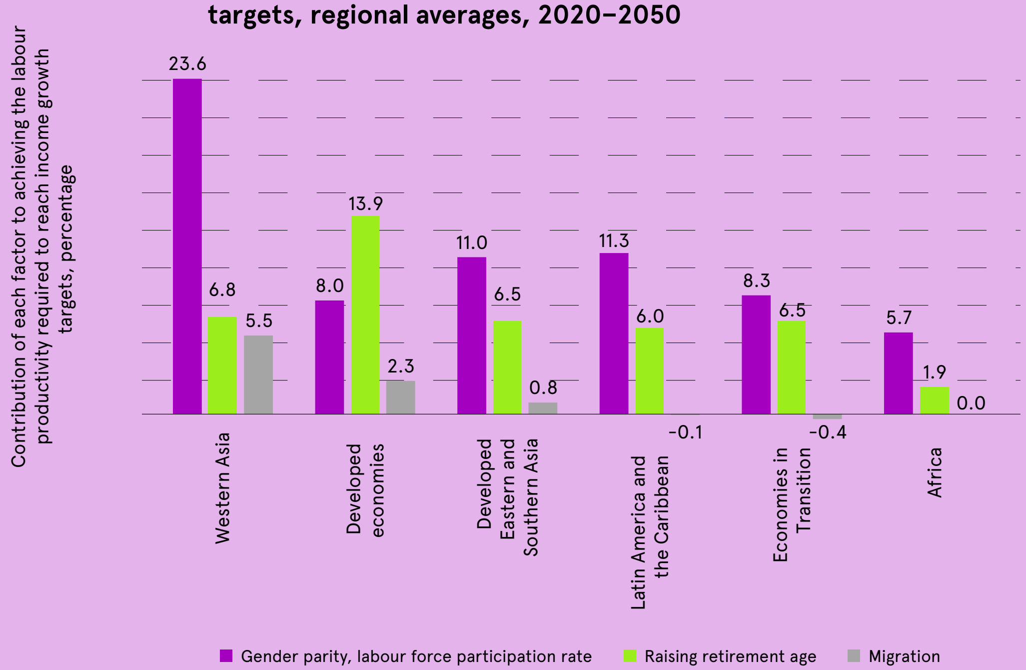
Among the three factors, attaining gender parity in labour force participation makes the biggest difference for 99 countries out of 167 sampled, comprising 113 developing and 54 developed countries. It is followed by raising the retirement age, which would be the most impactful in 67 countries, half of which are developed countries. Among all countries with available data, only one will gain more from continued migration (compared to no migration) than from the other two factors.

A push for higher fertility would have a limited impact in increasing per capita income between 2020 and 2050. Increased fertility would slow population ageing and over time result in a larger working-age population. But it would also immediately raise the share of dependent children, limiting favourable impacts on growth from a larger workforce.

Even accounting for the three factors conducive to economic growth, most countries would still need to accelerate labour productivity growth from levels before the pandemic to achieve the targeted income growth. This includes those with a growing working-age population, suggesting that nations cannot rely on favourable demographic trends alone to narrow the income gap. On average, the required increase in annual labour productivity growth is 3.2 percentage points.

BOX 3.2

Figure 3.10 **Projected contributions of three factors to achieving the annual average labour productivity growth required for income growth targets, regional averages, 2020–2050**



Note: Regions are ordered in terms of the sum of the average of each of the three factors, starting from Western Asia, which has the greatest sum. The income growth target is 2 per cent annual growth during 2020-2050 for OECD countries and countries with incomes higher than the OECD average. For other countries, the income target is to halve the income gap with the OECD average by 2050.

Japan is among the countries facing considerable economic impacts due to rapid population ageing. Based on a 2007 estimate, labour productivity would need to grow by 2.6 per cent per year to sustain annual per capita income growth of 2 per cent over a 30-year period (United Nations, 2007). A similar pattern holds, to a lesser degree, in other countries with ageing populations, such as Germany, Italy and the United States. Required productivity growth in all these cases seems within reach by historical standards; an annual per capita income growth of 2 per cent is lower than the average achieved in the past. Yet maintaining an annual 2 to 2.5 per cent productivity growth rate for about five decades will not be easy, requiring sustained policy support to stimulate technological progress and innovation.

3. HARNESSING THE POTENTIAL OF THE TECHNOLOGICAL REVOLUTION

The world today is riding a new wave of technological change. The Fourth Industrial Revolution promises to alter people's work and lives in fundamental ways. New technologies such as artificial intelligence and robots are creating new occupations and taking over thousands of routine tasks. In many areas, new technologies are substituting for labour rather than complementing it.

Population ageing has become a key factor driving changes in work, technology and the globalization of markets. Some highly advanced ageing countries like Japan are systematically introducing new technologies to replace human labour in manufacturing and services (box 3.3). Many other countries are examining opportunities to mitigate negative fallout from ageing on their economies. While new technologies can improve economic productivity and the delivery of services, digitalized business models also pose risks in terms of labour rights and income inequality. Such issues will likely move to the forefront of global policymaking in coming decades.

In some industries, like automotive manufacturing, robots have already largely replaced people on the assembly line (Bloom, McKenna and Prettner, 2018). Mine operators use self-driving trucks that refuel only once a day. 3D printers increasingly produce goods that previously required extensive labour inputs, including tailor-made medical products like hearing aids. 3D printing, in fact, may become a lynchpin for boutique manufacturing in rural areas. Other technologies, like machine learning, have begun to diagnose diseases, among many other uses. These trends in technology accompany shifts in working patterns, such as the rapid rise of the "gig economy" over the last decade. As the size of the working-age population declines and salaries increase in many countries in coming years, private and public institutions will likely continue to replace labour through the automation and digitalization of work.

In the United States, an estimated 9 to 47 per cent of jobs may be automated over the next two decades (Frey and Osborne, 2017; Arntz, Gregory and Zierahn, 2017). The International Federation of Robotics has estimated that 3 million robots operated in 2017 worldwide. They are increasing annually at a rate of 14 per cent and could reach 11 million by 2030 (Bloom, McKenna and Prettner, 2018).

The fast pace of innovation and technological development poses a particularly significant challenge for many developing countries. They will need to manage and make the most of such changes or risk being left behind in the economy of the future. One common and urgent priority is to increase investment in education, including early child development, as well as health and social protection, as a strategy to seize the potential of new technologies to accelerate sustainable economic development. It is also important to invest in the skills and knowledge of older persons and ensure that technology platforms are accessible to them.

Many developed countries have already lost a significant number of manufacturing jobs to automation. Technologies are also displacing people in low-skilled occupations. For example, robots play increasing roles in caring for older people, assisting with daily tasks such as bathing, dressing, eating, communications and transport (Pruchno, 2019). While new technologies carry enormous potential to improve standards of living, many people remain rightly concerned about negative impacts on employment and inequality.

4. PRONATALIST POLICIES SHOW MIXED RESULTS

A longstanding concern is that population ageing will drag down public finances and standards of living. An analysis of data from 40 countries shows that fertility well above the replacement level would generally be most beneficial for government budgets. Fertility near the replacement level, however, would be most beneficial for the macroeconomy and the average standard of living. Considering the effects of age structures on families as well as governments, the total fertility rate that would maximize the economic support ratio is estimated at 1.8 births per woman in low-income countries, 2.0 in upper-middle-income countries and 2.3 in high-income countries (Lee and Mason, 2014).[22]

Many European societies view boosting birth rates as an important strategy to slow population ageing and reduce fiscal pressures. Most governments in countries that are past the demographic dividend, in Europe and elsewhere, have introduced pronatalist policies to respond to declining fertility and rapid population ageing. Examples include providing incentives to have more children through baby bonuses, family allowances, tax breaks, parental leave, subsidized childcare and flexible working schedules.

Different examinations of the impact of pronatalist policies on fertility show mixed results. A United Nations expert meeting in 2015 concluded that maternity, paternity and parental leave, paid at a high level of wage replacement and for moderate durations, appeared to positively influence fertility (United Nations, 2015a). Similar results came from affordable, accessible, high-quality childcare and education services for children of all ages. Evidence on the response to cash benefits is mixed. Quebec, Canada's cash grant, France's birth grant, Australia's baby bonus, Germany's maternity leave and the Israeli child subsidy programme have demonstrated positive fertility responses according to some research (Lee, 2022). Other studies have found no significant fertility response to such benefits. The effect largely depends on the country, type of programme and research method. In general, small benefits may not counteract other, stronger factors in fertility decisions.

5. BEYOND BORDERS: IMPETUS FOR NEW INVESTMENT FLOWS

The accelerated outsourcing of production and enhanced global value chains will likely be key strategies that rapidly ageing countries deploy to address the economic implications of declining working-age populations. Ageing countries may need to diversify their investments beyond what is possible domestically and potentially obtain higher average rates of return as well. Ageing thus accelerates the impetus for international investment flows from upper-middle income and high-income countries to lower-middle and low-income countries, such as some in Asia and Africa with abundant labour. Such capital flows can increase labour productivity and wages and propel higher economic growth.

22 The economic support ratio measures the share of the working-age population in the total population.

BOX 3.3

IN JAPAN, AGEING IS REORGANIZING INDUSTRY AND ADVANCING THE DIGITAL ECONOMY

Japan's population is predicted to decline from 126 million to 100 million people between 2020 and 2050. This could shrink the workforce by 20 per cent between 2020 and 2040 as it sheds from 65 million to 52 million people. By 2040, an estimated 36 per cent of the population will be older than 65, up from 29 per cent in 2020. The near certainty of labour shortages has already catalysed economic transformation.

Changing demographics have forced Japanese companies to accelerate digitalization, for example, and brought about a major reorganization of industrial architecture and policy. Japan, along with Germany, is now at the forefront of digital manufacturing. Japan's global market share in industrial robotics and machine vision technologies exceeded 50 per cent in 2019, up from 30 per cent in 2016. By 2020, plants and offices outside Japan generated more than half of manufacturing sales.

Managing global value chains is now central to how Japanese companies do business. As a result, the GDP share of manufacturing exports rose from 8.8 per cent in 1995 to 18 per cent in 2020. Vertical farming and new agricultural technologies have transformed agriculture and resulted in more efficient use of natural resources. The rising average age of farmers, which topped 68 years in 2020, has in part driven the reinvention of agriculture.

Japan's digital transformation has offered a solution to the "succession problem" facing many companies, where hiring cannot keep up with retirement. Sharp increases in job mobility, the number of independent contractors and the use of dual employment systems have together brought about a significant rethinking of existing pension systems, including to improve coverage of workers in non-standard and informal forms of employment and to open opportunities to defer pension benefits until age 75. A low unemployment rate, less than 3 per cent in 2020, minimizes apprehensions around technological change. Further, educational reforms and major government and private investments in reskilling the workforce are helping workers adapt to momentous changes.

Source: Schaede and Shimizu (2022).

Africa has potential to become a major driver of global economic growth in the latter half of the twenty-first century – if countries adopt the right policies to realize a historic demographic opportunity. Policies need to nurture a rapidly growing pool of well-trained workers and advance economic and structural reforms that make the continent a magnet for foreign direct investment and technological diffusion. The digital revolution offers Africa an extraordinary chance to make the public and private sectors more cost-effective, efficient and transparent, a major catalyst for economic growth. It can also bypass traditional structural transformation anchored in the rapid expansion of a highly polluting manufacturing sector, choosing instead a lighter environmental footprint with greater emphasis on growth in services such as business process outsourcing, e-commerce and fintech.

Africa has potential to become a major driver of global economic growth in the latter half of the twenty-first century – if countries adopt the right policies to realize a historic demographic opportunity

As digital technologies spread and ease the flow of both manufacturing and service jobs to offshore locations, global production networks will expand in developing economies with surplus labour. Continued improvement in education and skills and a readiness to transition to green and digital economies could make labour-surplus economies such as those in Africa into a hub for production and global value chains, especially given their competitive wages. Increased investment in human capital and physical infrastructure will be key to making the most of this opportunity.

C.

CAREFULLY TIMED POLICIES CAN STEER A SUCCESSFUL TRANSITION

Success in extending human lives and reducing fertility rates have presented opportunities and challenges in managing economies. Harnessing the opportunities and mastering the challenges depends in part on government policies at different stages of the demographic transition. These need to recognize how changes in the size and composition of the working-age population and labour force heavily influence the impact of ageing on productive capacity. Furthermore, as income, needs and preferences change over the course of life, so does consumption behaviour, with implications for both government spending and revenue.

Governments need to adopt comprehensive strategies aimed at enhancing investments in health and education; fostering labour force participation, particularly among women and older workers; improving labour productivity; and raising fiscal revenue. Ageing needs to move to the centre of economic development agendas, towards ensuring that economies both thrive and benefit from the expertise and skills of older persons.

CHAPTER 4

AGEING, POVERTY AND INEQUALITY, NOW AND IN THE FUTURE

KEY MESSAGES

- **Old-age pensions and access to health care are critical in reducing poverty and inequality among older persons. But they are not sufficient on their own. Ensuring economic security and health for all in old age calls for promoting equal opportunity from birth, including through universal access to health care and education as well as opportunities for decent work.**

- **Investments in decent work are paramount. Decades of wage stagnation are jeopardizing people's ability to save enough to support themselves in older ages. Informal employment and various non-standard forms of employment limit workers' social protection coverage and their contributions to public revenues.**

- **Without swift policy action to prevent it, future cohorts of older persons are likely to be economically more unequal than those today. With growing numbers of older persons in all regions, inequality and economic insecurity at older ages should be rising causes of concern.**

- **While worries over fiscal sustainability have dominated pension reforms, pension benefits are still too low in many countries and beyond the reach of some groups. Inadequate investment in economic security at older ages risks jeopardizing progress in reducing poverty among older persons. It may diminish the well-being of future cohorts of older persons and further undermine already shaky trust in Governments.**

- **Not everyone has benefitted equally from the advances in health and living conditions that drive population ageing. Many of today's older persons are in good health. Others live with multiple ailments or severe disability. Some are economically active and enjoy income security but many live in poverty. Some have strong social ties. Others lead isolated lives. Population averages conceal these inequalities and the diverse needs and abilities of older people.**

Inequalities do not emerge suddenly at older ages. They follow and feed on people's different experiences throughout their lives. A person's country of birth, family, education, employment path and social networks affect well-being in later life, as do gender, ethnicity and other characteristics. Advantages or disadvantages in access to opportunities and resources can reinforce each other at any point. Prolonged unemployment, for instance, has negative impacts on health and social networks. Poor health and limited social networks, in turn, constrain employment opportunities. From a policy perspective, it is important to understand the influences across the life course that underlie inequalities in later life, and how different national and local contexts shape this process.

Inequalities evolve over a single generation and from one generation to the next. On average, today's youth are healthier and more educated than prior generations. Progress in education is likely to continue among future generations, despite the disruptions of the COVID-19 crisis. Younger people today are expected to live longer and make important contributions to society, including at older ages. Yet growing uncertainty and economic insecurity mar their transition to adulthood. Examining the labour market characteristics of successive cohorts of youth, working-age adults and older persons across countries as well as inequality trends across cohorts sheds light on ongoing changes with implications for the future of ageing.

This chapter illustrates how diverse ageing paths drive disparities in old age within and between countries, with a focus on poverty and income inequality. It uses cross-country evidence to explore how public policies can influence economic well-being at older ages.[23] Even countries that have made progress in improving the opportunities and quality of life of women and men as they grow older,[24] however, are far from ensuring that no one is left behind.

A.

POVERTY, INEQUALITY AND EXCLUSION IN OLD AGE: A SNAPSHOT

1. POVERTY RISKS CAN RISE WITH AGE

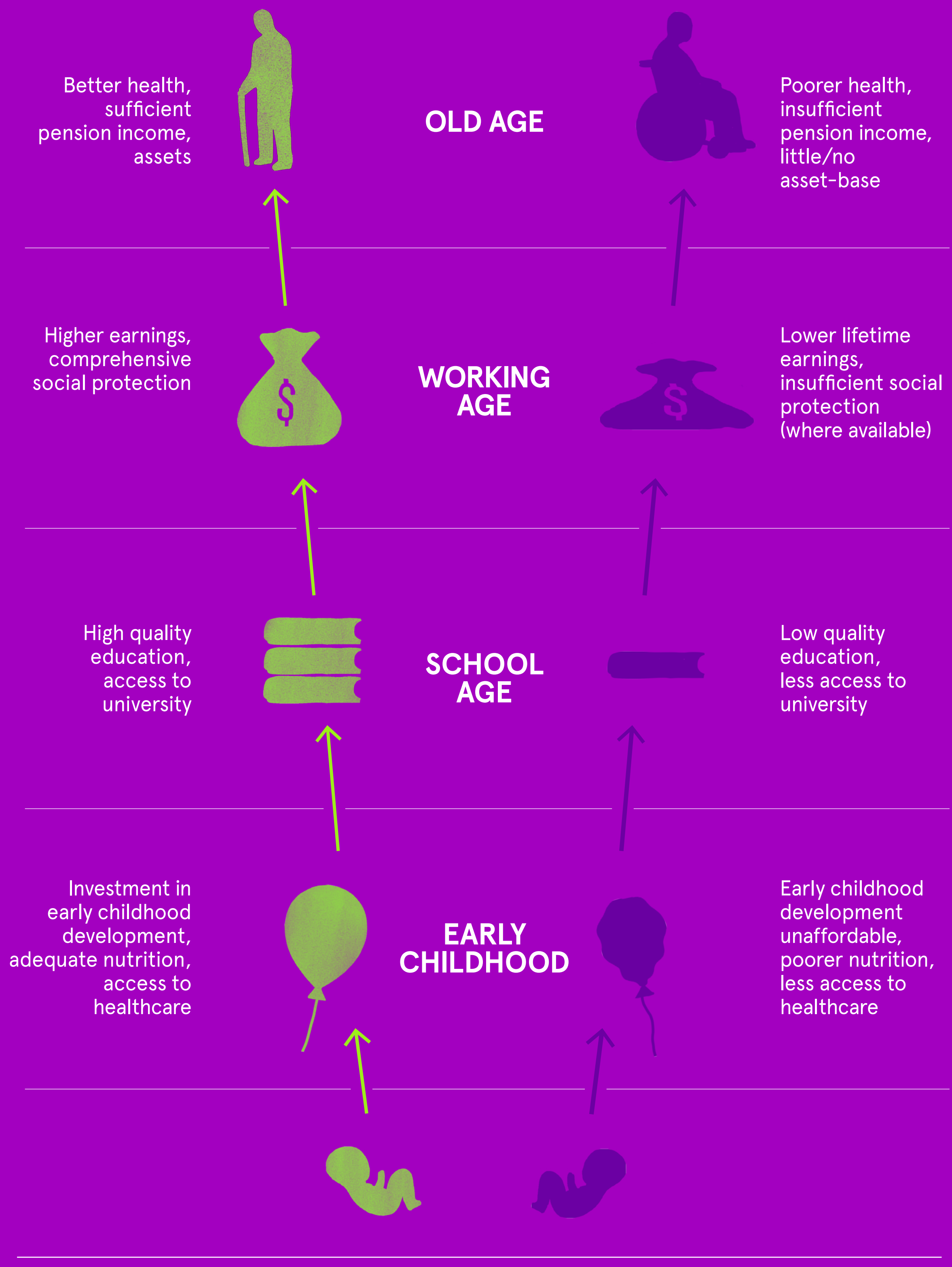
Reducing poverty among older persons is a core objective of the Madrid International Plan of Action on Ageing. Older people face particular risks of falling into poverty. At some point, most begin to work less or stop working altogether due to health reasons or family responsibilities, or because they are obligated or wish to retire at a statutory retirement age. Discrimination may undermine further employment. While many older persons remain productive, their economic well-being depends on the availability of public income support, affordable health care, family support and personal savings to a greater extent than for the working-age population.

Despite the policy relevance of detailed, disaggregated poverty information, including for SDG monitoring, there are few

23 The chapter's findings are based on microdata analyses using the LIS Database, which covers numerous developed and developing countries, and the Gateway to Global Aging data platform.

24 The Madrid International Plan of Action on Ageing refers to this as "building a society for all ages".

UNEQUAL AGEING ACROSS THE LIFECOURSE



cross-country, comparable estimates of the prevalence of poverty among different population groups, including older persons. Box 4.1 describes the methodological challenges affecting the reliability and comparability of poverty data by age.

BOX 4.1

CHALLENGES IN MEASURING OLD-AGE INCOME POVERTY

Measuring poverty and inequality remains a difficult task. Most estimates rely on household survey data that are not regularly available in many developing countries and that are not fully comparable across countries or over time. In terms of poverty data disaggregated by age, one major constraint of household surveys is that they do not provide information on the actual distribution of income or consumption within households. Without detailed individual data, it is often assumed that income and other resources are shared equitably among household members. All older persons living in households where pooled income or consumption are above the poverty line are therefore considered to live above the poverty line and vice versa.

Evidence suggests that the intrahousehold distribution of resources is not always equitable, however. In some settings, older persons (especially older women) and children have lower levels of economic well-being than other household members, particularly when resources are limited (Brown, Calvi and Penglase 2021; de Vreyer and Lambert, 2020). Further, the needs of individual household members vary. While older persons may have lower energy requirements than working-age adults, they more often live with disabilities and therefore incur higher costs to achieve the same standard of living (WHO and World Bank, 2011).

Assuming intrahousehold equity in the distribution of resources, income (or consumption) is often divided by the number of household members to adjust for household size in poverty calculations. This per capita equivalence scale does not consider that some costs are fixed regardless of household size. Namely, the costs of energy or housing do not increase proportionally with each additional household member. Other equivalence scales, such as the square root scale used in this report, take economies of scale into account. A wide range of equivalence scales, including those used by the OECD, adjust for assumed lower resource needs among children.

Intrahousehold inequalities, the equivalence scales used and other methodological choices (including the use of income versus consumption data to measure poverty) affect the reliability of estimates of old-age poverty. Whether child poverty estimates are higher than old-age poverty and by how much depends on the equivalence scale used, for instance (Gelders, 2021). While there are no easy ways to address these challenges, the underlying assumptions must be made explicit and their impact systematically assessed. Additional research is needed to account for intrahousehold inequities in the distribution of resources and the ways in which these affect older people.

Taken at face value, scarce cross-country estimates suggest that levels of extreme income poverty are lower among older persons than among children and even the working-age population. In one of the most comprehensive efforts to provide a global demographic profile of people living in extreme income poverty using harmonized survey data, Castañeda and others (2018) estimated that the percentage of persons aged 65 or above living on less than $1.90 a day around 2013 (7 per cent) was below that of the working-age population (from 10 per cent for those aged 25 to 34 to 7 per cent for those aged 55 to 64) and much lower than for children (20 per cent).[25]

Whereas extreme poverty is increasingly concentrated in some developing regions, particularly sub-Saharan Africa and Southern Asia, other measures of poverty are relevant for countries at all income levels. In most developed countries, for example, poverty is not measured in absolute terms. Instead, the poverty line is set as a proportion of each country's mean or median income.[26] The proportion of people living below 50 per cent of each country's median income, disaggregated by age, sex and disability status, is part of the SDG global indicator framework.[27]

Findings based on a new series of estimates of relative poverty by age, covering 49 countries, including 20 developing countries, differ somewhat from those based on absolute extreme poverty measures (figure 4.1). They suggest that older persons live in relatively poor households more often than working-age people (aged 25 to 64 in this case), as do children (aged 0 to 14) and youth (aged 15 to 24).28 Relatively lower incomes, combined with fewer opportunities to participate in the labour market, can make older persons more economically insecure and vulnerable.

Differences in relative poverty between the working-age population, older persons and children tend to be larger in developing than developed countries. In the latter, comprehensive social protection systems, including more generous public pensions and broader coverage and access to health care than in developing countries, have been successful in addressing economic insecurity at older ages. In developing countries, age-related differences in relative poverty are larger even though more older people live in intergenerational households, which should help to protect older and younger members from falling into poverty in times of crisis.

25 Based on the World Bank's Global Micro Database, which contains harmonized household survey data for 89 low- and middle-income countries. The estimates are based on the international poverty line of $1.90 per day using 2011 PPP conversion rates and a per capita equivalence scale.

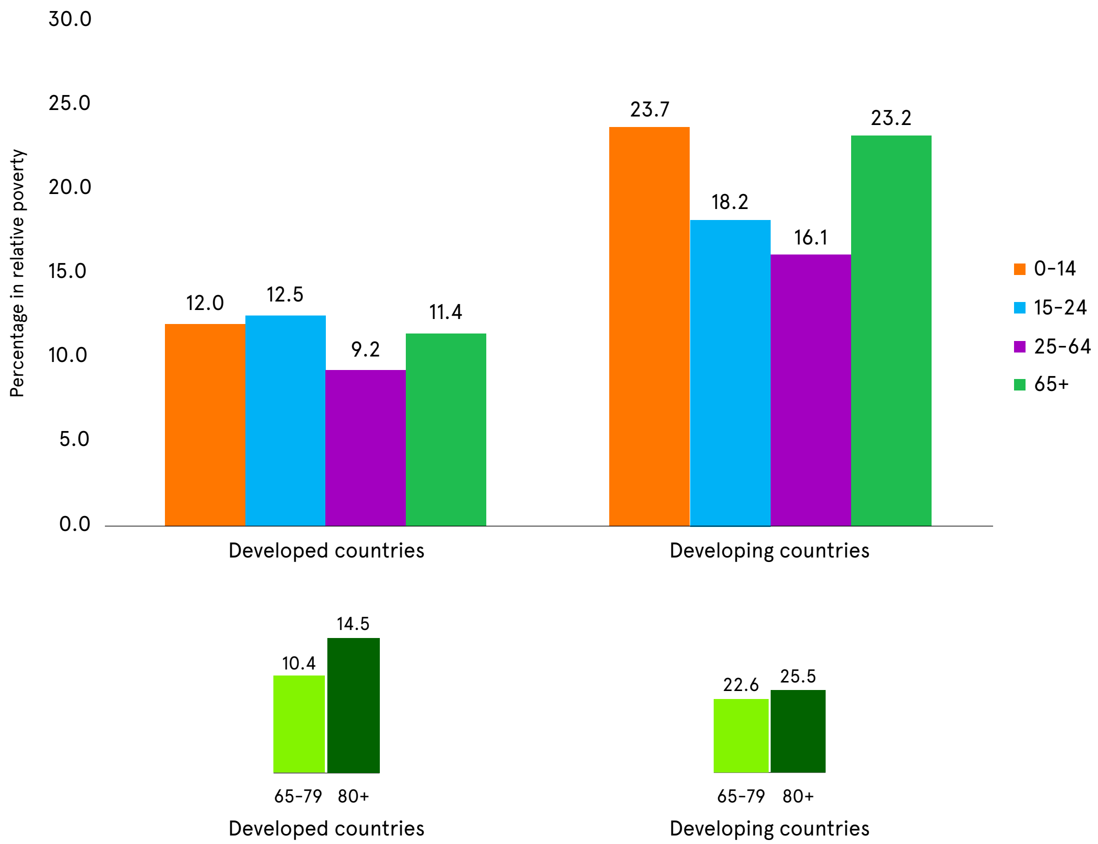
26 The use of relative poverty measures is increasingly common, including in regional and international organizations. The World Bank, for instance, has introduced a relative (or "societal") poverty line to its set of estimates (Jolliffe and Prydz, 2019). These relative measures, including the one used in this chapter, are tailored to country circumstances. They reflect the fact that different countries have different standards for basic needs, namely, higher expenditure may be deemed necessary to cover such needs in a rich country than in a poor one. The main limitation of relative measures is that they rely on a different yardstick to assess poverty in each country, effectively treating individuals differently depending on their country of residence. Half of the median income is close to or even below absolute (extreme) poverty in some low-income countries and way above extreme poverty in high- and even middle-income countries. Considering this limitation, relative poverty measures are used here to compare poverty levels by age and across different groups within countries but not to compare well-being across countries.

27 See indicator 10.2.1, the only indicator for SDG target 10.2 (by 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status). The SDG indicator database does not currently contain information on indicator 10.2.1 disaggregated by age, sex or disability status. See https://unstats.un.org/sdgs/dataportal (accessed on 27 July 2022).

28 The estimates are based on a relative poverty line of half of the median income of the total population. This threshold is also used by the OECD, which calculates estimates using similar assumptions (see https://data.oecd.org/inequality/poverty-rate.htm). The series in figure 4.1, which is based on harmonized income survey data, covers a larger number of countries (49, including 20 developing countries) than the OECD.

In all regions, people aged 80 years or older, the majority of whom are women, face the highest risk of relative poverty among all age groups. They are more likely than people in younger groups to be widowed and to live alone, two features that affect their economic vulnerability. They also participate less in the labour market and are not as well covered by public pensions as those aged 65 to 79. In Latin America and the Caribbean, for instance, the percentage of persons who neither worked nor received a pension was higher among people aged 70 or over (37 per cent) than among those aged 60 to 64 (25 per cent) or aged 65 to 69 (29 per cent) around 2016 (ECLAC and ILO, 2018). Moreover, the share of those aged 70 and older who did not work or receive a pension was much higher among women (48 per cent) than among men (13 per cent) (ibid.).

Figure 4.1 **Share of the population living in relatively poor households by broad age group, late 2010s (or latest year with data)**



Source: Calculations based on data from the LIS Database (multiple countries; surveys conducted between 2010 and 2020). Available at www.lisdatacenter.org.

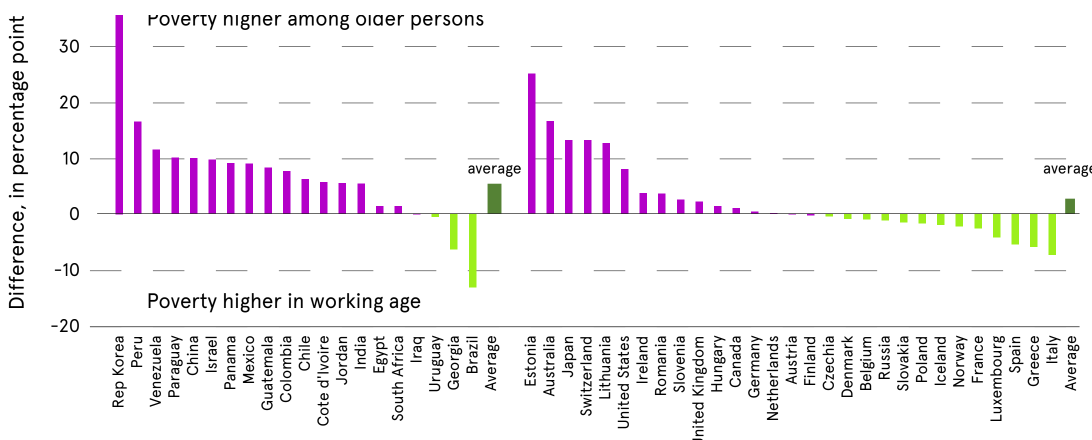
Note: Estimates are based on a relative poverty line of 50 per cent of the median income of the total population. They are calculated using harmonized survey data on disposable household income, reported at the individual level, for 20 developing countries (3 in Africa, 7 in Asia, and 10 in Latin America and the Caribbean) and 29 developed countries. The calculation of individual-level income is based on a squared root scale. Disposable income includes labour income, capital income, pensions, public social benefits and private transfers minus income taxes and social security contributions.

Differences in the prevalence of relative poverty by age vary substantially across countries (figure 4.2). The Republic of Korea stands out for having much higher levels of relative poverty among older persons than among the working-age population. Declines in family support, linked to changes in living arrangements and a rapid increase in the number of older persons living independently, have not been countered with adequate public pensions and other social protection measures (Ku and Kim, 2020; OECD, 2016). At the same time, younger cohorts have benefited from the country's fast economic transformation and rising levels of education much more than older persons in this rapidly ageing country. By contrast, Brazil's social protection system plays a major role in keeping older persons out of poverty and reducing inequality at older ages, including through the Beneficio de Prestaçao Continuada, a social assistance transfer for older people and people with disabilities living in poor households, and Previdência Rural, which includes informal workers (Barrientos, 2021; Tramujas Vasconcellos Neumann and Albert, 2018).

Across developed countries, there is some correspondence between public spending on pensions and the old-age poverty gap. Pension spending is below the OECD average in most countries that, according to figure 4.2, suffer from relatively high old-age poverty.[29] Australia's spending on pensions (3.9 per cent of GDP in 2019) is just over half the OECD average (7.7 per cent of GDP). Estonia's pension system has one of the lowest net replacement rates in the European Union.[30] By contrast, pension spending is above 10 per cent of GDP in France, Greece, Italy and Spain.

Figure 4.2

Differences in relative poverty rates between older and working ages, selected countries, 2018 (or latest year with data)



Source: Calculations based on data from the LIS Database (multiple countries; surveys conducted between 2010 and 2020). Available at www.lisdatacenter.org.

Note: See note on figure 4.1.

29 See the OECD pension spending indicator at https://data.oecd.org/socialexp/pension-spending.htm (accessed on 11 April 2022).

30 Net replacement rates are defined as an individual's net pension entitlement over her or his net (disposable) income before retirement.

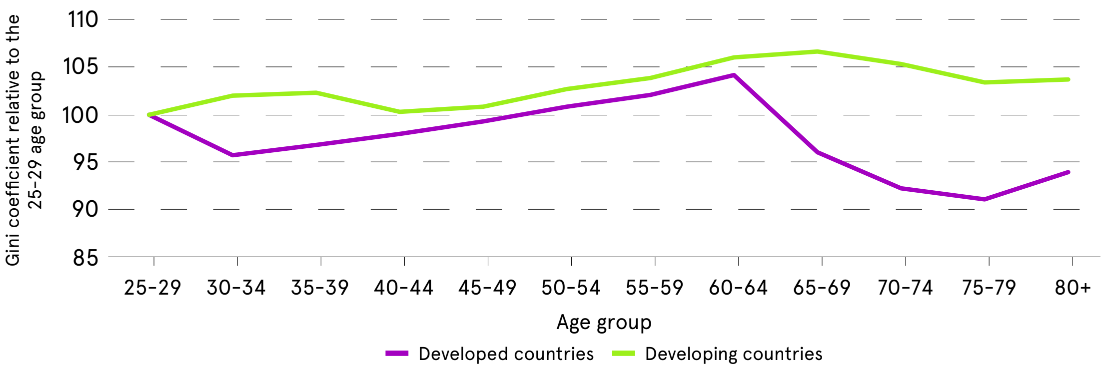
With growing numbers of older persons in both developed and developing countries, high levels of economic insecurity should be a rising concern. Longer life expectancies and policy reforms that reduce future retirement income could exacerbate these trends. They may even jeopardize the general health and economic improvements observed among older persons in developed regions in recent decades.

With growing numbers of older persons in both developed and developing countries, high levels of economic insecurity should be a rising concern

2. INEQUALITY NEED NOT INCREASE IN OLD AGE

Poverty snapshots by age conceal large and persistent inequalities within each age group. Overall, the shape of the age-specific disposable income inequality curve, which is used to compute the Gini coefficient, differs substantially between developing and developed countries (figure 4.3). Inequality is higher among older persons than among working-age people in developing countries but lower in developed countries. In the 18 developing countries included in this analysis, inequality is higher among people aged 65 to 69, on average, than in any other age group. This occurs despite the fact that people at the bottom of the income distribution tend to die earlier, on average, a selection effect that should push inequality down as people grow older.[31] In developed countries, by contrast, a precipitous drop in inequality starts around age 65.

Figure 4.3 **Gini coefficient by age, selected developed and developing countries, 2018 (or latest year with data)**



Source: Calculations based on data from the LIS Database (multiple countries; surveys conducted between 2010 and 2020). Available at www.lisdatacenter.org.

Note: The figure shows the Gini coefficient of equivalized disposable household income. Income values are top and bottom coded. Estimates by age relative to the Gini coefficient at ages 25 to 29 are based on information for 29 developed countries and 18 developing countries (3 in Africa, 5 in Asia and 10 in Latin America and the Caribbean).

31 Cohort effects may influence age-specific Gini coefficients. That is, inequality may have been systematically higher among people in older cohorts throughout their lives. Levels of inequality have increased across successive cohorts in most countries, however, as discussed below. Cohort effects alone probably do not explain the rise in inequality over people's work lives or the sudden decline in developed countries after ages 60 to 64. Longitudinal studies support the finding that inequality tends to increase with age within cohorts, especially during people's working lives (Hungerford, 2020; Crystal, Shea and Reyes, 2017; Deaton and Paxson, 1994).

The sudden drop in inequality starting at around age 65 in countries that, overall, have comprehensive social protection systems, including public pensions and other public old-age transfers, suggests that these play an important role in curbing income inequality in old age.32 In general, pension entitlements are less unequal than wages in countries with broad coverage (OECD, 2013, 2015, 2017; Bosch, Melguizo and Pagès, 2013). Replacement rates are higher for people with lower wages; tax-based pensions provide an income floor for the lowest earners. In countries without comprehensive social protection systems, the redistributive role of public pensions is absent, and inequalities over the life course persist at older ages.

The sudden drop in inequality starting at age 65 in countries with comprehensive social protection systems suggests that these play an important role in curbing inequality in old age

3. SAVING FOR OLD AGE STUMBLES OVER MULTIPLE OBSTACLES

Wealth assumes an increasingly important function for economic security throughout old age. Individuals and households use wealth accrued throughout their lives, including physical assets such as homes or land and financial assets, to finance consumption and withstand shocks once they stop working. The distribution of household wealth is typically more unequal than the distribution of income within and across countries (United Nations, 2020d).

About 46 per cent of adults save for old age in high-income countries, compared to 16 per cent in middle- and low-income countries.[33] These disparities reflect people's varying capacities to accrue wealth based on their incomes and their unequal access to asset markets. In 75 countries, women's property rights are still restricted, for instance (World Bank, 2019). Even without legal obstacles, there are substantial inequalities in access to and use of financial services, including in old age. A lack of financial literacy, limited digital capabilities, illiteracy (especially in developing countries), discrimination, and the absence of financial services, products and digital infrastructure affect some groups of people more than others.

Given the challenges in measuring household and individual wealth, even more so if the focus is on differences by age, estimates are not widely available. Figure 4.4 shows wealth levels by age among people living in relative income poverty and those living above the poverty line in eight developed countries with available data (Australia, Canada, Finland, Germany, Italy, Norway, the United Kingdom and the United States).

Average household wealth typically rises with the age of the household head up to the official retirement age, when older persons start to spend their savings or

32 Differences in living arrangements between more and less developed countries may also play a role. In settings where the co-residence of older persons and working-age adults is still common, mostly in countries in developing regions, the disposable income of households of older persons reflects inequalities during working ages to a greater extent than in settings where intergenerational co-residence is less common.

33 World Bank, Global Findex database. Available at https://www.worldbank.org/en/publication/globalfindex.

else stop accruing assets and the burden of liabilities declines. There are large gaps in wealth between people living in relative income poverty and those with incomes above the relative poverty line, however. These differences increase up to ages 70 to 74. Gaps in wealth widen among survivors despite the fact that the poorest people tend to die earlier than people with higher incomes and more wealth.

The composition of wealth matters as well. Non-financial assets constitute a large share of wealth owned by older persons with low incomes in the eight developed countries with data (see annex figure 4.1.1). Their main residence, vehicles and other non-liquid durables and valuables make up 90 per cent of these non-financial assets. Spending down these assets to finance consumption is challenging, particularly for older persons in poverty, who for the most part can hardly downsize their homes.

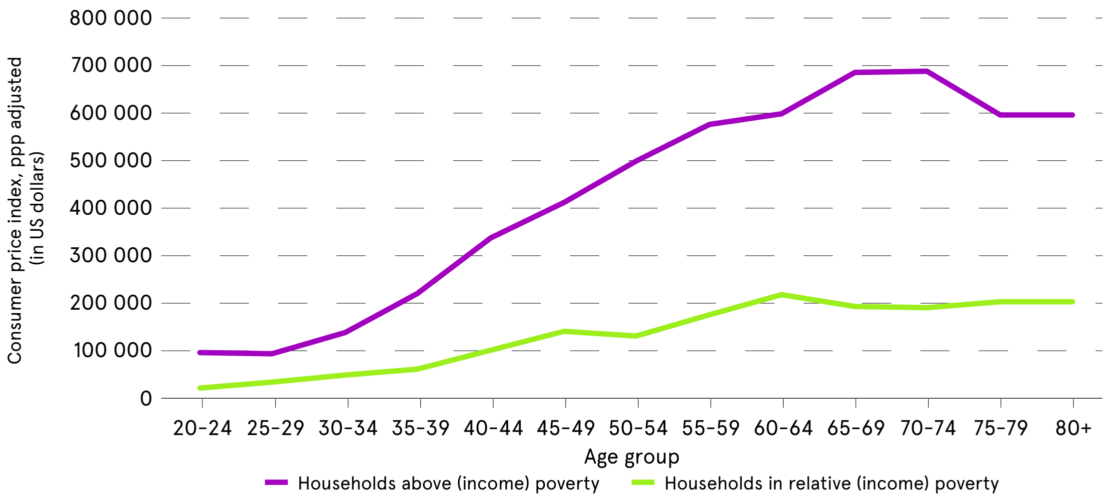
4. GENDER DISPARITIES MAKE OLDER WOMEN POORER

Inequalities between men and women persist into old age. Economically, women's lower levels of formal labour market participation, shorter working lives and lower wages during working years lead to more economic insecurity in later life. As a result of longer life expectancies, older women are also more likely than older men to be widowed, less likely to remarry following widowhood and more likely to live alone, three features that contribute to their economic insecurity, especially by age 80 or beyond.

In developed countries with data, higher levels of relative poverty among older persons compared to people of working age are due to greater poverty among older women (see figure 4.5.A). In developing countries with data, relative poverty is higher among women than men at all ages (figure 4.5.B).

Figure 4.4

Household wealth by age, selected developed countries, 2019 (or latest year with data)

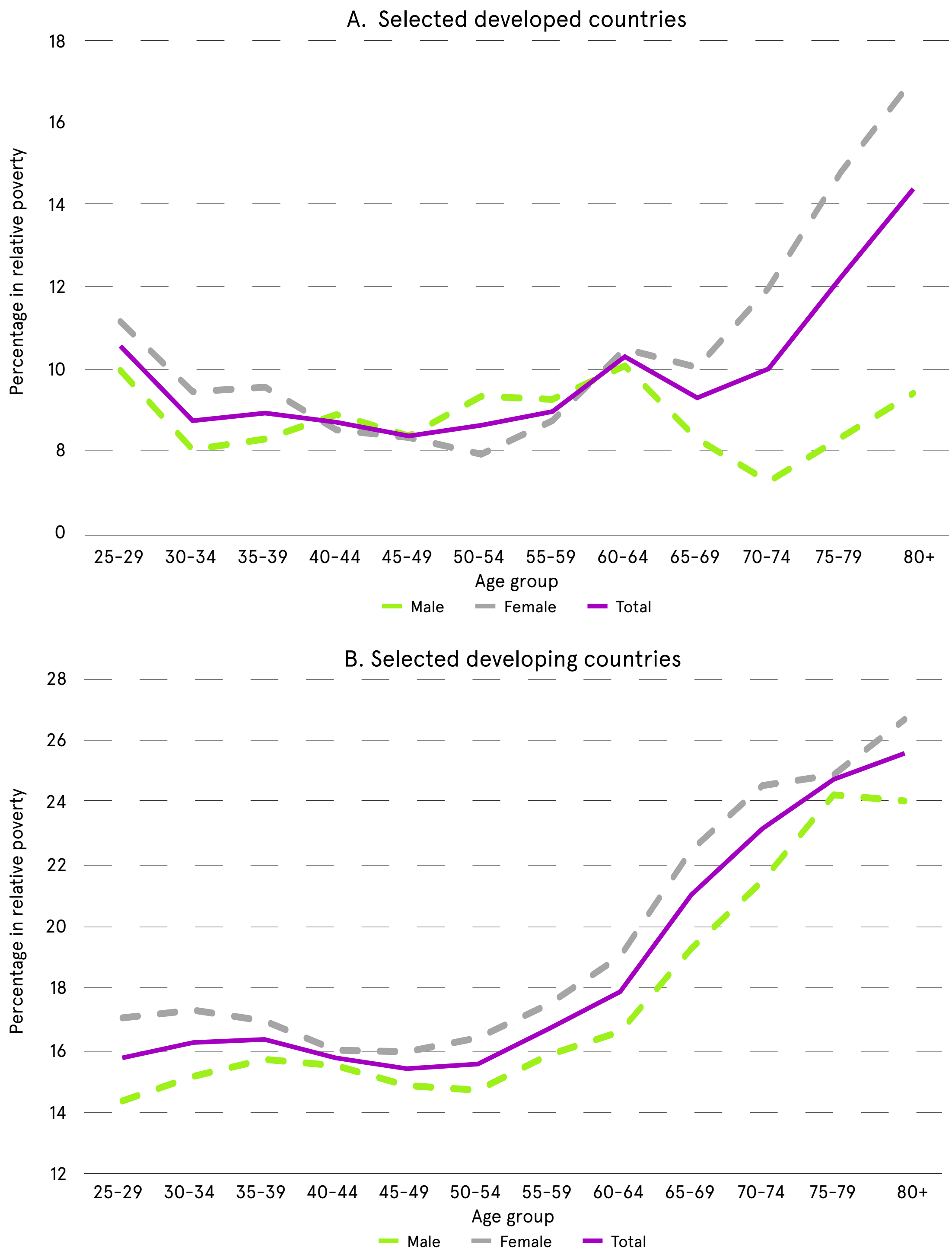


Source: Calculations based on data from the LIS Database (multiple countries; surveys conducted between 2010 and 2020). Available at www.lisdatacenter.org.

Note: Estimates are calculated using harmonized survey data on wealth reported at the household level for eight developed countries (Australia, Canada, Finland, Germany, Italy, Norway, the United Kingdom and the United States). Households in relative poverty are those living under 50 per cent of the median income of the total population. Estimates of household wealth include financial assets except pension assets and non-financial assets minus liabilities.

Figure 4.5

Share of the population living in relative poverty by age and sex, late 2010s (or latest year with data)



Source: Calculations based on data from the LIS Database (multiple countries; surveys conducted between 2010 and 2020). Available at www.lisdatacenter.org.

Note: See note on figure 4.1.

While retirement benefits and old-age transfers should reduce old-age poverty in countries with strong social protection systems, the gap in pensions between men and women is substantially higher than the gender pay gap, at least in the OECD countries (OECD, 2019). Older women are more likely to have worked in lower-paying jobs than men. Because of the unequal distribution of care and domestic work, as well as their reproductive roles, women also have shorter working careers and lower pension incomes even as they spend longer periods in retirement. Some countries have recognized these differences in pension entitlements. A growing number of countries in Europe offer caregiver credits for public, tax-funded pensions, for instance (Gerlinger, 2018). Expanding access to tax-funded old-age pensions and reducing requirements for access to contributory schemes have also helped women.

However, pension systems are not a silver bullet to close gaps in old-age poverty that result from the wider inequalities that women and other disadvantaged groups confront throughout their lives. Addressing these disparities requires more comprehensive life course approaches, including social, employment and family policies.

5. OTHER DIMENSIONS OF OLD-AGE EXCLUSION

While older persons do not always fare worse than younger people economically, they face spatial and social barriers that exacerbate the risk of social exclusion.[34] The fact that disability grows with age but supportive infrastructure is often insufficient limits autonomy, mobility and access to spaces, markets and services. Surveys have found that older persons report lower life satisfaction, fewer social interactions and less social support than working-age adults (OECD, 2020a). Against a backdrop of age discrimination, they also express a lack of agency or control over their lives and feel that they are not treated with dignity or respect (WHO, 2021a). Across Europe, more than one in three people aged 65 years or older reported being a target of ageism (Abrams and others, 2011). A meta-analysis of 52 studies across 28 countries suggested that one in six older persons has suffered from some form of elder abuse, a problem exacerbated by the pandemic (Yon and others, 2017).

Older persons report lower life satisfaction, fewer social interactions and less social support than working-age adults

For employed older workers who can afford to retire or are forced to do so, leaving the labour market often leads to shrinking social networks (Kauppi and others, 2021; Patacchini and Engelhardt, 2016). It also means losing a source of social identity and social acceptance. Older people who remain in the labour market, however, often report high levels of job insecurity and discrimination (Ayalon and Tesch-Römer,

34 Defined as a state in which individuals are unable to participate fully in economic, social, political and cultural life (United Nations, 2016).

2018; Phoenix and Parravani, 2019; OECD, 2020a). Cross-country evidence shows that employers are less likely to hire older than younger applicants for the same position and that, once employed, older workers have less access to training (Chang and others, 2020; Lahey, 2006).

Social connections are important for people's well-being and health. Compared to younger people, older persons report fewer social interactions and a lack of social support in times of crisis. In OECD countries, older people are almost three times more likely than young people to say they have no friends or family members to turn to for help in an emergency (OECD, 2020a). The COVID-19 crisis exacerbated social isolation among older persons, particularly at its onset (see box 4.2). Digital technologies and new media platforms allowing connections with family and friends may reduce social isolation to some extent. Yet a persistent digital divide in accessibility and usability may exclude older people from yet another sphere of social life.

A persistent digital divide in accessibility and usability may exclude older people from yet another sphere of social life

BOX 4.2 COVID-19, ISOLATION AND DISCRIMINATION AGAINST OLDER PERSONS

The COVID-19 pandemic has disproportionately affected older people. After many countries enacted limits on interpersonal contact to control the virus, warnings emerged about the possible unintended impacts on vulnerable groups, including older people.

Early evidence suggests, for instance, that lockdowns prevented health and social care systems from effectively responding to older peoples' pre-existing needs (HelpAge International, 2020). This has been a particular problem for older women as they are overrepresented among older persons and require more long-term care than older men. Even before the pandemic, care arrangements for older persons were fragile and unequal.

The restrictions disrupted social connections for many older persons, contributing to loneliness, stress and deteriorating mental health. Isolation has been particularly acute for those living in dedicated care facilities or alone. For older persons with cognitive decline or dementia, the interruption of regular and familiar social interactions and group activities has likely been particularly damaging. Some restrictions, including the closure of long-term care facilities to visitors, persisted far longer than others due to the specific threats the virus poses to older persons.

BOX 4.2

The physical isolation of older persons from traditional social networks may have put some at greater risk of elder abuse and neglect. Social isolation is a known risk factor for elder abuse as it limits opportunities for detection (Burnes and others, 2015). While data are still limited, a study suggests that, in the United States, one in five older persons was abused during the pandemic, an over 80 per cent increase compared to pre-pandemic estimates (Chang and Levy, 2021).

Measures meant to protect older persons may have contributed to narratives, in news and media coverage, of COVID-19 as mainly an "older person's illness" and of older people as a homogenous and extremely vulnerable group, despite large variations in risks within age groups. The World Health Organization (2021a) has noted that this framing may have undermined public health efforts against COVID-19 by pitting the needs of younger and older adults against each other and eroding intergenerational solidarity.

Health care, social care and social protection, and transportation and mobility are lifelines for older persons to participate in society. Even in countries that offer these public services, older persons are often excluded or their needs are not adequately met (United Nations, 2016). Insufficient access to services and supporting infrastructure is a particular problem for older persons in rural and remote areas. As an increasing number of public services are offered online, age-related gaps in access and skills compound these challenges.

Physical isolation and immobility also limit access to public services and spaces, forming a vicious cycle of exclusion for some older persons. A lack of accessible public transport and unwalkable public spaces such as marketplaces, hospitals and parks create barriers to their participation. They also threaten the ability of older persons to "age in the right place", as discussed in chapter 5.

B.

INEQUALITIES OVER THE COURSE OF LIFE ADD UP

Snapshots of older persons at one point in time provide little information on how advantages or disadvantages over the life course affect health and other markers of well-being in later life (Carr, 2019). A life course approach helps identify the roles that early life conditions and people's paths during adulthood play in driving divergent outcomes in old age. It can also shed light on some of the structural social and political factors that explain unequal ageing.

Education has consistently emerged as a primary determinant of health and well-being throughout the life course

This section examines how education and employment paths affect economic prospects and health in old age – specifically, the risk of living in poverty or with a disability. Despite the importance of understanding the determinants of healthy ageing, necessary data are not widely available, particularly in developing countries. Comparisons across countries are even more challenging due to the lack of harmonized cross-country surveys containing retrospective information as well as the dearth of longitudinal studies. These are crucial to understanding how context affects the ways that family, education and work influence ageing outcomes. Better ageing outcomes in some countries than in others provide some evidence to assess which social and economic policies matter most.

1. HEALTH DISPARITIES AMONG OLDER PEOPLE OFTEN START EARLY: EDUCATION IS KEY

Adversity early in life can leave lasting imprints on health and well-being in later ages. Extensive research illustrates how disadvantages in infancy and childhood increase the likelihood of developing chronic diseases, engaging in unhealthy behaviours and suffering from functional limitations in adulthood.[35]

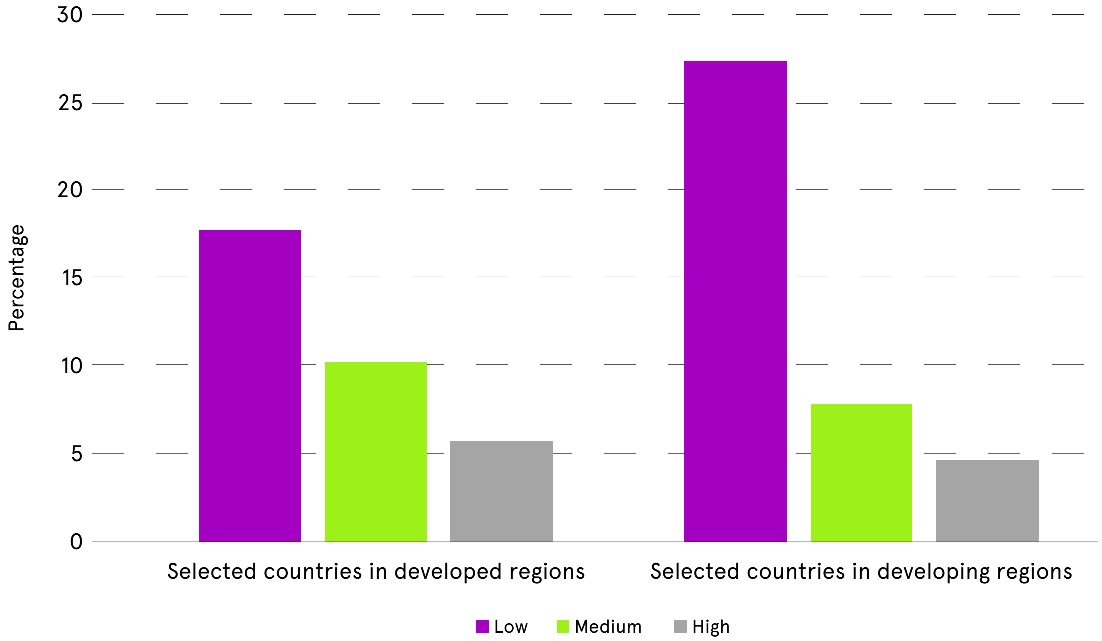
Education has consistently emerged as a primary determinant of health and well-being throughout the life course. A person's education, and even that of their parents, affects their income, access to health care, lifestyles and social networks – all the way to old age.

Disparities in the prevalence of relative old-age poverty by education, for instance, are very large (figure 4.6). Gaps are greater in developing countries but substantial in developed countries as well, suggesting that social protection in old age does not fully correct disadvantages that accumulate along the lifespan even in these countries. Older persons with low levels of education experience three to four times as much poverty as those with high levels of education in developed countries with data.

35 See, for instance, Carr, 2019; Kobayashi and others, 2017; McEniry, 2013; and van der Linden and others, 2020.

Figure 4.6

Share of older persons living in relative poverty by level of education, 2019 (or latest year with data)



Source: Calculations based on data from the LIS Database (multiple countries; surveys conducted between 2010 and 2020). Available at www.lisdatacenter.org.

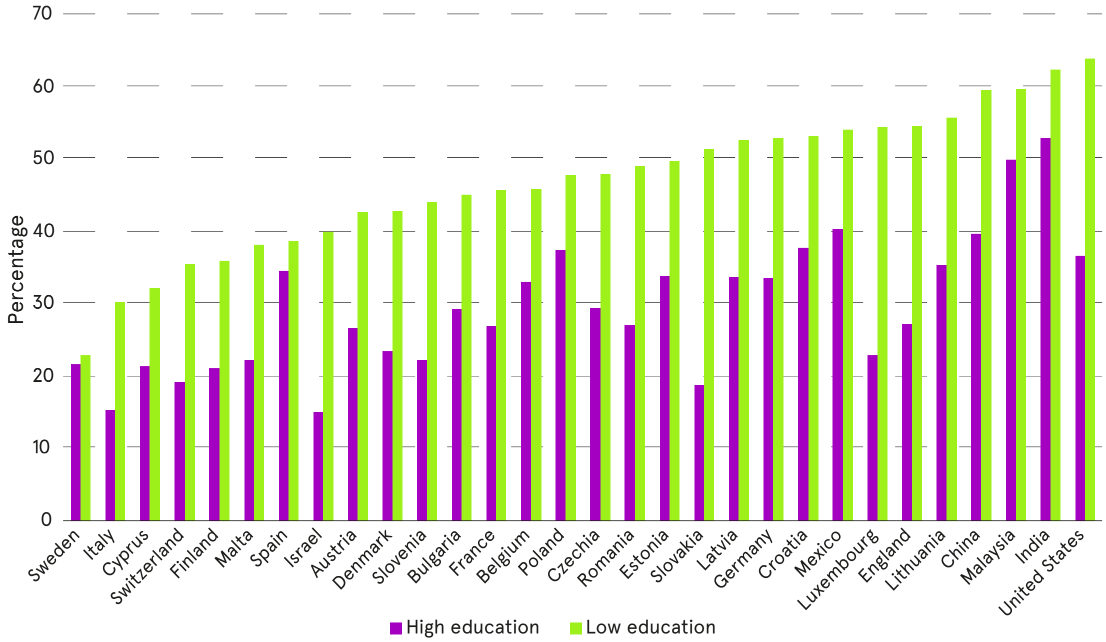
Note: Based on information for 18 developing countries and 29 developed countries. The educational level is classified into three categories: low (primary and lower secondary levels), medium (upper secondary) and high (tertiary).

People with less education are also more likely to suffer from poor health and die earlier. Even with this selection effect, health disparities by education persist into old age.

As shown in figure 4.7, there is a significant difference in functional disability prevalence – defined as limitations in completing daily tasks, as in the note for the figure – between the least and most educated older adults, across countries. On average, the prevalence of disability is twice as large among older adults with low levels of education. In some developed countries, levels of disability among the less educated are as high as in the developing countries in figure 4.7. The disability gap differs by country in part due to differences in social protection coverage, levels of spending on public education and support to workers or families with children.

Figure 4.7

Share of adults 50 and older with a functional disability by education level, selected countries, around 2018



Sources: Harmonized Health and Retirement Studies accessible from the Gateway to Global Aging Data platform. Available at https://g2aging.org/. Studies include the China Health and Retirement Longitudinal Study, the English Longitudinal Study of Ageing, the Irish Longitudinal Study on Ageing, the Longitudinal Aging Study in India, the Malaysia Ageing and Retirement Study, the Mexican Health and Aging Study, the Survey of Health, Ageing and Retirement in Europe and the United States Health and Retirement Survey.

Notes: Functional disability is measured by whether the respondent had some difficulty in any of the following activities: (a) walking 100 metres, (b) getting up from a chair, (c) stooping, kneeling or crouching, or (d) lifting or carrying 10 lbs (5 kilos). Educational attainment in China, India, Malaysia and Mexico was classified as none (low) or more than primary education (high). In all other countries, education was divided into low (less than upper secondary education) and high (tertiary education). Estimates are age-adjusted and weighted to correct for sample design. The age range of the studies is 50 to 118 years.

BOX 4.3

DISPARITIES IN DISABILITY SIGNAL UNEQUAL AGEING

The onset and severity of disability, affecting either physical or mental health, profoundly impacts people and their families. It incurs large economic and societal costs in terms of health care and caregiving needs. The estimated global cost of dementia alone reached nearly $1 trillion in 2016 (Xu and others, 2017). Physical disability can include limitations in the ability to carry out daily activities needed for personal care and an independent life, such as eating, bathing and mobility.

The onset of disability prior to old age and a disproportionately high rate of disability are indicators of poor health that are unequally distributed. Disability rates vary significantly throughout the world and reflect differences in childhood circumstances, adverse exposures to disease and risk, and uneven access to resources and opportunities. In general, people in developing countries are more exposed to risk factors associated with disability, such as limited access to health care, unsafe water systems and malnutrition. Disability rates are also steeper in populations that have experienced catastrophic events such as natural disasters and civil conflict. While disability rates are higher in developing countries than in developed countries around the world, disability prevalence is greatest among the poorest in all countries (Hosseinpoor and others, 2013).

Examining functional limitations as a measure of disability (see note for figure 4.7) allows cross-national comparisons of inequalities in health in old age as it tracks the difficulties that people face in daily life. It does not depend on access to health care and medical professionals for diagnosis, as is the case for examining differences in the prevalence of diseases, such as diabetes or cardiovascular disease.

2. EMPLOYMENT CAN SUPPORT OR DAMAGE HEALTH

A person's occupation, whether they have a job and the conditions in which they work shape well-being in old age. While the effects of employment on health depend on the types of jobs people do and their access to social protection, the fallout from unemployment is unequivocally negative. Episodes of unemployment damage physical and mental health,[36] cause financial hardship and lead to isolation and psychological stress. Vulnerable employment, often in the informal sector, has similar impacts as it limits access to social protection and links with social and political organizations, including unions.

Physically demanding jobs can also damage health. In European countries, men and women holding such jobs since the start of their working lives had a 35 and 41 per cent greater risk of disability by the age of 50, respectively, than those who did not (see figure 4.8 and annex figure 4.1.2). The interplay between the type of work and disability later in life occurs independently of the level of education. For women, the effect of working or having worked in physically demanding jobs is as large as not having higher education.

The significant, independent effects of employment characteristics and educational attainment on functional disability at older ages suggest distinct pathways linking each to ageing.

Figure 4.8 **Odds ratios of the effect of working in physically demanding jobs on functional disability, adults aged 50 or older, selected European countries and Israel, around 2018**

Source: Survey of Health, Ageing and Retirement in Europe for ages 50 to 118. Available at http://www.share-project.org/home0.html.

Notes: The numbers represent the odds ratio of experiencing disability compared to workers with non-physically demanding jobs (employment history) and those with tertiary education (education). For employment history, respondents either agreed or disagreed with the following statement: My main job was physically demanding. Results are significant at the p <.001 level.

36 See, for example, Wanberg, 2012 for a review.

Job demands may increase the risk of injury or other health risks that can lead to disability and poor health in old age. Education likely affects health behaviours. Low educational attainment may be a good proxy of the characteristics of employment history with negative effects on health, other than physical labour, such as episodes of unemployment, job precarity and low wages.

C.

THE FUTURE OF AGEING: MORE UNEQUAL

The situation of older persons will continue to evolve as today's children and youth grow older. Assessing the social and economic characteristics of successive cohorts of youth, working-age adults and older persons provides important insights into the future of our ageing world.

Successive cohorts of youth and adults are increasingly unequal and economically insecure, in both developed and developing countries, despite improvements in health and education

Despite the impact of COVID-19 and other sources of uncertainty, future cohorts of older persons are likely to be healthier and more educated – and therefore more productive – than those today. They will benefit from continuing scientific and technological innovations, including medical and pharmaceutical advances, that will allow many to enjoy healthier and longer lives (Carr, 2019). Health has largely improved throughout the life course, both over time and across successive cohorts. Yet from an economic perspective, successive cohorts of youth and adults are increasingly unequal and economically insecure, in both developed and developing countries, despite improvements in health and education. Without swift and bold policy action to counter this trend, future cohorts of older persons may be even more economically unequal than those today.

1. THE EMPLOYMENT CRISIS WILL BE FELT ACROSS GENERATIONS

A. PRECARIOUS WORK AND LACK OF EMPLOYMENT

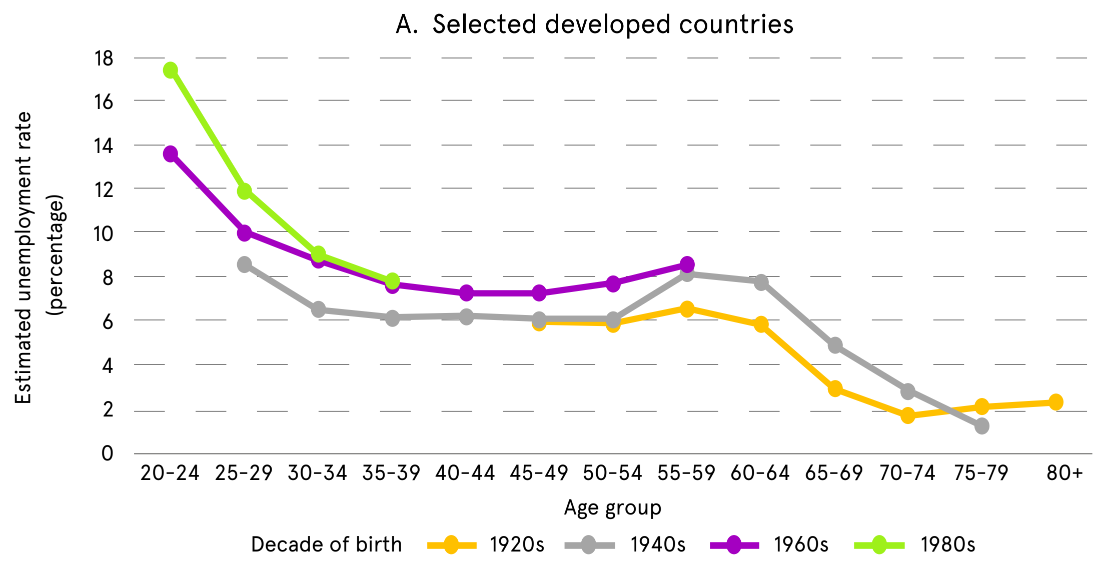
Recent decades have seen dramatic changes in how people work. Labour market participation has helped millions of people to escape poverty and empowered women and other disadvantaged groups. Yet deficits in decent work are large and persistent. Full-time jobs under standard employment contracts, which usually entail access to social protection and other employment rights, have ceased to be the norm even in developed countries. Involuntary temporary, part-time and casual work, including zero-hours contracts, subcontracted labour and self-employment, are on the rise. New forms of employment and work are emerging partly through digitalization and automation and in a growing "gig" economy. Workers in these new forms of employment have little employment security, unsteady incomes and limited access to social protection, much like workers with more traditional forms of non-standard contracts as well as those in the informal economy.

This growing labour market flexibility has not brought about more employment opportunities for all workers. Globally, the number of jobless persons increased from 161 million in 2000 to 187 million in 2019 and is projected to touch 207 million in 2022, after reaching 221 million in 2021 due to the COVID-19 crisis.[37] The unemployment rate hovered between 5 and 6 per cent before the crisis.

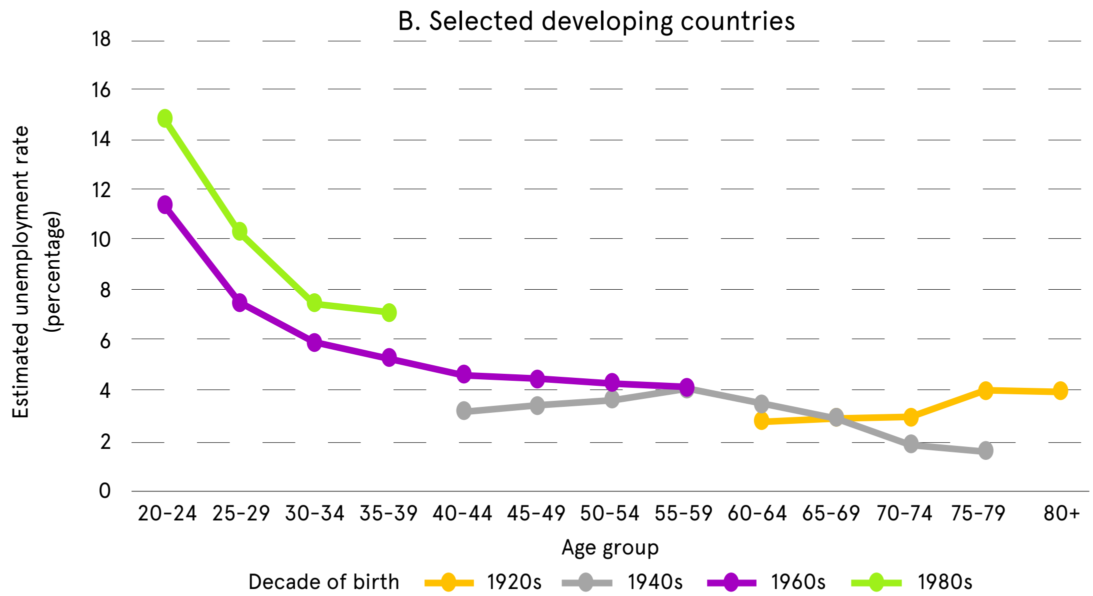
Growing unemployment levels across successive 10-year birth cohorts are evident in figures 4.9.A and 4.9.B. Unemployment has increased from one cohort to the next in practically all age groups in developed and developing countries with data. For workers aged 25 to 29, for instance, unemployment rose from 9 per cent for the cohort of people born in the 1940s, on average, to 12 per cent for those born in the 1980s in developed countries. For workers aged 55 to 59, it climbed from nearly 7 per cent for those born in the 1920s to 9 per cent for the 1960s cohort. In developing countries, the shorter cohort series also suggests rising unemployment from one cohort to the next, particularly among younger workers.

To some extent, temporary shocks affect trends across cohorts. For example, part of the 1980s cohort reached their 20s during the 2008 financial and economic recession, which resulted in a protracted unemployment crisis. This downturn and other disturbances have had scarring effects on workers, affecting their employment prospects in the long term. It is unlikely that temporary setbacks alone, however, explain the increase in unemployment across birth cohorts.

Figure 4.9 **Estimated unemployment rate by age and birth cohort**



37 ILO Statistics. Available from: https://ilostat.ilo.org/. See also ILO, 2022.



Source: Calculations based on data from the LIS Database (multiple countries; surveys conducted between 2010 and 2020). Available at www.lisdatacenter.org.

Notes: Based on information for 29 developed and 16 developing countries. Data come from successive waves of the LIS Database, from 1978 to 2019. Each line represents a 10-year birth cohort (that is, people born between 1 January 1920, 1940, 1960 or 1980 and 31 December 1929, 1949, 1969 or 1989, respectively). The trend for each cohort is estimated using age and country fixed effects to adjust for some missing observations, especially in earlier survey waves.

Unemployment trends are an incomplete measure of deficits in productive employment and decent work. In countries lacking comprehensive social protection systems, most workers cannot afford to stay unemployed. An estimated 60 per cent of workers worldwide, and over 70 per cent in developing countries, struggled to earn income through informal employment in 2019 (ILO, 2021a; World Bank, 2021). As a result of the pandemic and measures to contain it, informal workers were three times as likely as workers in formal employment to lose their jobs in countries with data (ILO, 2021a).

Persistent informality and the rise of non-standard forms of formal employment pose a challenge to income security in old age

Persistent informality and the rise of non-standard forms of formal employment pose a challenge to income security in old age. Most workers in informal employment do not pay into contributory pensions or other social protection programmes. In fact, a lack of social protection coverage is often a criterion to identify informal employment (Gatti and others, 2014). Further, liquidity constraints limit the ability of these workers to save privately and regularly, since wages are lower and more unreliable in informal than in formal employment. Such workers also face many barriers to accessing formal and reliable financial services, from low financial literacy and high transaction costs to a lack of information. Many workers in the "gig" economy, own-account workers and those with temporary or part-time contracts face similar obstacles due to unsteady incomes and the lack of employment security.

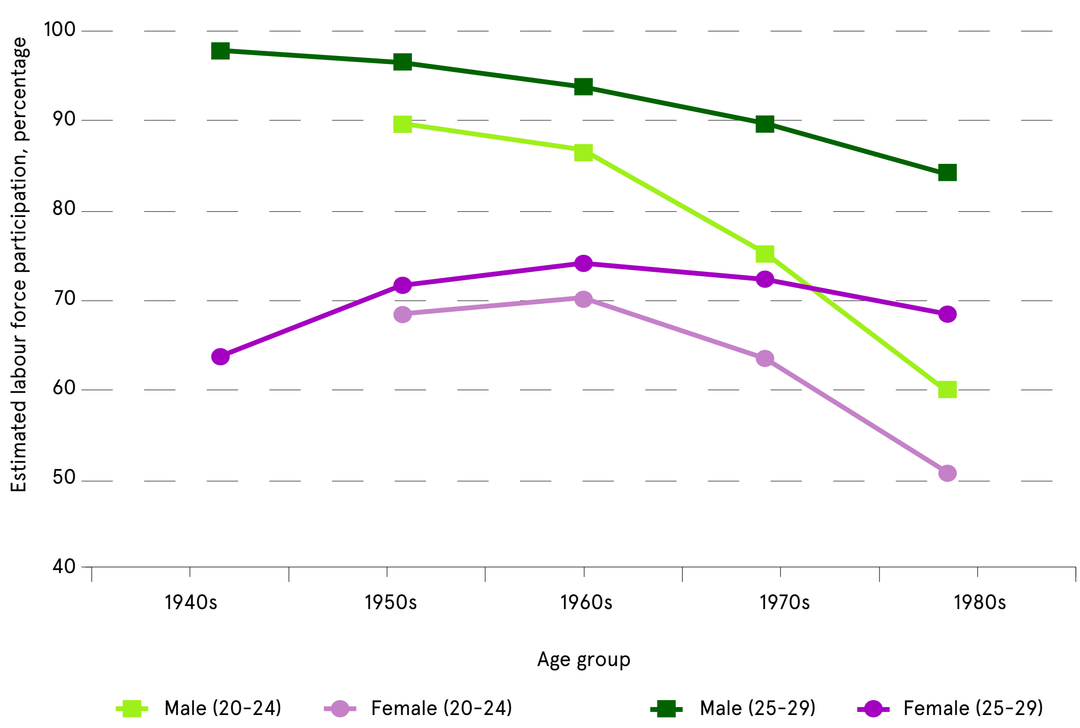
B. THE YOUTH EMPLOYMENT PREDICAMENT

For young people, decent jobs are an important step in the transition to adulthood. Since early labour market experiences shape future employment opportunities, decent work deficits, both in the amount and quality of jobs available to youth, can have long-lasting consequences in terms of poverty, including in old age, and may even deter the well-being of future generations. They also challenge the ability of countries moving through a demographic transition to capitalize on a demographic dividend.

Young people are three times as likely to be unemployed as adults and bear the brunt of employment losses during recessions (ILO 2021a, 2021b). Many countries have witnessed a big surge in the number of discouraged young workers, who are available to work but have dropped out of the labour market. As shown in figure 4.10, labour force participation rates on average have declined steadily among young men aged 20 to 24 as well as young adults aged 25 to 29 from one birth cohort to the next in countries with data. Female labour force participation rates reached their highest point for young women of the 1960s cohort and have declined across more recent cohorts (1970s and 1980s).

Figure 4.10

Estimated youth labour force participation rate by birth cohort



Source: Calculations based on data from the LIS Database (multiple countries; surveys conducted between 2010 and 2020). Available at www.lisdatacenter.org.

Note: Based on information for 29 developed countries and 16 developing countries (see figure 4.1). The horizontal axis represents consecutive 10-year cohorts.

The growing number of years that young women and men spend in education explains part of the decline. Since the mid-2000s, however, the number of young people who are "not in employment, education or training" (known as NEET) has increased. This represents a severe waste of human potential with potentially drastic repercussions, both for young people in terms of lifelong marginalization and exclusion and diminished well-being in old age, and for societies at large, particularly those who could benefit from a demographic dividend.

Growing casualization, underemployment and persistent informality are long-standing features of an employment crisis that has endured even during periods of economic expansion and disproportionately affects youth. The economic insecurity generated by this deep crisis compounds inequality, undermines public trust and damages the social fabric.

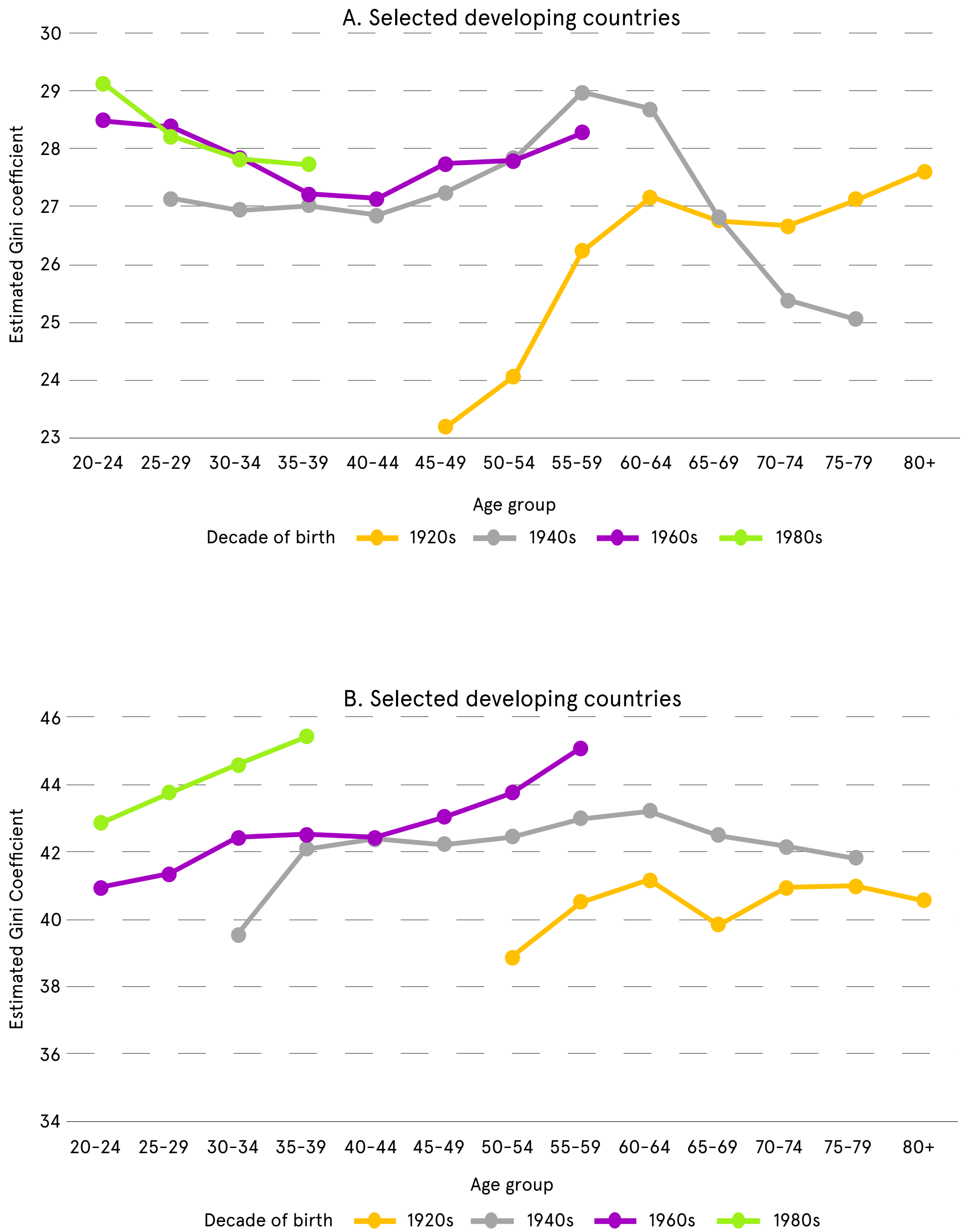
2. INEQUALITY IS RISING

Changes in the world of work have implications for inequality. Cohort analysis based on the Gini coefficient of income inequality shows widening disparities among successive cohorts of youth and working-age people (figures 4.11.A and 4.11.B). Future cohorts of older persons will likely face higher inequality in old age without action to prevent it.

In developing countries, according to figure 4.11.B, the Gini coefficient has increased steadily from one birth cohort to the next at all ages. Cohorts born in the 1960s or later are extremely unequal: Gini coefficients between 44 and 45 are well above the world average of 38 around 2015 (United Nations, 2020d). In developed countries, inequality is also deepening across cohorts at all ages but with exceptions. Increasingly comprehensive social protection systems and other forms of old-age support have helped curb inequality among older people, even during crises (part of the 1940s cohort reached retirement age amid the 2008 financial meltdown and its aftermath).

High and growing income inequality is concerning for ethical and instrumental reasons. Extremely unequal countries are less effective in reducing poverty and less successful in sustaining economic growth than those with low inequalities (United Nations, 2020d). Income inequality is linked to disparities in health and education that transmit disadvantages from one generation to the next. Without appropriate institutions to prevent them, inequalities often concentrate political influence among those who are already better off. Political inequalities tend to maintain or widen unequal opportunities and undercut trust in the ability of Governments to address the needs of the majority, with implications for political stability and the functioning of democracy.

Figure 4.11 **Gini coefficient by birth cohort**



Source: Calculations based on data from the LIS Database (multiple countries; surveys conducted between 2010 and 2020). Available at www.lisdatacenter.org.

Note: Based on information for 29 developed countries and 16 developing countries (see figure 4.1)

3. COVID-19 ALTERED PROSPECTS FOR EDUCATION AND LABOUR MARKETS

The COVID-19 pandemic and the ensuing economic crisis have had major implications for education and labour markets. The hardest hit are low-wage workers, including those in informal employment, and women and youth. As a result, poverty has increased and emerging evidence indicates that income inequality has risen within many countries as well, possibly reversing the declining inequality observed in a majority of developing countries since 2000 (World Bank, 2022; Narayan and others, 2022; United Nations, 2022d). Current trends point to increased inequality between men and women (Alon and others, 2021; Flor and others, 2022) and indicate that youth aged 18 to 25 suffered the largest drops in household income (Belot and others, 2020).

There is a high risk that rising inequality will continue to escalate and even intensify during the recovery from the pandemic and over the long term. In the labour market, the crisis is inducing structural changes that threaten to exacerbate existing divides. The rise in remote work, for instance, is likely to reduce decent work opportunities for low-income workers, in particular, since the tasks they perform are less amenable to working from home, and their housing conditions, including Internet connectivity, are less adequate. Disparities within countries in access to remote work are likely to appear across countries, considering that poor countries have more jobs with physical or manual tasks and lower ICT access and use. A growing reliance on self-employment, particularly in the "gig" economy, could accelerate the trend towards precarious work for a large share of the labour force.

For younger cohorts, disruptions in education brought about by the pandemic compound unequal employment opportunities. Among the various channels through which the pandemic will affect future cohorts, education is probably the most important and de-equalizing one.

Although learning away from school has been temporary for some, others may never return to the classroom due to economic hardship at home that forced them to work instead of going back to school or because they have become discouraged. Even for those who did not drop out, disruptions in education leave scars, affecting motivation, future employment opportunities, wages and social mobility, with implications for well-being in old age. The COVID-19 pandemic and its aftermath may result in a lost generation of children and youth without fast action to address their needs. Current cohorts of children and youth risk losing $17 trillion in lifetime earnings in present value because of school closures induced by COVID-19 (World Bank, UNESCO and UNICEF, 2021).

D.

REDUCING INEQUALITY AND PROVIDING SECURITY – WITHOUT BREAKING THE BUDGET

Many older persons have incomes that are low by national standards, placing them below the relative poverty threshold. Some enjoy a comfortable old age; a few are very wealthy. Without policies to prevent it, disadvantage accumulates through peoples' lives, leading to large disparities. This chapter highlights how countries with comprehensive social protection systems, including broad access to affordable health care, have been much more successful in curbing income inequality and reducing poverty at older ages than those without them.

Countries with comprehensive social protection systems, including broad access to affordable health care, have been much more successful in curbing income inequality and reducing poverty at older ages than those without them

Fiscal sustainability concerns have dominated policy discussions about the impacts of population ageing, including those related to pension reforms. In countries with broad pension coverage, benefits currently represent 2.5 to 5 per cent of GDP (Khan, 2022). Measures to sustain pension expenditures over the long run can affect progress towards more immediate goals of eradicating poverty and reducing inequality.

Nonetheless, action on two fronts can help address sustainability concerns without sacrificing equity or the right to economic security at older ages. First, ex ante actions can be taken over the life course to promote healthy ageing and reduce levels of poverty and inequality before people reach older ages. Second, specific policies to reduce inequality and promote economic security at older ages can be constructed in a fiscally sustainable manner, with a focus on old-age pensions.

1. CUTTING THE ROOTS OF OLD-AGE DISADVANTAGE AND ILL-HEALTH

Policies and programmes that promote the well-being of older persons are critical. Yet from a life course perspective, such efforts are insufficient (Carr, 2019). Poverty and exclusion at older ages result from disadvantages experienced by some groups, including women, throughout their lives. Actions to counter or mitigate such disadvantages along the life course can prevent poverty and exclusion from taking root.

While no single set of policies applies universally, all countries should adopt a coherent and integrated policy strategy to give every person an equal chance to grow older in good health and with economic security. Towards that end, national strategies should promote equal access to opportunities, back fiscal policies conducive to reducing inequality, and tackle prejudice and discrimination (United Nations, 2020d). Strategies centred on these three building blocks should help reduce both age-based and broader inequalities.

While no single set of policies applies universally, all countries should adopt a coherent and integrated policy strategy to give every person an equal chance to grow older in good health and with economic security

While intergenerational equity deserves greater attention and requires urgent policy action in many countries, existing gaps between rich and poor within one age group or one generation are extremely large and consequential, as reflected in the 2030 Agenda's call for reducing economic inequality.[38] Yet States have generally been much more effective in redistributing resources across age groups, especially from the working-age population to children and older persons, than across socioeconomic groups.[39] Promoting equal opportunity requires that all children have an equal chance to advance their capabilities from birth, including through access to quality education and health care, and later in life to enjoy the rewards of their education through opportunities for decent work.

Ensuring healthy ageing should be a key priority. Maintaining good physical and mental health over the life course helps to prevent descents into poverty and promotes the income security of older persons. Health insurance is crucial, since without it, many people fall more seriously ill or end up in poverty due to an inability to afford the cost of health care. Globally, nearly 1 billion (996 million) people face catastrophic levels of health spending, defined as out-of-pocket expenditures above 10 per cent of household income (WHO, 2021b). Out-of-pocket health expenditures per capita doubled from 2000 to 2019 worldwide,40 spurred in part by privatization. The increased costs of health care and other basic services make them unaffordable for people in poverty or affect the quality of services they receive.41

Universal health coverage is a necessary step to ensure affordable and equal access to health-care services for all. Accelerating its achievement will reduce out-of-pocket spending on health, thereby protecting vulnerable groups from financial hardship while improving access to health care. Several developing countries, such as Ghana and Viet Nam, have shown that universal health coverage is feasible at various levels of development.

Addressing the social determinants of health is also important, with education being one of the most critical factors for health in old age. A person's education af-

38 SDG 10 calls for reducing inequality within and among countries. Specifically, target 10.1 calls for progressively achieving and sustaining income growth of the bottom 40 per cent of the population at a rate higher than the national average.

39 Even in Europe, as a Vanhuysse, Medgyesi and Gal (2021) note, States are "better characterized as inter-age redistribution machines, performing lifecycle consumption smoothing rather well" while social policies serve multiple goals in Europe, but "empirically they are neither primarily nor solely responsible for poverty relief and inequality reduction

40 Calculations based on the WHO Global Health Observatory data repository, out-of-pocket expenditure per capita in PPP international dollars. See https://apps.who.int/gho/data/node.main.GHEDOOPpcPPPSHA2011?lang=en, accessed on 15 June 2022.

41 See A/73/396, Note by the Secretary-General on Extreme Poverty and Human Rights on Privatization (26 September 2018).

fects health not only through its impact on income and access to health care but also through behavioural and psychological dimensions such as smoking, diet and access to social support, all of which influence physical and mental health in later life. The significant education gradient in health and well-being across the life course is an argument for improving education access and quality for all, not only as a goal in and of itself but also as a health policy.

Considering rapid changes in labour markets around the world, education should not stop after childhood. All workers, regardless of wages or skills, will experience an increasing number of job transitions. Providing opportunities for learning and skills development throughout people's working lives would allow them to adapt to shifts in labour demand. Education and training systems and techniques must be updated to better meet the needs of learners at all ages.

Improved education and potential increases in labour productivity will have little effect on poverty and inequality, much less on people's ability to save for old age, without successful school-to-work transitions and decent job prospects. In recent decades, real wage growth has not kept pace with improvements in productivity, particularly in developed countries (ILO, 2018b). In addition, wage inequality has grown (ibid). Wage adjustments that reflect changes in labour productivity over time and a statutory minimum wage are key for workers and their families to save. Higher wages would also have a positive impact on public budgets.

High levels of informal employment limit the ability of workers to attain economic security at older ages. Promoting formalization can expand decent work opportunities and reduce working poverty across the life course. Stronger labour market institutions, including regulations, employment contracts, collective agreements and labour inspection systems, along with comprehensive social protection systems based on solidarity and risk-sharing, are essential pathways to formalization. Governments can incentivize the transition from the informal to the formal economy for employers and employees alike by improving access to business services, financing and markets, coupled with continuing education and skills development programmes that reduce barriers to entry into formal work. Formalization is a complex and gradual process, but some countries, including Brazil, Thailand and Türkiye, have significantly reduced informality over the last decade.[42]

2. IMPROVING THE LIVES OF OLDER PERSONS THROUGH ADEQUATE PENSIONS

The struggle against poverty among older persons, aimed at its eradication, is a fundamental objective of the Madrid International Plan of Action on Ageing. Significant progress in extending pension coverage has helped protect many older persons from poverty, including during the COVID-19 crisis. In 2020, 77.5 per cent of older persons worldwide received a pension (ILO, 2021c). While the coverage rate was above 95 per cent in Europe, less than 20 per cent of people above retirement age received a pension in sub-Saharan Africa (ibid.).

42 ILO Statistics on the informal economy. See: https://ilostat.ilo.org/topics/informality/ (accessed on 15 June 2022).

Many countries have expanded pension coverage through tax-funded, non-contributory schemes. These reach groups that are usually undercovered, namely, women and workers in informal employment. But they often do not provide income security on their own. As regards contributory schemes, most countries have defined benefit plans in place. A small but growing number of countries complement these with mandatory or voluntary defined contribution systems (ILO, 2021c). Since most contributory schemes are pay-as-you-go, where the working-age population funds current pension benefits, increases in the share of older persons and the number of years in retirement have caused growing concerns about pension sustainability.

BOX 4.4

THE BUILDING BLOCKS OF OLD-AGE PENSION SYSTEMS

Old-age pensions are payments provided to people above a specific age. Broadly, there are three types of pensions:

1. Tax-financed pensions: Often called social or non-contributory pensions, they are financed from general government revenues and aim to provide a minimum income in old age. Tax-financed pensions can be universal (directed at all citizens above a specific age), pension-tested (available to older persons who do not receive a contributory pension or whose contributory pension benefits are below a certain threshold) or means-tested (for older people whose income is below a certain threshold).

2. Mandatory contributory pensions: These schemes are available to workers, generally in the formal sector, and are meant to partly or fully (in a few cases) replace labour earnings received prior to retirement. Contributory pensions are financed by deductions from employees' salaries and complemented by contributions from employers. Contributory schemes can either be financed on a "pay-as-you-go" basis (contributions from the working-age population financing pensions of current retirees) or funded by the individual through the investment of savings and deferred payment arrangements. Funded schemes can be paid for by investment returns set by the market or by returns set by the Government (in what are called notional defined-contribution plans). The basis of the pension calculation can be related to labour earnings and meant to ensure a specific level of benefits during retirement (in what are referred to as defined-benefit schemes) or linked only to contributions made (in so-called defined-contribution schemes).

3. Voluntary or private contributory pensions: Offered to the working-age population and elective by design, voluntary or private contributory pensions can take many forms. Some are funded exclusively through individual savings while others are funded by both employees and employers.

BOX 4.4

Countries usually adopt different combinations of the above to build their pension systems. In other words, pension systems usually have several tiers, as described above: tier 1 (tax-financed pensions), tier 2 (mandatory contributory pensions) and tier 3 (private or voluntary contributory pensions). Tax-financed pensions are provided through the State. Mandatory contributory pensions are usually offered fully or partly through the State. Voluntary or private contributory pensions are generally operated by the private sector; Governments play only a regulatory role.

To improve fiscal sustainability, many countries have raised the age at retirement, cut down early retirement provisions or indexed the retirement age to increases in life expectancy. Others have bumped up contribution rates or reduced benefits for future retirees, mostly through changes in benefit indexation. There is also a trend towards private defined contribution pension plans, in which benefits depend on the level of savings accumulated by the pensioner, either to complement or replace public defined benefit plans that provide minimum income guarantees.

Measures to ensure fiscal sustainability must be weighed against the need for public pensions to cover and provide income security to all older persons

The combination of these reforms, which will affect youth and future generations more than older people today, is expected to lower benefits. The ILO recorded 57 cases of reforms to reduce pension benefits that were introduced from 2018 to 2020 (ILO, 2021c). In countries of the European Union, the average gross replacement rate of public pensions is projected to decline from 42.5 per cent of the average wage in 2013 to 35.9 per cent in 2053 (European Commission, 2017). Expected changes in replacement rates vary significantly by country: They are projected to fall by more than 20 percentage points in Poland, Portugal and Spain but expected to increase slightly (by less than 2 per cent) in Czechia and Denmark (ibid.).

Measures to ensure fiscal sustainability must be weighed against the need for public pensions to cover and provide income security to all older persons. In countries with comprehensive social protection systems, the challenge is to maintain the poverty- and inequality-reducing effects of pensions. In countries without them, the focus must be on extending pension coverage, providing adequate benefits and creating fiscal space to finance public pension systems and meet target 1.3 of the SDGs.[43] Early action on these fronts would

43 The aim of target 1.3 is "to implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable".

allow a gradual phase-in that may spread costs across generations.

A. A FISCALLY SUSTAINABLE FOCUS ON EQUITY AND ECONOMIC SECURITY

In countries with broad pension coverage, replacement rates are higher for low-income than for high-income earners. In the European Union, replacement rates even increased for the bottom income quintile from 2007 to 2015 but declined from 2015 to 2018 (European Commission, 2021b).

Beyond concrete measures to safeguard the income security of low-income earners, supporting the diverse needs and preferences of workers regarding retirement age is also key

Reforms to ensure sustainability that are applied across the board can negatively affect the income security of low-income earners. Take increases in retirement age, for instance. As life expectancy grows and people's health improves, they can remain productive until later in life. Considering that low-income earners have a lower life expectancy than high-income earners, however, indexing the retirement age to average life expectancy has a regressive effect. Workers with an expectation of shorter lives lose a larger proportion of their projected lifetime income from pensions than those who are expected to live longer. If gains in longevity benefit higher-income earners the most, as they have in many countries in recent decades, this regressive effect will increase over time. Yet very few pension schemes take inequalities in life expectancy into account (OECD, 2017; Diakite and Devolder, 2021; Ayuso, Bravo and Holzmann, 2020). In addition, low-income workers also have fewer and more precarious employment prospects, particularly at older ages.

Maintaining or increasing the inequality-reducing role of pensions while raising the retirement age calls for granting low-income workers higher accrual rates, lowering minimum contribution thresholds, crediting periods of unemployment, improving the portability of pensions and, above all, strengthening efforts to guarantee decent work, including decent wages. More frequent or generous adjustments of retirement incomes to the cost of living (or indexation) for low-income workers would also help ensure that those in need do not face economic insecurity as they grow older.

Beyond concrete measures to safeguard the income security of low-income earners, supporting the diverse needs and preferences of workers regarding retirement age is also key. Most countries already allow workers to continue working beyond retirement age, with some earnings limits. Early retirement is strongly restricted in many countries, although several have expanded early retirement options since 2020 (OECD, 2021b). Very few countries allow partial retirement, where employees continue working on a reduced schedule while starting to draw a portion of their pension (OECD, 2017). Taking into consideration the concerns of workers with physically demanding jobs and those with health issues, countries could consider more phased retirement arrangements.

Regarding the move towards defined contribution pension schemes, many of these rely on private savings accounts and thus shift investment risks from the State to individuals. They are less redistributive than defined benefit programmes and therefore magnify labour market inequalities, particularly since individuals with lower levels of income and education have less financial knowledge and access to financial services than their more educated counterparts. Implementation depends on broadly available and accessible financial services and facilities, which many developing countries currently lack.

Very few countries rely exclusively on defined contribution schemes today (ILO, 2021c). As a complement to defined benefit programmes, they can improve the adequacy of pension benefits. But some do not meet the core principles set out in international social security standards.[44] Specifically, defined contribution schemes based on individual savings accounts have suffered severe losses during recent recessions, therefore failing to ensure predictable and adequate benefits until death, as legal entitlements.

The fact that future generations of older persons may be more unequal and economically insecure than today's, absent major policy correctives, must be factored into pension systems reforms. Very generous pensions may not be sustainable. At the same time, reforms that weaken the redistributive power of pensions will jeopardize the well-being of a growing number of older persons. Such reforms may further undermine State capacity to support pension systems, particularly if they are perceived to be ineffective and unfair.

The fact that future generations of older persons may be more unequal and economically insecure than today's, absent major policy correctives, must be factored into pension systems reforms

B. *EXPANDING PENSION COVERAGE AND ADEQUACY*

Despite efforts to extend pension coverage, access to contributory pensions is usually limited to waged workers in the formal sector. This presents a challenge to developing countries with large informal sectors. But gaps in coverage and insufficient benefits are not only a concern for developing countries. Workers under non-standard contracts in all countries face some of the same challenges. And around the world, women's persistent disadvantages in the labour market and their disproportionate burden of unpaid care limit their access to pensions and other social protection programmes.

There is no one-size-fits-all process to increase pension coverage. But action on three fronts can help. The first is to encourage pension savings. The second is to introduce and expand tax-funded pension schemes, recognizing that these first and second measures are not mutually exclusive. Third, the labour mar-

44 See the ILO Social Security (Minimum Standards) Convention (no. 102) or the ILO Convention on Invalidity, Old-age and Survivors' Benefits (no. 128). For further analysis, see also ILO 2011 and 2021c.

ket policies discussed earlier alongside efforts to include non-wage workers in contributory schemes and improve financial literacy will go a long way in helping workers and their families save and contribute to social protection systems.

Tax-funded schemes have helped expand effective coverage around the world and ensure that all older persons have at least a basic level of income security, particularly when they are universal. Chile legislated a large increase in both the basic (solidarity) pension and the publicly financed pension supplement in 2019. As a result, the future pension of full-career, low-wage earners will increase by one third (OECD, 2021b). In Latvia, both the minimum pension and non-contributory old-age benefits were raised by 25 per cent in 2020, albeit from a low level. Mexico introduced a tax-based basic pension in 2019, available to all citizens from age 65 since July 2021 (ibid.).

Many tax-funded schemes are means tested and thereby restricted to older people with low income, often those living in poverty and who do not pay into contributory systems. Means-tested tax-funded pensions leave older persons who are neither in poverty nor covered by contributory schemes (the so-called "missing middle") without a minimum income guarantee. In developing countries, this "missing middle" mainly comprises workers in informal employment.

Beyond coverage gaps, tax-financed pensions are often insufficient to provide income security to their beneficiaries. The ILO (2015) estimates, for instance, that from 2010 to 2014, beneficiaries received less than $1.25 a day from tax-financed pensions in more than one quarter of developing countries with available data. While these schemes are typically designed as basic-income transfers meant to complement, rather than replace, contributory pensions, they have some impact on poverty alleviation among older persons (United Nations, 2018a).

Reforms to the design and implementation of pension systems may be important. But improving the coverage and adequacy of pension benefits in the end rests on expanding decent work opportunities and strengthening the institutions of work. Policies to level the playing field for women in the labour market, promote transitions from informal to formal employment, provide adequate wages and other measures will go a long way towards achieving target 1.3 of the SDGs.

There is also space for opening decent work opportunities for older persons and eliminating barriers to their participation. Having the option to retire gradually would make staying in the labour market more attractive to many older persons. Tackling bias and discrimination against older workers would also expand job options and improve employment conditions. The UN Global Campaign to Combat Ageism recommends three strategies to combat ageism: policies and laws to reduce or eliminate it, educational interventions and increasing intergenerational contact (WHO, 2021a). Much more can also be done to adapt jobs and workplaces to people with disabilities, including older persons.

3. THE POTENTIAL OF PROGRESSIVE TAXATION

In countries without comprehensive social protection systems, a critical factor for achieving SDG target 1.3 is sustainable funding. Increased public funding can come either from reallocating existing resources or generating additional revenue.

In most countries, there is scope for mobilizing public revenue without imposing a heavier tax burden on low-income workers or the middle class (UN IATF, 2022). For the most part, the effect of taxes and social protection systems on poverty and inequality depends on how progressive taxes are. Income and property taxes are usually progressive while indirect taxes, such as consumption taxes, are generally regressive; that is, they take a larger percentage of income from low-income households than from high-income ones.

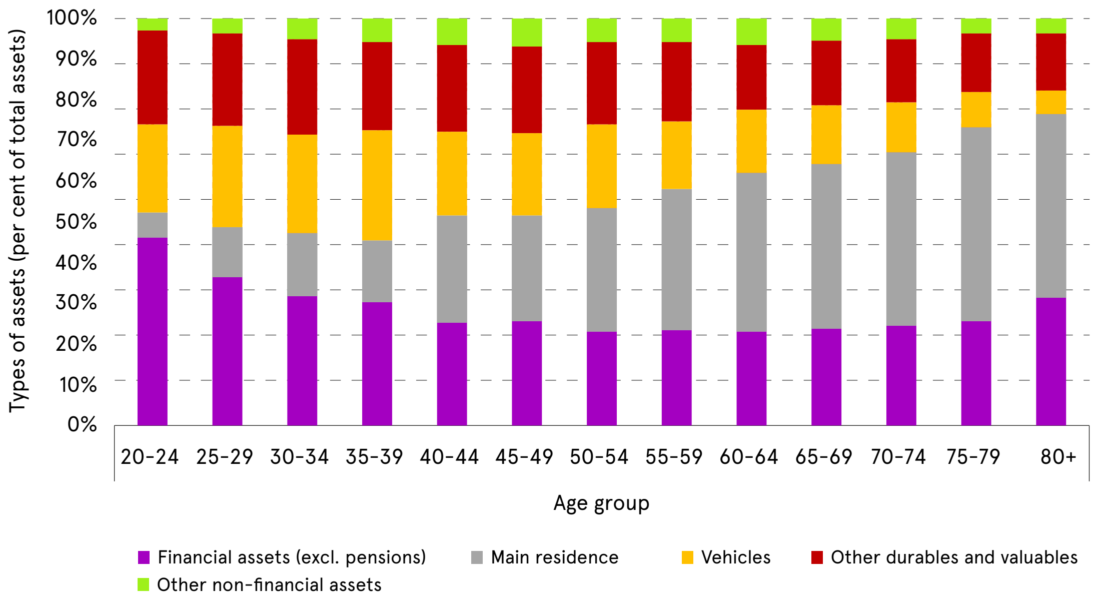
In developed countries, top income tax rates could be higher, as they were in the 1980s, with little impact on economic growth (IMF, 2017). Strengthening taxation on wealth and property could generate new revenue if countries devote sufficient resources to enforcement, given the opportunities for avoidance.

In developing countries, reducing levels of informality will go a long way in expanding tax bases, as will tackling capital flight and illicit financial flows and enacting reforms to strengthen tax administration, as advocated in the Addis Ababa Action Agenda. Improving compliance and preventing tax evasion can increase revenue without necessarily hurting people in poverty. Raising minimum income tax thresholds and reducing the burden of indirect taxation can make tax systems more progressive. Lower tax rates on basic goods, such as staple foods, may be warranted. That said, given the increasingly globalized nature of trade and business, there are limits to what countries can achieve on their own. Recent multilateral initiatives aimed at improving coherence and transparency in addressing tax avoidance are steps in the right direction.

Ultimately, progressive fiscal policies and a well-functioning tax system can encourage a virtuous cycle of social solidarity, where comprehensive social protection systems, including pension systems, strengthen public support for redistribution. In contrast, inadequate benefits and regressive reforms jeopardize progress towards reducing old-age poverty and the overall well-being of future cohorts of older people. Such reforms may undermine trust in Governments and the willingness of citizens to pay taxes and contribute to pension schemes during their working lives. They may further erode the capacity of social protection schemes to ensure income security.

ANNEX 1. ASSET OWNERSHIP AMONG PEOPLE LIVING IN RELATIVE POVERTY

Figure 4.1.1 Types of assets owned by people living in relative poverty by age in eight developed countries, 2019 (or latest year with data)



Source: Calculations based on data from the Luxembourg Wealth Study Database (multiple countries; surveys conducted between 2010 and 2020). Available at https://www.lisdatacenter.org/our-data/lws-database/.

Note: Estimates are calculated using harmonized survey data on wealth reported at the household level for eight developed countries (Australia, Canada, Finland, Germany, Italy, Norway, the United Kingdom and the United States). Households in relative poverty are those living under 50 per cent of the median income of the total population.

ANNEX 2. THE LIKELIHOOD OF FUNCTIONAL DISABILITY BASED ON WORK HISTORY

Figure 4.1.2 Logistic regression predicting functional disability based on work history, by sex, adults aged 50 and older in Europe, 2018

	Male		Female	
	ODDS RATIO	95% CONFIDENCE INTERVAL	ODDS RATIO	95% CONFIDENCE INTERVAL
Main job physically demanding (ref=no)				
Yes	1.35 ***	(1.19,1.54)	1.41 ***	(1.26,1.58)
Individual covariates				
Age	1.05 ***	(1.04,1.05)	1.06 ***	(1.06,1.07)
Rural	0.94	(0.84,1.05)	0.95	(0.85,1.06)
Education (ref=tertiary)				
1.Less than upper secondary	2.05 ***	(1.69,2.49)	1.55 ***	(1.31,1.84)
2.Upper secondary and vocational training	1.49 ***	(1.26,1.78)	1.38 ***	(1.17,1.62)
Country covariates (ref=Northern Europe)				
Central Europe	1.61 ***	(1.38,1.86)	1.52 ***	(1.32,1.76)
Southern Europe	0.91	(0.76,1.09)	1.20 *	(1.01,1.43)
Eastern Europe	1.86 ***	(1.60,2.15)	1.87 ***	(1.63,2.14)
N	19283		22535	
r2_p	0.049		0.071	

Source: SHARE, Gateway to Global Aging Data. Available at https://g2aging.org/.

Notes: Estimates are age adjusted and weighted to correct for sample design. * p < .05, ** p < .01, *** p < .001.

CHAPTER 5

A CRISIS OF CARE

KEY MESSAGES

- **Demand for long-term care is rising due to population ageing and changes in the living arrangements of older persons. The COVID-19 crisis exposed weaknesses in long-term care, yet care and support systems continue to receive insufficient policy attention.**

- **The absence of accessible and equitable long-term care services takes a heavy toll on older persons, their families and whole societies. Women bear the brunt of deficiencies as they comprise the majority of both care recipients and paid and unpaid caregivers.**

- **Rethinking how to provide long-term care will benefit today's older persons and those who care for them as well as future cohorts of older persons. Countries should pursue a more equitable, person-centred approach involving governments, businesses, civil society, communities and households, and addressing needs in paid, formal forms of care as well as unpaid, informal ones.**

A CARE CRISIS IN NUMBERS

1 in 3
the number of women 65 and over that need long-term care in the EU.

and **1 in 5 men**

13.6 MILLION
the estimated deficit of long-term care workers.

80%
of all long-term care in Europe is provided by informal caregivers.

9 in 10
the number of formal long-term care workers that are women in OECD countries.

1.5%
the average percentage of GDP in OECD countries spent on long-term care in 2019; down from 1.7 per cent in 2017 despite growing demand.

Rapidly ageing populations have increasingly complex health care as well as care and support needs. Traditionally, for better or worse, co-habiting extended families have met the care needs of older persons. Living arrangements for families and older individuals, across developed and developing countries, have changed in recent decades, however. These shifts, combined with ageing in general, have heightened demand for different forms of care. For societies and individuals, the implications of increased demand depend significantly on what type of care is being provided and by whom. Women are the main stakeholders in long-term care, comprising the majority of both care recipients and paid and unpaid caregivers.

The mechanisms of care and support for older populations are increasingly important policy concerns. Yet across developing and developed countries, long-term care has suffered a lack of concerted policy attention. Government spending on quality long-term care has rarely been sufficient to cover mounting demand. Paid care work is notable for its low wages and difficult working conditions, leading to poor outcomes for recipients and an insufficient supply of well-trained caregivers.

A lack of regulation of service provision has also undermined quality.

This chapter describes how rising needs for long-term care, combined with changes in living arrangements, impact families and societies, particularly women. It shows how disparities in both who provides care and the primary sources of care available to older adults affect well-being. Without accessible and equitable formal care services, older adults confront unmet health and care needs that prevent them from realizing dignity and inclusion in their community. Families, particularly women, and health-care systems struggle to keep up. During the COVID-19 crisis, existing weaknesses in both paid and unpaid and formal and informal long-term care systems surged to the surface, with devastating impacts. To solve the crisis of care, the chapter proposes different strategies for meeting the long-term care needs of older adults more fairly and sustainably.

A.

AS POPULATIONS AGE, CARE HAS NOT KEPT UP

1. CARE NEEDS ARE GROWING

People in almost all countries are living longer. Globally, babies born in 2022 are expected to reach 72.3 years on average, 25 years longer than those born in 1950.[45] Living more years does not necessarily mean enjoying a better quality of life, however, especially at older ages. In fact, living longer is associated with increased non-communicable disease and disability. Older persons often experience hearing loss, cataracts and refractive errors, back and neck pain and osteoarthritis, chronic obstructive pulmonary disease and diabetes, and they are at greater

45 United Nations, *World Population Prospects 2019*. Available at https://population.un.org/wpp/ (accessed on 3 March 2022).

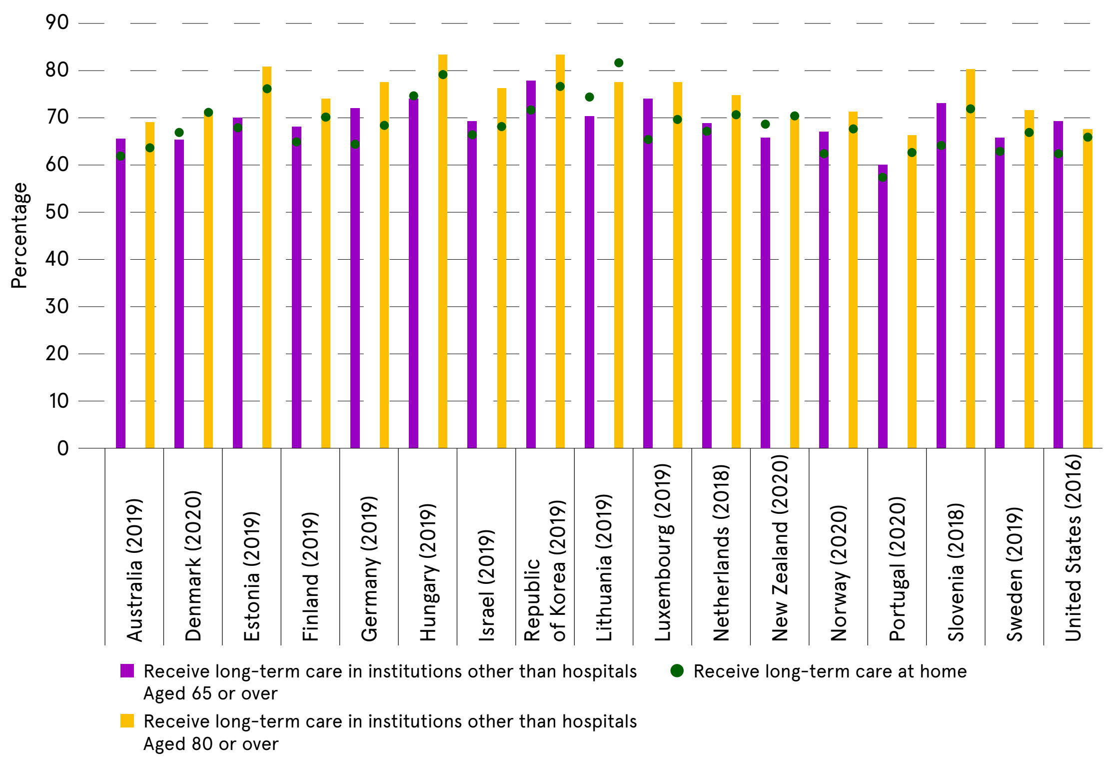
Because they live longer and spend a relatively longer period of their lives in poor health, older women are more likely to need long-term care services compared with older men

risk of depression and dementia. As people age, they are also more likely to experience several conditions at the same time.

Biological changes and increasing needs for support as people age have different implications for individuals and societies. At the individual level, people do not follow the same path to older ages. While many older persons enjoy relatively good health into their later years, others may experience chronic diseases and other health risks.

For societies, an upward shift in the population age distribution means that shares of older persons are expected to grow in coming decades. In Europe and Northern America, population ageing is already well advanced. In Eastern and South-Eastern Asia, populations are ageing rapidly. Although individual older people may not require additional care or support, societies as a whole still face rapidly increasing demand for care services for older persons. In Japan, for instance, the number of older persons in need of care is

Figure 5.1 **Share of women among long-term care recipients in institutions other than hospitals and at home, aged 65 or above and aged 80 or above, selected OECD countries**



Source: OECD Health Statistics 2021. Available at https://stats.oecd.org/ (accessed on 9 March 2022).

Note: Countries are selected based on data availability.

projected to rise from 8.3 per cent of the total population in 2020 to 14.4 per cent in 2065 (Marukawa, 2022).

Because they live longer and spend a relatively longer period of their lives in poor health, older women are more likely to need long-term care services compared with older men. Women are also usually frailer and have worse health at the end of life than men (Hägg and Jylhävä, 2021). As a result, they tend to account for a higher proportion of care recipients at home and in institutions (figure 5.1). For instance, in the European Union, at ages 65 or over, 33 per cent of women needed long-term care compared with 19 per cent of men (European Commission, 2021c). Moreover, greater female longevity means that a larger proportion of older women are widows and lack potential support from a spouse.

2. CARE NEEDS ARE CHANGING

High-quality care and support systems mean that older people can live more independently, with dignity and choice, personal safety and the ability to participate in their communities and society. In return, societies realize the rights and full potential of their ageing populations. As older people with different health conditions may have different needs, care and support systems should cover a wide spectrum of activities, including primary, acute and end-of-life care, and assistance with meals, housekeeping, bathing and other activities of daily living.

As populations age, needs evolve. Older persons may have specific care or health-care requirements, including those that stem from having two or more long-term conditions. Some individuals may start to have limitations that prevent them from carrying out daily routines, such as getting out of bed, taking baths or showers, using the toilet, dressing and preparing meals. Functional limitations may not immediately require care services for extended periods but may call for assistance with some activities of daily living. In the United States, for instance, about one third of people aged 65 or older report functional limitations of some kind, a share that rises to two thirds among people aged 85 or older (United States, Congressional Budget Office, 2013).

Functional limitations can also increase demand for more extended services over time. For example, decreased mobility and falls among older persons can result in needs for hip and knee replacements and extended recovery, increasing demand for palliative, rehabilitation and ongoing care services (Pacific Prime, 2013).

Ageing amplifies the risks of cognitive impairments; 50 million people worldwide now live with dementia (Casafont and others, 2020). Still with no cure, dementia is linked to ageing and most commonly manifests as Alzheimer’s disease. As dementia progresses, it results in increasing cognitive, psychosocial and eventually physical disabilities requiring enhanced support.

For people who grow older with chronic or disabling conditions, the focus may shift from finding a cure to providing quality of life and relief for disease-related symptoms as well as ensuring dignity and comfort during an individual’s final days. End-of-life care, which includes palliative and hospice care, is expected to see a surge in demand yet countries remain largely unprepared for it (box 5.1).

BOX 5.1

ACUTE END-OF-LIFE VULNERABILITIES REQUIRE SPECIALIZED CARE

Countries are particularly unprepared for an expected jump in demand for end-of-life care as populations age and the burden of non-communicable diseases rises. Only an estimated 1 in 10 people needing palliative care worldwide is receiving it, even as demand is expected to double by 2060 (WHO, 2022). This type of care requires specialized skills, services and infrastructure, at a time in human life when vulnerabilities are acute. Even in countries with universal health coverage, however, the quality of end-of-life care varies dramatically. Shortfalls add to the burdens of those who are already experiencing severe pain and discomfort (Sallnow and others, 2022).

Because end-of-life care needs are complex, common care-related issues, such as insufficient training, high staff turnover, inadequate support for carers, a lack of access to medical or specialist support and high staff workloads, become especially concerning. Research on undergraduate nursing students, for instance, suggested they feel largely unprepared by their formal training to provide end-of-life care to dying patients and their families (Gillan, van der Riet and Jeong, 2014). With people dying further into old age, when dementia, multimorbidity and frailty are more common, and spousal, social and other forms of support are less available, end-of-life care provision requires urgent policy attention.

Countries could pursue several directions to improve and expand access to end-of-life care. Critical factors encompass adequate funding for formal end-of-life care infrastructure, training and education for care providers, and the availability and appropriate use of essential medicines, including controlled medicines for pain and symptom management. Families, community volunteers and other individuals acting as end-of-life caregivers need much more financial and logistical support, especially under the supervision of trained professionals. This would help to expand the opportunity to die at home, as many people wish. The rapid spread of COVID-19 in long-term and end-of-life care facilities highlighted the risks of concentrating those who are most vulnerable in one place while also robbing many older persons of the chance to die among loved ones.

B.

PROVIDING BETTER CARE: DETERMINANTS, STATUS AND CHALLENGES

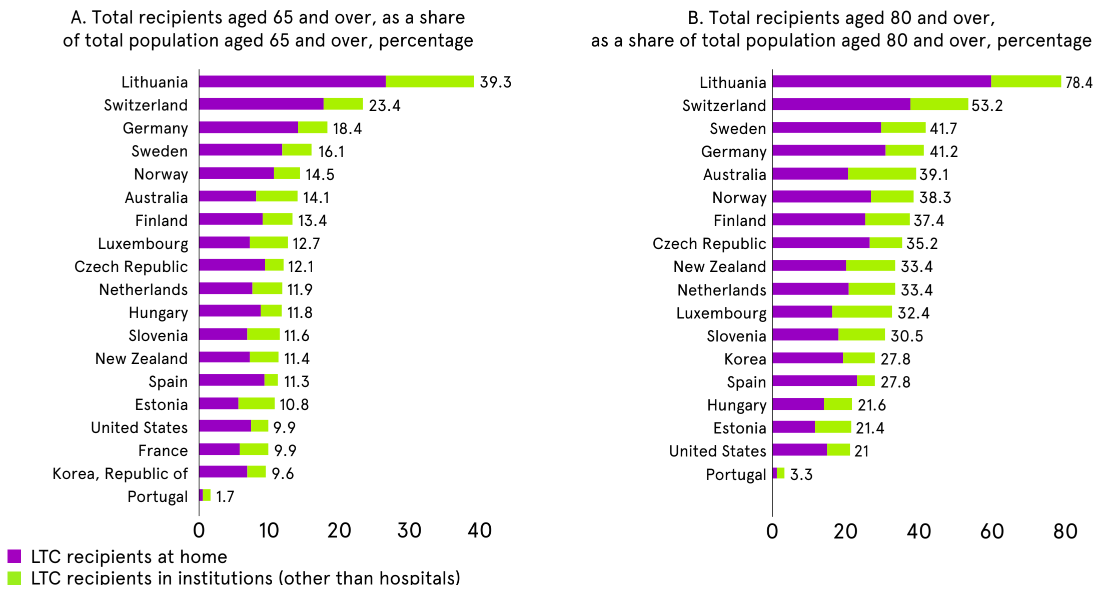
1. AGEING IN THE RIGHT PLACE

Rising care needs for older persons calls for providing quality care services. Growing old at home or "ageing in place" is a central desire for most older women and men, all over the world. A recent survey in the United States showed that nearly 80 per cent of adults aged 50 and over want to remain in their homes over the longer term, a proportion that has been consistent for more than a decade (Davis, 2021). "Ageing in place" refers to the ability to live in one's own home and community safely, independently and comfortably, regardless of age, income or capacity. "Ageing in the right place" extends the concept to the ability to live in the place most suited to a person's needs and preferences, which may or may not be one's own home. It highlights that the "right place" must satisfy the social, economic, health and infrastructure needs of older women and men, and offer adequate services, safety and affordability (Golant, 2015). Figure 5.2 shows that the share of people receiving long-term care at home is much greater than in institutions, for those aged 65 or above and aged 80 or above.

Multiple factors influence older persons' choices about where to receive care services. First, care options for older people and their families vary significantly by country and personal circumstances. Service availability and accessibility, cultural beliefs (such as the notion that the family is best placed to take care of its older members) and the financial situation of older persons and their families all affect care choices. Where older persons receive long-term care may also depend on their disease profile. Institutionalized care is typically reserved for frailer individuals who have difficulty managing on their own or need specialized medical services. Care services also have inextricable links with the living arrangements of older persons, as discussed below.

Figure 5.2

Long-term care recipients at home and in institutions other than hospitals, selected countries, latest available year



Source: OECD Health Statistics 2021. Available at https://stats.oecd.org/ (accessed on 9 March 2022).

Note: The numbers next to each bar indicate the share of older persons receiving long-term care in each age group. The share is the sum of those receiving long-term care at home and in institutions other than hospitals. Countries were selected based on data availability.

2. LIVING ARRANGEMENTS DEFINE CARE PROVISION

Living arrangements strongly determine the care services that older people receive. In many societies, co-residence with adult children is a common support mechanism. Adult children may be expected to remain with and support their ageing parents as part of "lifetime reciprocity" or "filial piety". Co-residence is also a way for parents to support adult children who have never left the parental home or have returned to cope with economic hardship or adverse life events. An older person may also move into the household of an adult child to help care for grandchildren or following the death of a spouse. Such living arrangements vary. According to the most recent global estimates, older persons live in households that range in size from 2 to 12 persons, on average (United Nations, 2019c).

In more developed countries, such as in Western Europe and the United States, intergenerational co-residence has declined dramatically. Most older persons live either in single-person households or in households consisting of a couple only or a couple and their unmarried children. In 2019, the average size of such households was 1.9 persons in France, Switzerland and the United Kingdom and 2.1 in the United States. In countries with more older persons living in small households, especially many developed countries, people tend to marry later, have fewer children and have them later in life. While older people may choose to live close to their children or relatives to receive care and support when needed, as in some European countries, social programmes typically offer financial assistance or health-care benefits to retired adults. This can make it more affordable and convenient for older people to stay in their own homes and to live by themselves or only with a spouse (United Nations, 2019c, 2020e).

Intergenerational co-residence has declined dramatically in developed countries

In most developing countries, older persons are most likely to live with a child or extended family and to receive care and support within the family. Higher fertility in the recent past provides more opportunity for older persons to co-reside with their children and grandchildren, potentially including one or more children in the same household. Countries with the highest prevalence of this type of co-residence are in Africa, Asia and Latin America. In Africa, for instance, all countries (except Burundi, Egypt and São Tomé and Príncipe) have at least half of older persons living in households with extended family members (United Nations, 2019c, 2020e).

Urbanization can affect the living arrangements of older persons and the care services they receive. Cities usually offer a wide range of choices for housing and living configurations tailored to individual health, social and infrastructure needs and the economic means of older persons. Available options range from ageing in one's own place to retirement homes, senior homes, residential care homes, continuing care homes, and assisted living communities and nursing homes that provide 24/7 care and support.[46] Additional options are residential communities for older persons that typically cater to the wealthy with amenities such as club houses and golf courses, fitness centres and tennis courts. Fewer options exist in rapidly growing cities, especially in developing countries, where poor and disadvantaged older persons often live with extended family in overcrowded homes with minimal financial resources.

While some rural areas can be places of great natural beauty and offer a wide range of recreational activities for active ageing, finding health-care services can be a challenge for older persons, more so in remote areas. Outpatient and hospital-provided specialty care may not be available. Attracting and retaining formal and informal caregivers may be an ongoing struggle. Well-lit and safe walkways away from traffic; accessible, reliable and affordable public transportation; adequate housing; public and commercial services and opportunities for social participation are often lacking.

3. DEMAND FOR CARE OUTSTRIPS THE SUPPLY OF CAREGIVERS

Long-term care is a major component of care services for older persons. It refers to a broad range of personal, social and medical services over an extended period to "ensure that people with or at risk of a significant ongoing loss of intrinsic capacity can maintain a level of functional ability consistent with their basic rights,

46 Residential care homes provide assistance with meals and the activities of daily living. Continuing care homes offer nursing services as needed, allow residents to transit into facilities on the same premises that provide more assistance if and as needed, and can accommodate couples with different care needs.

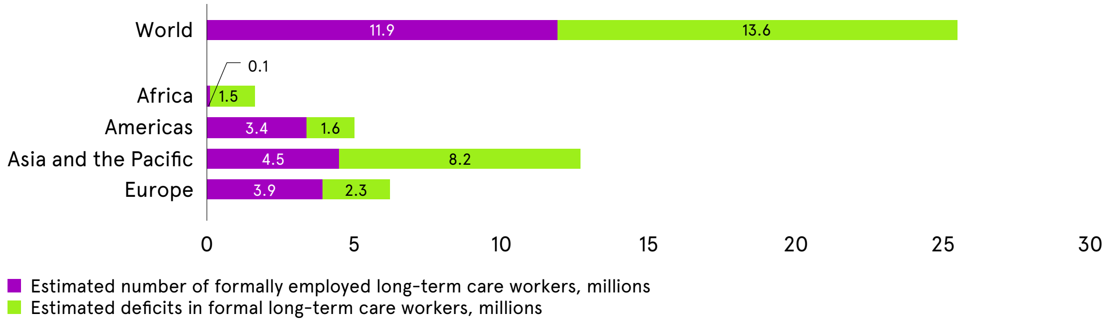
fundamental freedoms and human dignity" (WHO, 2017). This includes care provided at home, in the community or in institutions.

Long-term caregivers can be employed in the formal or informal economy, and their services may be paid or unpaid. A formal caregiver delivers professional and usually paid services to an individual or group of individuals. Informal caregivers provide care to those who need it, generally based on an existing relationship, such as with a family member, friend or neighbour (AIHW, 2021). They are typically unpaid but not all. In some cases, people without necessary travel documents, training or credentials move to other countries to provide care services, meaning they can only work in the informal sector and are usually poorly remunerated. That said, the distinctions between formal and informal, paid and unpaid care are blurring. Some European countries, for instance, provide cash payments directly to informal caregivers to incentivize and support them (Zigante, 2018).

Amid rising demand for long-term care, growth in the number of caregivers is not keeping pace. As of 2015, the world was experiencing a shortage of about 13.6 million formal care workers, according to a study of 46 countries with 80 per cent of the world's population.[47] The shortage was largest in Asia and the Pacific (8.2 million workers) and smallest in Africa and the Americas (1.5 million and 1.6 million workers, respectively).[48] In Europe, the shortage amounted to 2.3 million workers (figure 5.3). Such deficits mean that half the older population globally does not have access to quality formal long-term care.[49]

Figure 5.3

Estimated numbers and deficits in formal long-term care workers, the world and by region, 2015



Source: Adapted from Scheil-Adlung (2015).

47 An ILO study estimated the shortfall in the numbers of long-term care workers based on a relative threshold of 4.2 formal long-term care workers per 100 persons aged 65 or above in 2015. The threshold derives from the population-weighted median value of formal long-term care workers per 100 persons aged 65 or above in a group of 18 selected countries in the Americas, Asia and the Pacific and Europe. Given scarce data on long-term care workers, the study followed several assumptions. For countries where data were not available in Africa, the number of formal care workers was estimated at 0.4 workers per 100 persons aged 65 or above. The related values for the Americas, Asia and the Pacific, and Europe were 1.69, 2.34 and 2.9. They were estimated based on a population-weighted average number of formal long-term care workers in countries with available data in respective regions (Scheil-Adlung, 2015).

48 The Americas include both North America and Latin American and the Caribbean. The ILO's study does not provide disaggregated estimates within the Americas.

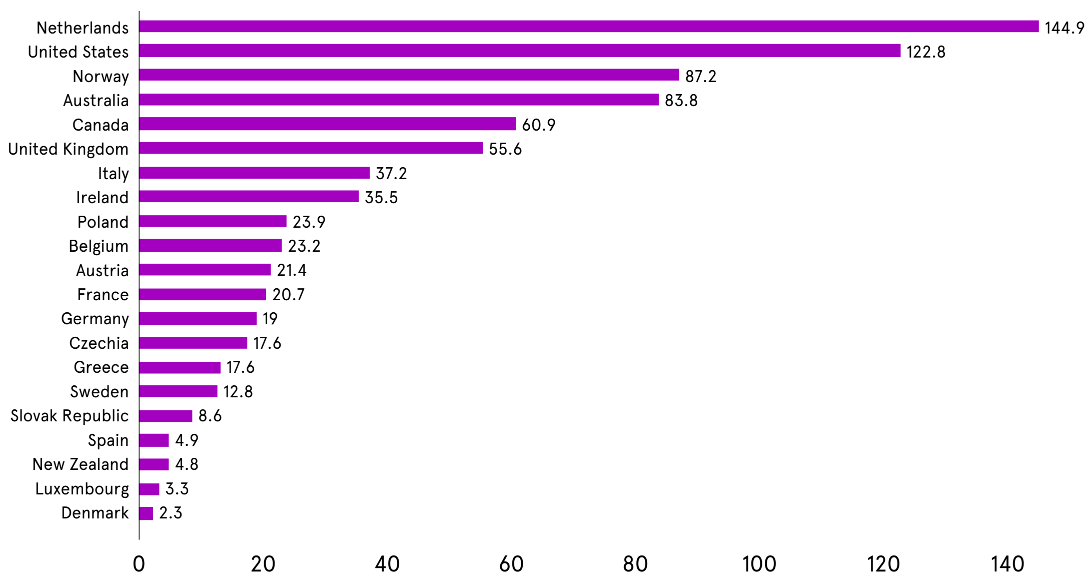
49 Scheil-Adlung (2015) set a threshold for the basic provision of care services at 4.2 workers per 100 persons aged 65 or above, which is the median population-weighted number of formal long-term care workers in 18 selected countries in the Americas, Asia and the Pacific and Europe. If a country does not meet 4.2 care workers per 100 persons aged 65 or above, its people do not have access to quality formal long-term care provision.

The paucity of formal long-term care provision is expected to continue in coming decades. In the United States, an estimated 3.5 million additional workers or more will be needed to provide long-term care to older people by 2030 (Spetz and others, 2015). The number of formal jobs for these workers is projected to increase by only 1 million over the same period, however. In Japan, the Government (2015) estimates that the demand-supply gap in 2025 will be about 380,000 care workers, especially in metropolitan areas. By 2030, Germany will need additional care workers equivalent to around 263,000 to 500,000 full-time workers (Gerlinger, 2018).

Foreign-born migrants have filled care gaps in many countries. While comprehensive data on the migrant status of care workers are very limited, piecemeal evidence suggests the proportion of foreign-born care workers in high-income countries is great, having grown sharply in recent years amid rising demands for care and the unwillingness of native-born populations to take up what they see as low-status and poorly paid work (Sowa-Kofta and others, 2019). In Italy, an estimated 73 per cent of the paid care workforce in 2017 was foreign born (Bonizzoni, 2019). Some migrant care workers are undocumented or arrive in a country with a visitor or tourist visa. This strands them in the informal economy with limited protection and below official minimum wages.

Without enough formal caregivers, many countries, even rich ones, will continue to rely on informal care provision in private homes. In Europe, for instance, informal carers provide up to 80 per cent of all long-term care. They comprise from 10 per cent to as much as 25 per cent of the total population (Zigante, 2018). While the number of informal care workers varies significantly across countries (figure 5.4), most are unpaid family members, often also aged 65 or more.

Figure 5.4 **Number of informal long-term care workers per 100 persons aged 65 or over, 2014**



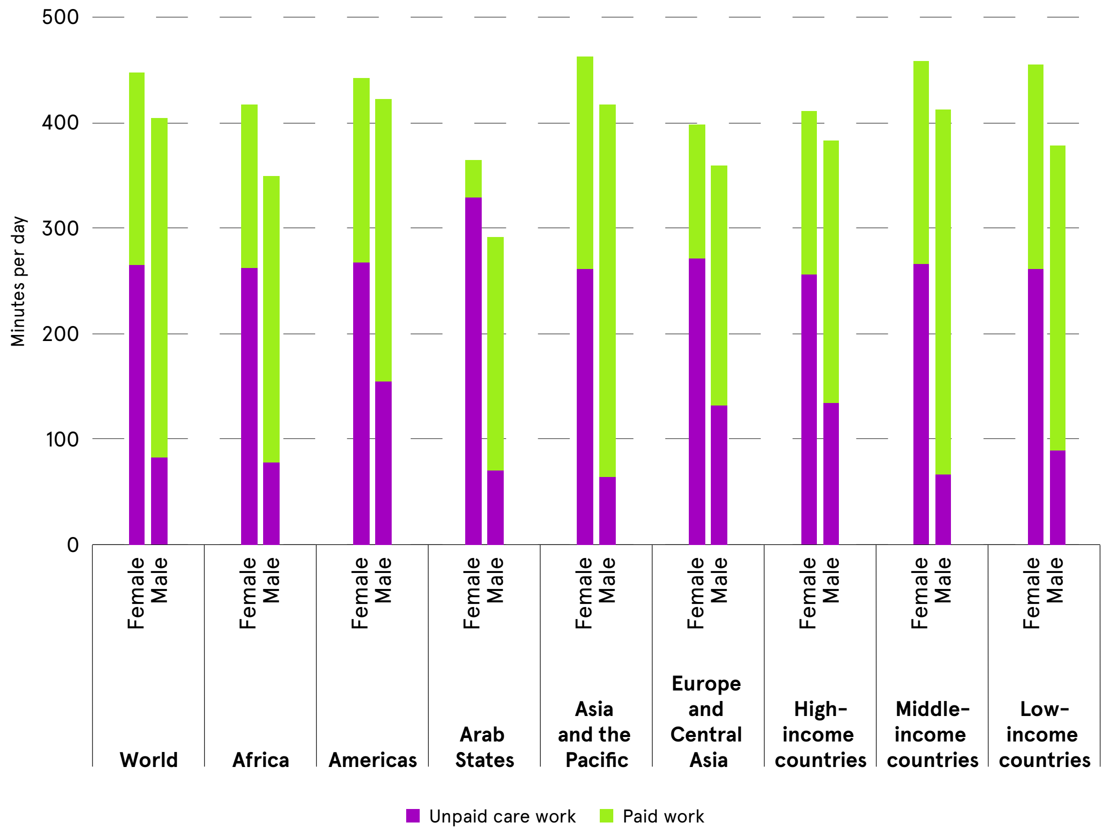
Source: Adapted from Scheil-Adlung (2015).

A. LONG-TERM CARE STILL DEPENDS ON WOMEN AND GIRLS

Most caregivers, paid and unpaid, in formal and informal sectors, are women. This phenomenon persists across regions and countries at different income levels. As figure 5.5 shows, women globally spend over 250 minutes per day on unpaid care work, on average, triple the time spent by men. In some cases, social and cultural expectations that women can and should care for older relatives and family members with disabilities may make women reluctant to seek support from formal or informal care services. Greater longevity also means that older women increasingly provide care to their parents and relatives in the oldest age categories.

Figure 5.5

The time that women and men spend on unpaid care work for all household members



Source: ILO, Models of care employment around the world. Available at https://www.ilo.org/global/about-the-ilo/multimedia/maps-and-charts/enhanced/WCMS_721442/lang--en/index.htm (accessed on 11 March 2022).

Among unpaid caregivers aged 50 years or more in OECD countries, 62 per cent are women. (OECD, 2020b).[50] Globally, women contribute 71 per cent of the estimated time devoted to unpaid care for people with dementia, a share that increases to 80 per cent in low-income countries (Alzheimer's Disease International, 2018).[51] Significant cross-country variation exists, however, even among high-income countries with similar markers of gender equality. For instance, the share of unpaid, informal carers aged 50 or more who were women ranged from 53 per cent in Austria to 76 per cent in Spain (OECD, 2021c). The amount of unpaid caregiving is also unevenly spread within and across households and families. Women in wealthier families are more likely than poorer women to pay a formal non-family caregiver to support the care needs of older relatives (Shah and others, 2012; Ozen, 2020). Inequalities also occur within families, with research from Mexico and Peru suggesting that unpaid care work is sometimes imposed on less powerful family members, such as daughters-in-law and younger granddaughters (Lloyd-Sherlock and others, 2017).

Women are also more likely to perform paid care work, in both the formal and informal economy. Nine in 10 long-term care workers in OECD countries are women. Even in countries considered some of the world's most gender equal, Denmark and Norway, women comprise 95 per cent and 92 per cent of paid care workers, respectively (OECD, 2021c). This is closely related to the low social status and poor pay of care work as well as cultural and social norms that women should carry out care-related activities, whether paid or unpaid (Addati and others, 2018). Paid care work is also unevenly distributed across the female workforce, often drawing women from ethnic minority backgrounds. In the United States, black and Hispanic women make up almost half of paid care workers despite being only 14 per cent of the total workforce (Gould, Sawo and Banerjee, 2021).

B. CARE WORK IS UNDERVALUED, UNDERPAID, UNDERTRAINED

One reason for the general undervaluing of care work is that so much of it takes place at home without pay, even when it entails complex medical and nursing tasks. The actual value of unpaid care work is massive, with 16.4 billion hours spent on it every day, equivalent to 2 billion people working eight hours per day with no remuneration (Scheil-Adlung, 2015). The Ministry of Economy in Argentina (2021) estimated that unpaid care and domestic work accounted for 15.9 per cent of GDP in 2020, making it arguably one of the largest sectors of the economy. In 2015, 15.9 million family members and friends provided 18.1 billion hours of unpaid care to people with Alzheimer's and other dementias, with an estimated economic value of $221.3 billion (Lord, 2016).

Paid care workers receive wages but often at marginal levels, coupled with little job

50 These estimates likely undercount the amount of total caregiving and perhaps the extent of the gender divide in care, due to data limitations. The only nationally representative surveys that ask these questions are retirement surveys of people 50 and older (HRS/SHARE) so younger women are not included.

51 This is consistent with global findings on unpaid care work more broadly – encompassing childcare and routine household work – where women dedicate, on average, over three times more hours than men to unpaid care work: 4 hours and 25 minutes per day for women against 1 hour and 23 minutes for men (Addati and others, 2018).

security, poor working conditions and few or no benefits. Across the 27 members of the European Union, non-residential long-term care workers make 80 per cent of the average national hourly wage (Gould, Sawo and Banerjee, 2021). Caregivers tend to be underpaid even compared to other occupations where workers have similar skills, education and experience; this is referred to as the care penalty (England, Budig and Folbre, 2002). Wage penalties in care work reflect the fact that most care workers are women (Addati and others, 2018).

People, especially women, from countries with few economic opportunities may migrate to higher-income countries and work in the care sector. Migrant caregivers are more likely to hold short-term temporary visas, however, limiting their rights in the host country and amplifying their vulnerability to exploitative practices (IOM, 2010). Shorter in-country work histories combined with lesser value given to education credentials obtained abroad also place migrant care workers at a disadvantage relative to native-born caregivers (Behtoui and others, 2020). Foreign-born care workers in China, Taiwan, Province of China, for instance, only receive 86 per cent of the minimum wage of their native-born peers.

Ethnic minorities and foreign-born migrant caregivers may experience discrimination at work from co-workers and recipients of care, often caused by cultural or language differences and reflected in the preferences of care-receivers for support from people who are "more like them" (IOM, 2010). At the same time, as caregivers migrate to higher-income countries, they leave behind a growing gap in care provision in their countries of origin.

Lack of adequate training commensurate with the needs of care recipients is a significant barrier to high-quality care services and higher wages. Long-term care services require a broad spectrum of professional skills, such as helping older persons with dressing, bathing and eating; assisting with mobility; providing physical and occupational therapeutics; and supporting them with nutrition and food preparation. Quality services also call for knowledge in geriatrics, aimed at the unique health needs of older people. Most caregivers, paid and unpaid, have insufficient training, however. In OECD countries, about 70 per cent of formal care workers are personal care workers with no mandatory standard or minimum qualifications; the remaining 30 per cent are nurses with a minimum number of years of training (OECD, 2020b). Family caregivers typically have little care literacy or understanding of the ageing process and how it evolves. They may not understand frailty or what caregiving entails, and not know where to turn for services and information or how to monitor and improve the quality of care (Lloyd-Sherlock, 2017).

Undervalued and unappreciated care work has spurred various physical and mental health issues among caregivers, negatively impacting the quality of care. In care facilities, paid workers with low levels of training often experience a high burden of stress as they care for older people with the most complex needs and challenging behaviours. Paid home care work often involves complicated, poorly defined roles and responsibilities within the family. Female care workers, in particular, may experience isolation, harassment and violence. All these factors feed the undesirability of long-term care jobs, high turnover and low morale

(United Nations, 2018b). Paid carer stress skyrocketed during the COVID-19 pandemic, especially early on when supplies of personal protective equipment, vaccinations and other protective measures were limited or non-existent (Smith and others, 2020).

Although providing care to a family member may have some positive aspects, including satisfaction in helping a loved one, unpaid family caregivers can experience mental stress and poor physical health, similar to paid workers. This may come, for example, from lifting and carrying older persons and a lack of rest and recuperation breaks (Qualls, 2021). Older caregivers may find tasks particularly challenging, such as those caring for a spouse. Family caregivers may experience multiple care-related burdens. For instance, when caring for older relatives, they may also tend to dependent children, manage household chores and finances, and engage in income-generating activities.

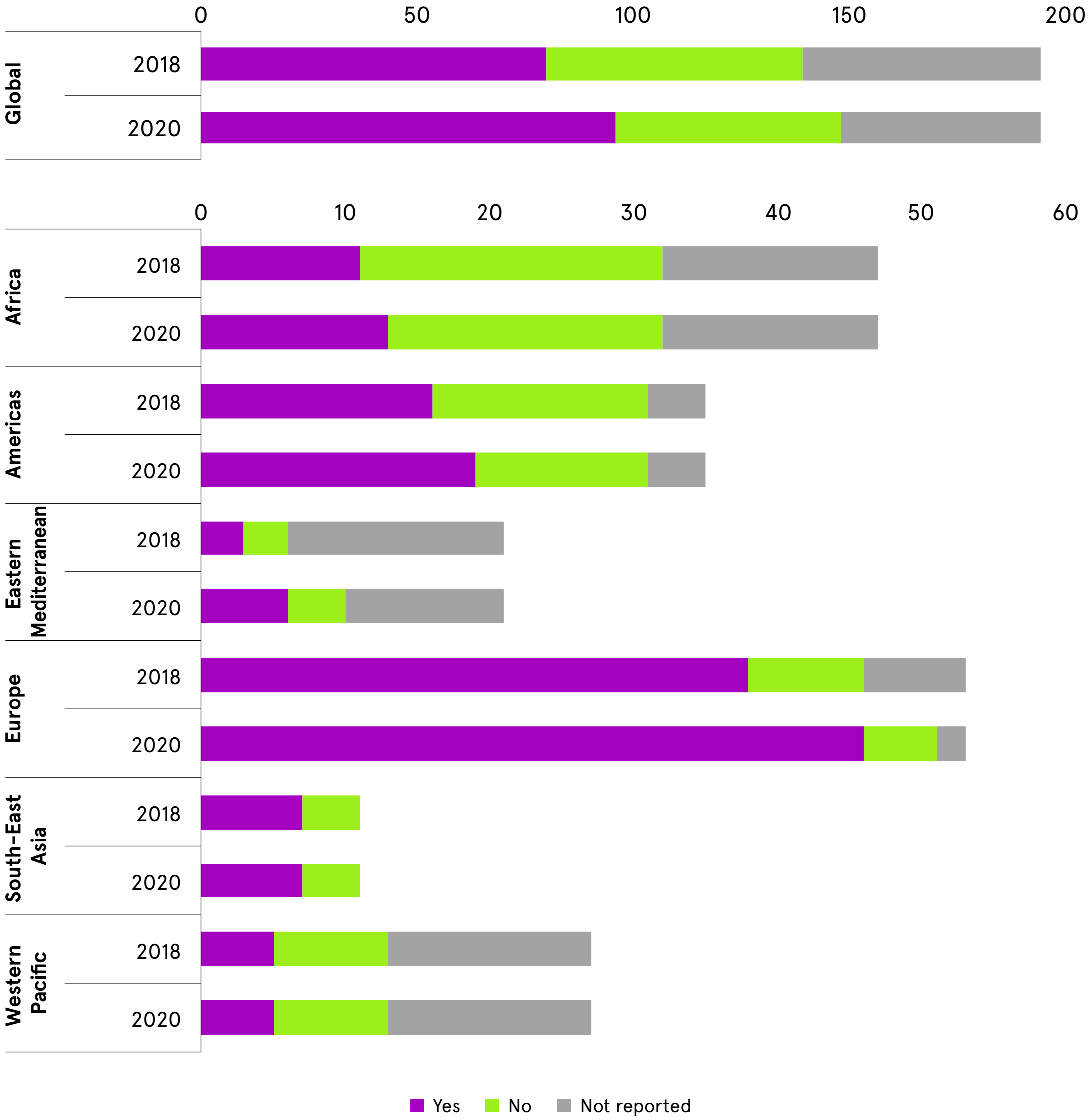
Paid leave entitlements as well as flexible working arrangements for family or other informal caregivers to provide care can protect the economic security and mental health of caregivers. Yet even among wealthier OECD countries, a third do not offer paid leave benefits to care for an ill family member (non-child). Among the two thirds that offer such benefits, there are varying amounts of pay and leave periods and qualifying "family members" are in most cases limited to partners/spouses, parents and sometimes siblings only (OECD, 2020b). Temporary respite care could provide relief for caregivers but is not available in all countries, especially in developing ones.

An individual's unpaid care responsibilities may limit their time for paid work. Many carers choose to remain in part-time jobs with lower salaries that are easier to combine with care responsibilities (Barslund and others, 2021). Family caregiving is also associated with additional expenditure, including purchasing medical supplies, assistive technologies and physical adaptations to homes, putting further financial pressure on family caregivers. Such strains can spark family tensions and caregiver-recipient confrontations, including elder abuse (Burnes and others, 2015; Fang, Yan and Lai, 2019).

Insufficient numbers of caregivers and low-quality services reflect a general lack of strategic policy planning much less meaningful consultations with older persons, the group most affected by such policies. Many countries across regions lack a specific policy, plan or strategic framework for long-term care (figure 5.6). The situation is particularly critical in South-Eastern Asia where population ageing is occurring rapidly. Missing or inadequate regulations on long-term care and their enforcement can impair quality, put prospects for decent work at risk for care workers, and increase the vulnerability of older persons to abuse. A lack of legislation on labour standards, for instance, has left care workers without guarantees of minimum daily and weekly hours and little employment protection or assistance in case of unemployment. This situation drives rising inequality in working conditions and therefore high turnover and low morale (Addati and others, 2018).

Even in countries that do have care provision policies, poor implementation has often left caregivers with benefit packages that do not meet minimum requirements. Older persons, especially the most vulnerable, are stranded amid fragmented, confusing and inadequate care options (Scheil-Adlung, 2015).

Figure 5.6 **Number of countries with a long-term care policy, plan, strategy or framework, standalone or integrated within an ageing and health plan**



Source: WHO, Maternal, Newborn, Child and Adolescent Health and Ageing data portal. Available at https://platform.who.int/data/maternal-newborn-child-adolescent-ageing/ageing-data/ageing---long-term-care-for-older-people (accessed on 1 March 2022).

Note: The "Americas" includes both Northern America and Latin America and the Caribbean.

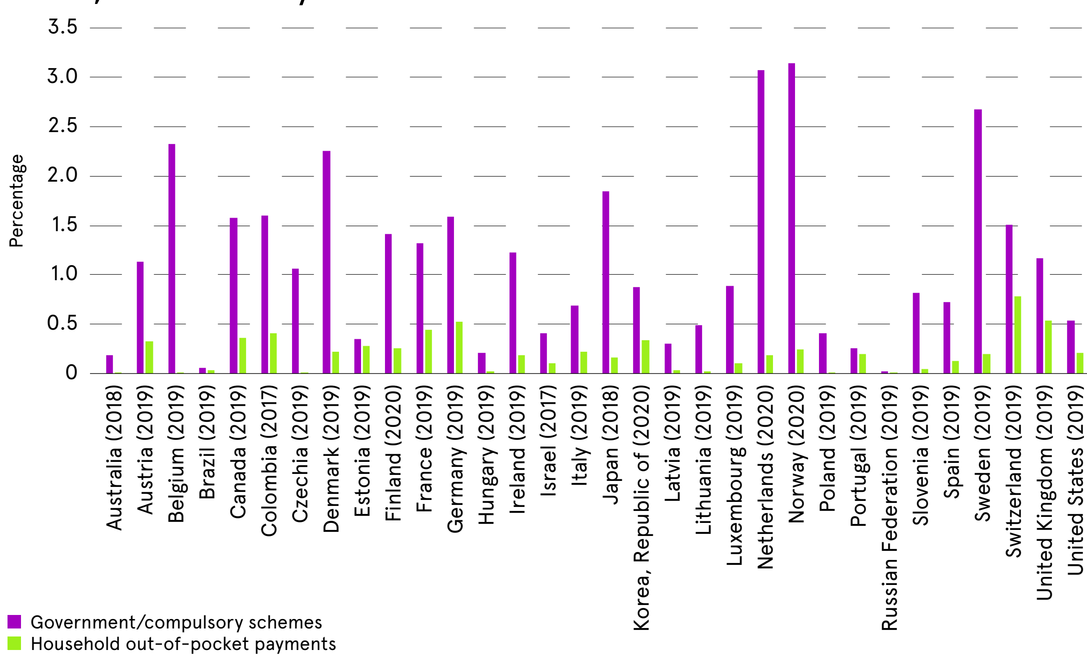
C. *NOT ENOUGH PUBLIC SPENDING, HIGH OUT-OF-POCKET COSTS*

As societies age, pressure grows to ensure the availability and affordability of long-term care services for all people in need. Spending must keep pace. Globally, however, average public expenditure on long-term care is low, remaining below 1 per cent of GDP from 2006 to 2010 (Scheil-Adlung, 2015). Little has changed over the past decade. Among OECD countries, average public expenditure for formal long-term care was just above 1 per cent of GDP in 2016 and 2020.52

Public spending on long-term care varies across countries, reflecting differences in population structure and the development of formal long-term care systems. In 2019-2020, the Netherlands and Scandinavian countries (Denmark, Norway and Sweden) spent the most by far on long-term care, at around 2.5 to 3 per cent of GDP. Elevated spending mirrors the more developed formal long-term care systems in these countries. A second group of high-income countries, including Finland, France, Germany, Japan, Switzerland and the United Kingdom, allocate between 1 and 2 per cent of GDP to long-term care. In some South-Eastern European and Latin American countries, which have relatively younger populations, formal provision of care is less comprehensive. People with long-term care needs rely to a greater extent on unpaid family members (figure 5.7).

Figure 5.7

Government spending and household out-of-pocket payments on long-term care, share of GDP, latest available year



Source: OECD Health Statistics. Available at https://stats.oecd.org/ (accessed on 9 March 2022).

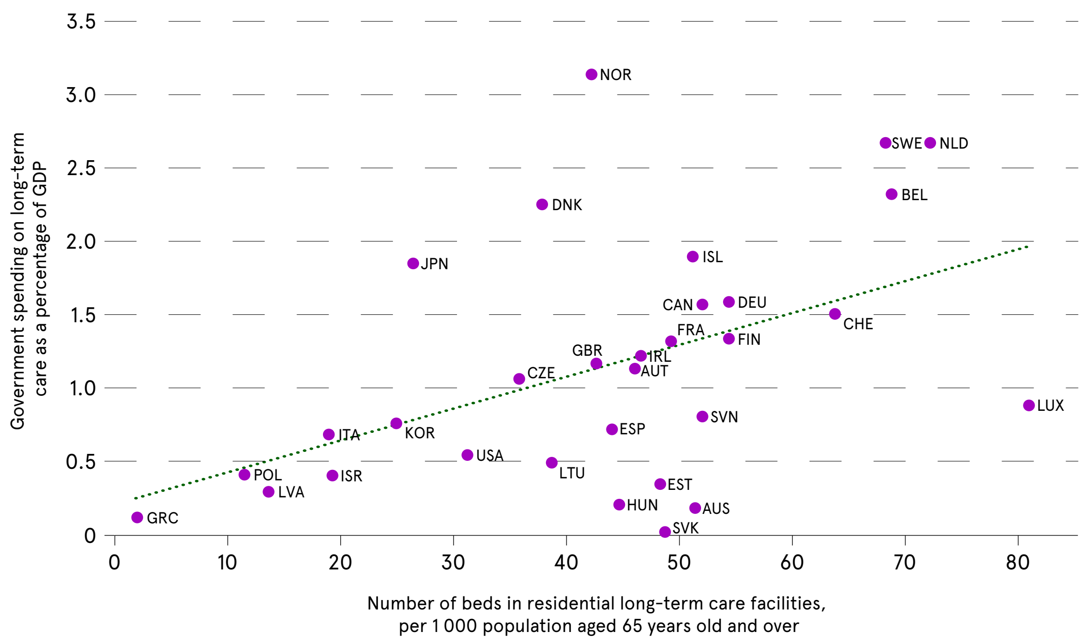
52 The calculation is based on OECD Health Statistics. Available at https://doi.org/10.1787/health-data-en (accessed on 1 March 2022).

Insufficient public expenditure leads to inadequate care infrastructure, indicated, for instance, by a low number of beds in residential long-term care facilities (figure 5.8). Long-term care infrastructure is limited in most countries in Africa, Asia and Latin America, and in some European countries (Lloyd-Sherlock and others, 2019). In Brazil, fewer than 1 per cent of older people have the option to live in a nursing home. Long-term care institutions are concentrated in urban areas and are relatively small, accommodating only 23 people on average. Long-term care capacities are even more limited in many African countries (Scheil-Adlung, 2015).

Overall, most countries provide investment falling far short of the real costs of long-term care services. Since participation in long-term care insurance could provide financial protection to older adults, some countries have instituted mandatory participation in it while people are still employed, such as Germany and the Republic of Korea (Scheil-Adlung, 2015). Yet insurance coverage has remained low. In the United States, private long-term care insurance covered only 11 per cent of adults aged 65 or above in community settings (not nursing homes) in 2014, often because of unaffordable premiums or the mistaken belief that standard health insurance would cover long-term care expenses (Johnson, 2016).

Older persons in many countries face high out-of-pocket payments for long-term care, including home and institutional care. Over half of the older persons in some countries, including Austria, Italy and Spain, had to spend their own

Figure 5.8 **Public spending on long-term care and long-term care beds in 2019 (or latest available year)**



Source: OECD Health Statistics 2021. Available at https://stats.oecd.org/ (accessed on 24 March 2022).
Note: The dotted line is a fitted one.

funds on long-term care with payments that can top 10 per cent of household income or more (Scheil-Adlung, 2015). Household out-of-pocket payments on long-term care are equivalent to over half of public spending in some countries, including Brazil, Estonia, Portugal and Switzerland (figure 5.7).

High out-of-pocket long-term care expenditures are likely to push older persons into poverty

High out-of-pocket long-term care expenditures are likely to push older persons into poverty. In the United States, nursing home stays have strong negative effects on total household wealth. One study found that after the first entry into a nursing home, a resident's total household wealth fell steadily over a six-year period, in contrast to those who stayed in their (owned) homes, the value of which may appreciate and increase household wealth (Banerjee, 2012).[53]

C.

COVID-19 CUT A DEVASTATING SWATHE THROUGH LONG-TERM CARE

1. CLUSTERED IN FACILITIES, OLDER PEOPLE WERE MORE VULNERABLE

Serious illness and deaths from COVID-19 infection have been highly concentrated among the oldest people. Those with some conditions that are more prevalent in older ages, such as diabetes, were more likely to die from the virus. In high-income countries, 89 per cent of both official deaths and excess deaths from the pandemic occurred among those over age 65 (Demombynes and others, 2021). In Italy, 35 per cent of older persons aged 80 or over who contracted COVID-19 died from the disease, compared to 1 per cent of people aged 40 to 49 (Signorelli and Odone, 2020).

In other countries, the picture has been slightly different. Roughly 40 per cent of official deaths and excess deaths were under age 65 in upper-middle-income countries with data, and 54 per cent in lower-middle-income countries. A similar pattern of much younger death profiles in middle-income countries holds when adjusting for differences in age distribution across countries (Demombynes and others, 2021). Age-disaggregated data on COVID-19-related deaths in low-income

53 In some cases, older persons in the United States transfer their assets to their children to qualify for Medicaid, which covers the costs of a long nursing home stay. Research finds that such Medicaid-induced asset transfers may be fairly small but not insignificant (Bassett, 2004).

countries are more limited but in 17 of these countries with data, an estimated 52 per cent of COVID-19 deaths were among people aged 65 or over.[54]

The types of care that older persons receive influence the risk of getting and dying from a COVID-19 infection. A large proportion of deaths have occurred in long-term care facilities. This reflects how the oldest people with comorbid conditions are more highly care dependent as well as the heightened risk of infection in communal settings (Graham and others, 2020).

Two recent studies using COVID-19 data disaggregated by age and care home residential status confirmed that the two main determinants of elevated risk of death in care homes were the underlying frailty of older persons and higher infection prevalence in care homes, in addition to old age (Hardy and others, 2021; Lai, 2022). The underlying frailty of older people in care homes accounted for 46 per cent of the difference in mortality rates between care home residents and non-residents in Belgium, while in England and Wales, it accounted for 66 per cent of the difference in the first wave and 88 per cent in the second wave (Lai, 2022). Higher infection prevalence accounted for 40 per cent of the difference in mortality between care home residents and non-residents in Belgium, while in England and Wales, it accounted for 26 per cent during the first wave and was negative during the second wave. Higher immunization rates among care home residents and better infection control procedures in care homes helped to curb infection in England and Wales (ibid.).

In countries where a greater proportion of older people live in institutions, such as Australia, Denmark and Switzerland, they are 60 times more likely to die from COVID-19 than people at younger ages. By contrast, in countries with a smaller proportion of older persons living in institutions, such as China, Mexico and Nigeria, older persons are eight times as likely to die from COVID-19 compared to those at younger ages (United Nations, 2020f).

Higher COVID-19 mortality rates in care facilities are associated with poorer quality ratings and overcrowding (Weech-Maldonado and others, 2021). Multiple room occupancy tends to be more common in developing countries, and facility staffs generally have more limited training, possibly impeding infection control (Roqué and others, 2016; Mapira, Kelly and Geffen, 2019). The practice of transferring COVID-19-positive older people from hospitals to care facilities without due precautions as well as failing to prioritize the provision of protective equipment to care facilities during the early phase of the pandemic contributed to higher death rates (Gibson and Greene, 2021).

Across all countries, fewer data track COVID-19 infections among older people outside facilities. Previous research suggests that those in multigenerational households often have extensive and frequent contacts with other household members, which heightens the risk of disease transmission. This was especially so for lower-income families, who were more likely to have a household member classified as an essential worker, reinforcing overlapping and compounding health and economic

54 Max Planck Institute for Demographic Research, COVerAGE-Database. Available at www.demogr.mpg.de/en/publications_databases_6118/online_databases_6676/ (accessed on 30 June 2022).

inequalities. Even when multigenerational families do not co-reside, older persons who live close to extended family members may have frequent contacts with them (Tomassini, Wolf and Rosina, 2003). Older persons living alone or with their spouse only would be expected to have the lowest infection rates due to their ability to limit social contacts (United Nations, 2020f).

Taken together, these findings suggest that if countries continue to incorporate large long-term care institutions into their care provision strategies, they must remain aware of how these concentrate vulnerabilities and require extra care and precautionary measures to stop the spread of new pathogens.

2. LONG-TERM CAREGIVERS PAID A HIGH PRICE, MANY TIMES OVER

The pandemic had profound impacts on caregivers. It increased caregiver stress and reduced the quality of care by limiting families' access to external support such as home visits, day centres and respite facilities (Kostyál and others, 2021; Onwumere and others, 2021). It also likely exacerbated pre-existing inequalities in informal care. The poorest families and caregivers of older persons with the most complex needs likely suffered most from compounding economic and other pressures and disruptions in health and care services (Lorenz-Dant and Comas-Herrera, 2021; United Nations, 2020f). Disadvantaged families without access to digital technology faced obstacles to alternative virtual services where these were introduced.

Most paid care workers have faced both the economic impact of the crisis and the medical and psychological toll of higher exposure to the virus. Throughout the pandemic, care workers remained in close contact with those most susceptible to infection, thus raising their own risks. Due to low wages, some carers took on multiple part-time jobs at different facilities while a lack of sick pay discouraged many from caring for themselves when ill. Travel between care facilities on crowded public transport may have heightened exposure and the chance of carers becoming vectors for viral entry into facilities (Chen, Chevalier and Long, 2020).

Such factors have contributed to high rates of burnout, illness and death among care workers, especially migrants (White and others, 2021). A survey of migrant health and care workers across 32 countries found that 40 per cent experienced increased job insecurity, 48 per cent had inadequate access to personal protective equipment and 27 per cent were only offered unpaid leave when infected with COVID-19 (Pillinger, Gencianos and Yeates, 2021). In the United States, for example, Filipinos make up 4 per cent of nurses but accounted for 32 per cent of COVID-19 deaths among nurses in 2020 (ibid.).

D.

MORE EQUITABLE CARE CENTRES ON WHAT PEOPLE NEED – AND DECIDE

Population ageing, combined with changes in older persons' living arrangements, is increasing demand for different forms of care and has left many countries grappling with the implications. Reducing care dependency in later life requires a life course approach to promoting healthy ageing and preventing poverty. Adequate care and support systems for people in need of care – especially women and those from marginalized groups – could help reduce existing inequalities *among* older persons.

Reducing care dependency in later life requires a life course approach to promoting healthy ageing and preventing poverty

Across countries, the COVID-19 pandemic exposed existing weaknesses in approaches to long-term care and showed how these can aggravate inequalities. Poor quality and underfunded care facilities, insufficient provisions for care at home, and low wages and precarious conditions for paid care workers all increased the threat to older persons. The scale of the crisis has sounded a call for fundamental reform of care and support systems, including long-term care. Failure to do so will harm today's older persons and those who care for them, as well as future cohorts of older people.

A more equitable approach to providing care and support systems, especially for long-term care, would be person-centred, and tailored to the needs, values and preferences of care recipients and their caregivers. This goes beyond the medical aspects of care, encompassing an individual's culture, life history, social support network and identity, and giving recipients of care control over decisions that affect them. It would be holistic, involving governments, businesses, communities and households, and addressing needs for both paid, formal care and informal, unpaid care.

1. REGULATING IMPROVEMENTS IN CARE QUALITY AND CONDITIONS

Governments need to develop and implement long-term care strategies that include a sound regulatory framework, training and support for caregivers, coordination and integration across sectors, and mechanisms such as accreditation and monitoring to ensure quality. Older persons should be systematically involved in policymaking to ensure that policies meet their health and care needs. Population-based studies of older persons living at home, in communities and in institutions could inform policymaking by identifying the levels and distribution of care services, how they change over time, and the extent to which they meet the needs and expectations of older people.

For paid care workers, a range of measures can enhance the quality of their jobs and, therefore, the quality of long-term care services. Many countries need to pass legislation consistent with international labour standards to recognize and protect care workers and end inequalities in working conditions. Care jobs should provide at least the legal minimum wage. Higher wage levels should align with an expanded job scope, upgraded skills or career progression. Measures to improve working conditions may include guaranteeing minimum hours for care workers, many of whom have no guaranteed hours and are paid per client visit. It could also mean ensuring that care workers making home visits are paid for the time and fuel used in travelling between homes. Providing weekly rest days and paid annual vacation, reducing the maximum duration of shifts and adopting flexible work arrangements can all improve job retention and morale.

National legislation should also guarantee care workers' rights to access social protection coverage. Care worker participation in collective action and consultations between employers and worker organizations should be encouraged. In addition, national training standards can articulate core skills and competencies for care work, which could then be developed through regulated training facilities that provide training and certification to promote proper recognition and career advancement.

Supportive migration policies through regular channels can improve the supply of skilled care workers from other countries when the domestic supply is insufficient. Such arrangements must not be extractive, however. Making migration partnerships mutually beneficial requires efforts to build skills and talent within countries of origin. Countries should also consider policies, including labour laws, to protect migrant caregivers' rights, such as to adequate housing and living conditions; health care; rest and recuperation periods, encompassing weekly time off and paid annual leave; recognition of existing qualifications and credentials; continued possession of travel and identity documents; and access to justice and effective redress mechanisms. Host and sending countries need to discuss responsibilities in providing and ensuring access to adequate social protection and health-care services for migrant caregivers.

2. INVESTING IN LONG-TERM CARE

Expanding and improving long-term care provision, care-related infrastructure,[55] social protection coverage for caregivers and care-related training all entail additional investments. The COVID-19 crisis underscored the critical importance of investing in emergency preparedness for long-term care. Many high-income countries are projected to boost public spending on long-term care over time. For countries of the European Union, public long-term spending is estimated to rise from 1.6 to 2.2 per cent of GDP between 2016 and 2040. In Australia, national government expenditure on care services for older persons accounted for 0.9 per cent of GDP in 2014-2015 and is projected to rise to at least 1.7 per cent of GDP by 2054-2055. These increases are attributable to population ageing, a decline in informal family caregivers and the greater availability and costs of formal long-term care as well as growing household wealth (WHO and OECD, 2021). Raising public spending is challenging, however, especially in the wake of the pandemic, which has devastated fiscal space and worsened debt situations in most countries, developing ones, in particular (see chapters 3 and 4 on financing policy responses).

55 This includes infrastructure related to obtaining water, improving sanitation and providing energy.

To complement public programmes, individuals could purchase private long-term care insurance. In some countries, such as France and the United States, individuals enrol in such insurance on a voluntary basis (WHO and OECD, 2021). Yet private long-term care insurance markets remain relatively small (Fang, 2016); they do not represent a major source of funds to finance long-term services. To bolster a larger private market, Governments can incentivize participation by regulating long-term care insurance pricing and maintaining market stability. In tandem, they can take measures to improve perceptions of risk by the working-age population and their ability to estimate long-term care dependency. Tax exemptions for long-term care facilities, equipment, medicine and other health-care auxiliaries could encourage private investment.

3. HELPING PEOPLE AGE IN PLACE

Countries should provide additional support to help people age in place, so that they can retain family and other social connections. An important element is to better support unpaid care providers. Governments can do much more to recognize the value of unpaid care and reduce its financial, physical and mental burdens. This includes establishing and expanding formal long-term care systems that provide a continuum of respite care, either at home, in day centres or in residential institutions. Accessible housing and transportation services can also help ease the burden on caregivers. National ministries, local governments, non-governmental service providers and other stakeholders could collaborate and explore innovative community-based service models, such as integrating social care services through co-location and collaboration with community service organizations, developing case management capacity, and promoting healthy and active ageing. Sharing lessons and good practices from community-based service models could foster their transfer and uptake across countries.

Governments can do much more to recognize the value of unpaid care and reduce its financial, physical and mental burdens

Extending paid leave entitlements as well as flexible working arrangements for family caregivers enables older people to remain at home and reduces the need for more expensive residential care. At the same time, financial support for family caregivers can help with the ongoing costs of providing care – for example, by replacing lost wages and tax deductions – while helping to avoid more costly interventions, such as hospitalization. Governments can also provide training for unpaid caregivers to improve the quality of services as well as encourage investment in new technology to support them, for instance, by easing physically challenging tasks, facilitating online learning and dissemination of information about worker rights and mobilization, and improving communication, including with family members. Use of digital long-term care services, such as remote telecare, rose during the pandemic. It may not be practical to deploy all new technologies in the care sector, however. Countries should ensure that such innovations help to break down, rather than reinforce, the digital divide affecting older persons.

Government policies need to complement measures adopted by businesses. Private long-term care insurance could protect older persons from high out-of-pocket costs if they need assistance at home or in nursing or assisted-living facilities. Incentivized by government policies, employers could offer access to long-term care insurance through workplace retirement plans on an opt-out basis.

4. CREATING AN ENVIRONMENT THAT FOSTERS BETTER CARE

A combination of these measures can enhance the well-being of caregivers and improve care outcomes. They can challenge gender norms around caregiving by recognizing the inherent value of unpaid care work. Paid care work would become a more attractive employment proposition for both men and women. New business opportunities could open and boost the broader economy.

Such measures can also foster social cohesion through the sharing of risk across a community. Target 5.4 under the SDGs urges recognizing unpaid care and domestic work, providing public services, infrastructure and social protection policies, and promoting shared responsibility for care at the household level (United Nations, 2015b).

More data on gender norms in care are needed to inform governments and other stakeholders. Formalizing care work can create jobs and trigger new opportunities for women to participate in the economy. A sustainable and equitable system for long-term care needs to free women to pursue what they value, such as education or participation in the workforce, while encouraging men to assume their fair share of care duties, including those at home.

Formalizing care work can create jobs and trigger new opportunities for women to participate in the economy

Finally, better oversight and regulation of care facilities can help address inequalities in care provision. As shown during the COVID-19 crisis, many long-term care facilities are poor quality and leave residents highly exposed to disease and death. Governments and private providers should work together to ensure that care facilities meet agreed minimum standards and that workers have quality training sensitive to the needs of older persons. Governments should enhance pandemic preparedness, including around offering support for the mental well-being of caregivers.

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