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How to Achieve the SDGs:
The SDSN Framework

Part 1
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Overview

This statement, issued by Members of the Leadership Council of the UN Sustainable Development Solutions Network (SDSN), builds on the work of the SDSN's Secretariat and its global programs, as well as the work of its 1,900 member institutions, spanning all world regions.

The grim reality is that at the midpoint of the 2030 Agenda, the SDGs are far off track. At the global level, averaging across countries, not a single SDG is currently projected to be met by 2030, with the poorest countries struggling the most. And global cooperation has ebbed as geopolitical tensions have risen. In response to this situation, United Nations Secretary-General António Guterres has urged world leaders to come together at the 2023 SDG Summit in September to deliver a "Rescue Plan for People and Planet".[1] SDSN offers the following recommendations to accelerate progress over the remaining seven years to 2030, and to set even more ambitious targets to be achieved by 2050 under the SDG framework.

As the world's nations prepare to meet in September to review the progress the world has made so far towards achieving the SDGs, at the midpoint of the 2030 Agenda, SDSN emphasizes six areas for immediate action.

I. Most urgently, UN Member States should adopt an **SDG Stimulus**, to close the massive financing gap faced by many developing economies. As called for by United Nations Secretary-General António Guterres,[2] the SDG Stimulus plan has five main components:

    1. Increased funding from the multilateral development banks (MDBs) and public development banks (PDBs) to low- and middle-income countries, linked to investments in the SDGs;

    2. Enhancement of relief for countries facing debt distress;

    3. Expansion of liquidity by the International Monetary Fund (IMF) and major central banks;

    4. Empowerment and expansion of the specialized global funds; and

    5. Expansion of private philanthropy with a focus on ultra-high-net-worth individuals.

II. UN Member States must endorse a deep and overdue reform of the **global financial architecture**. SDSN identifies six priorities for this reform:

    1. Greatly increased funding for national and subnational governments and private businesses in the emerging economies, especially the low-income countries (LICs) and lower-middle-income countries (LMICs), to carry out needed SDG actions;

    2. Revision of the credit-rating system and debt-sustainability metrics to facilitate long-term sustainable development;

    3. Revision of the liquidity structures for LICs and LMICs, especially regarding sovereign debt, to forestall self-fulfilling banking and balance-of-payments crises;

    4. Creation of ambitious, internationally-agreed criteria for sustainable finance that are mandatory for all public financial institutions in high-income countries (HICs), middle-income countries (MICs), and LICs alike.

    5. Alignment of private business investment flows in all countries with the SDGs, through improved national planning, regulation, reporting, and oversight.

    6. A reform of current institutional frameworks and development of new and innovative mechanisms to improve the quality and speed of deployment of international cooperation, and the monitoring of progress in an open and timely manner.

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1. General Assembly Economic and Social Council, *Progress towards the Sustainable Development Goals: Towards a Rescue Plan for People and Planet*, Report of the Secretary-General, Special Edition, May 2023. https://hlpf.un.org/sites/default/files/2023-04/SDG%20Progress%20Report%20Special%20Edition.pdf

2. *United Nations Secretary-General's SDG Stimulus to Deliver Agenda 2030*, Feb 2023. https://www.un.org/sustainabledevelopment/wp-content/uploads/2023/02/SDG-Stimulus-to-Deliver-Agenda-2030.pdf

III. All UN Member States should adopt long-term **sustainable development pathways** that provide a stepwise and medium- to long-term approach to guide their sustainable development policies, not only to 2030 but to 2050, with particular focus on gender equality, social inclusion, and the principal of 'leave no one behind'. We are facing a long-term set of challenges: resolving them must be the global priority for a generation to come. SDSN recommends that national pathways should include six key transformations:[3]

1. Universal quality education and innovation-based economy: a massive increase in investments in quality education and in science and technology innovation systems;

2. Universal health access and coverage: an expansion of health coverage to ensure universal access to both preventative and curative services;

3. Zero-carbon energy systems: the transition by 2050 of energy systems to net-zero emissions;

4. Sustainable ecosystems, sustainable agriculture, and climate resilience: the transition to sustainable land use, healthy diets, and resilience to ongoing climate change;

5. Sustainable cities: urban infrastructure and services to ensure productive, safe, inclusive, and healthful cities for a world that will be around 70 percent urbanized in 2050;

6. Transformation to universal digital access and services: actions by governments at all levels to ensure universal access to digital services including online payments, finance, telemedicine, online education, and others, while ensuring privacy and online safety.

IV. All UN Member States should present, at regular intervals, their national SDG frameworks in the form of **Voluntary National Reviews** (VNRs). To date, 188 of the 193 UN Member States have already presented VNRs. Five countries (Haiti, Myanmar, South Sudan, the United States, and Yemen) have yet to do so, and should prepare to do so with urgency.

V. All UN Member States should recommit to **peaceful cooperation**, in the service of the SDGs and all other multilateral agreements. Current geopolitical tensions are hindering SDG achievement and diverting financial and human resources away from sustainable development. Global spending on armaments, estimated at US$2.2 trillion in 2022, dwarfs financing for the SDGs and climate change. SDSN calls on all nations to renounce violence, live within the United Nations Charter, and settle conflicts through diplomacy, especially through the UN Security Council.

VI. UN Member States should commit to accelerating SDG progress to 2030, and to setting even more ambitious **SDG targets to 2050**, incorporating the recent Kunming-Montreal Biodiversity Framework and the High Seas Treaty.

The report that follows offers SDSN's update on the state of the SDGs at their mid-point, highlighting the growing dangers of adverse environmental, social, and economic "tipping points" and identifying key ways that the global community can and should accelerate SDG progress.

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3. Sachs, J.D., Schmidt-Traub, G., Mazzucato, M. et al. Six Transformations to achieve the Sustainable Development Goals. *Nat Sustain 2*, 805–814 (2019). https://doi.org/10.1038/s41893-019-0352-9

Introduction

The SDGs are facing strong headwinds. Despite significant efforts in some places, national governments on all continents have fallen short in integrating the SDGs into national policies and public investments. Moreover, societal polarization, populism, and growing geopolitical conflict are hindering the global cooperation needed to achieve the SDGs. Civil society, including academic institutions, is becoming more constrained in the midst of intensifying political tensions. The international financial architecture is failing to channel global savings to SDG investments at the needed pace and scale.

We emphasize that achieving the SDGs rests on five pillars of good governance:

1. Preparing long-term SDG pathways to guide public policy;

2. Ensuring SDG financing at the necessary scale and timing;

3. Promoting global cooperation and reducing geopolitical conflict and tension;

4. Supporting innovation to broaden social inclusion and environmental sustainability;

5. Regular reporting on SDG progress and performance.

The SDGs are not only a public policy framework; they are an ethical imperative. They are grounded in the Universal Declaration of Human Rights, which celebrates its 75th anniversary this year. The SDGs are based on its core premises; that "All human beings are born free and equal in dignity and rights … and should act towards one another in a spirit of brotherhood," and that "it is essential to promote the development of friendly relations between nations."

As the Universal Declaration makes clear, and the SDGs make explicit, social justice and sustainable development require the full realization of the rights of all people. This includes equality of opportunities for girls and women (SDG 5), respect for the rights and voice of Indigenous peoples around the world, and a much larger role for young people, who will face the consequences of our (in) actions throughout the 21st century.

The UN Sustainable Development Solutions Network (SDSN) is dedicated to finding and amplifying practical solutions to achieve the SDGs and closely-related global goals (such as the Paris climate agreement and the Kunming-Montreal Biodiversity Framework). We emphasize that all these global goals are interrelated and must be achieved together. Members of the SDSN Leadership Council offer the following assessments and recommendations to the UN Member States, the United Nations Agencies, international finance institutions, business, and civil society, based on more than a decade of research, measurement, advising, and partnerships across the world.

Dire shortfalls in meeting the SDGs

The SDGs are seriously off track (Figure 1.1). SDG progress was already very slow in the five years to 2020. According to the annual SDG Index, global achievement of the SDGs rose only slightly, from 64 percent in 2015 to 66 percent in 2019 – far too slowly to meet the goals by 2030, and with highly uneven progress within and between countries. Then with the onset of the pandemic, progress stopped. As of 2022, the global SDG Index is below 67%. At current trends, based on simple projections, there is a risk that the gap in SDG outcomes between HICs and LICs will be wider in 2030 (29 points) than it was in 2015 (28 points). This means that we are at risk of losing a decade of progress towards convergence globally (Figure 1.2). The multiple geopolitical crises in the world today will no doubt place further obstacles on the path to 2030. If we look at each of the 17 individual SDGs, not a single SDG is projected to be met at the global level.

The world is also seriously off track to meet the Paris agreement climate targets and SDG 13 (Figure 1.3). Global warming as of 2022 stood at 1.2°C, with warming continuing at more than 0.3°C per decade.[4] At this rate, the likelihood of overshooting 1.5°C, even within a decade, is very strong. According to the UNEP *Emissions Gap Report 2022*, current policies put the world on track

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4. Hansen, James et al. 2002. *Earth's Energy Imbalance and Climate Response Time*. http://www.columbia.edu/~jeh1/mailings/2022/EarthEnergyImbalance.22December2022.pdf

Dire shortfalls in meeting the SDGs

Figure 1.1

SDG Index world average: pre-pandemic trend and trend needed to achieve the SDGs by 2030
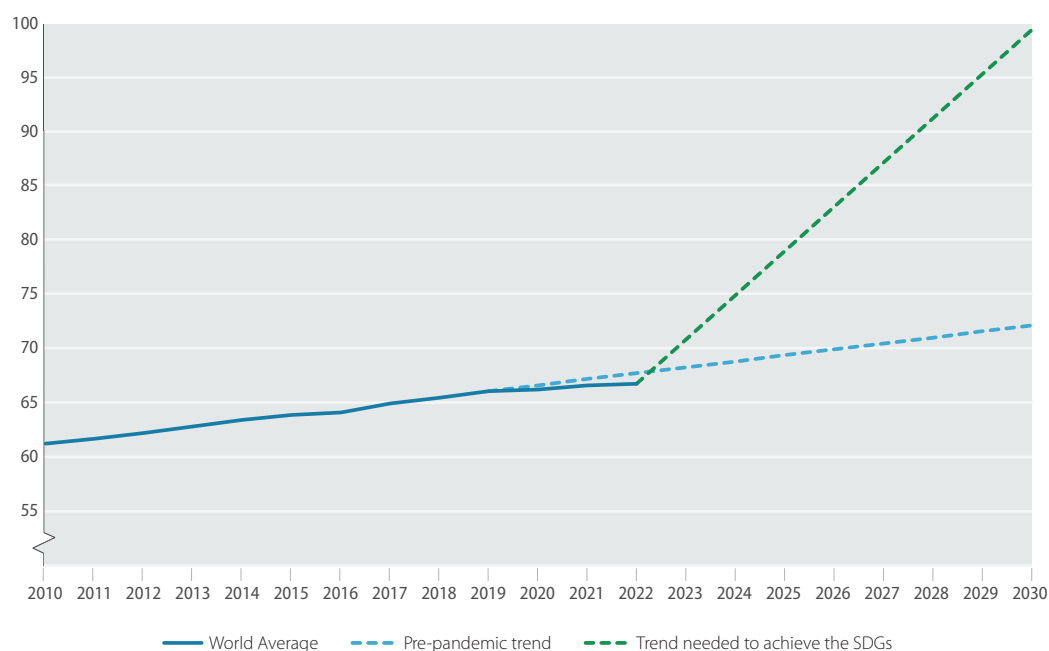
Note: Pre-pandemic trend corresponds to the extrapolated annual growth rate over the period 2015–2019. See Part 2 for further details.
Source: Authors analysis

to reaching a disastrous 2.8°C warming by 2100.[5] Current Nationally Determined Contribution (NDC) targets, if implemented, would still lead to around 2.4°C warming by 2100. Even taking the net-zero pledges of many countries into account, best-case scenarios given current pledges would lead to around 1.8°C warming by 2100.

Biodiversity targets (SDG 15 and targets agreed under the CBD) are also at grave risk. All dimensions of biodiversity, including species abundance, species diversity, and the functioning of ecosystems, are under threat. It has been announced that the current loss of species rate is 1,000–10,000 times more than the natural extinction rate. A combination of land-use change (e.g., dramatic increases of tropical deforestation), global warming, and pollution are driving more and more species, including entire families and orders of species, towards mass extinction. At the same time, Indigenous peoples who

have been safeguarding and stewarding these resources for millennia are facing greater threats than ever.

Water scarcity affects more than 40% of the world's population. An estimated 1.8 billion people depend on drinking water contaminated by human waste. Unsustainable water management practices, including chemical discharges into water supply systems for irrigation, affect the functioning of ecosystems services.

Global resource consumption assessments for rare earth elements are critical. Although reserves of these elements do not exist in concentrated clusters – which make them inefficient for mining – certain countries are quite dominant in this field, producing 98% of the world's supply. As demand for rare earth elements is increasing tremendously, their scarcity is becoming more evident.

Ocean goods and services (SDG 14 and the High Seas Treaty) are at severe risk due to full- to over-exploitation

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5. UNEP. 2022. *Emissions Gap Report*. Available at https://www.unep.org/resources/emissions-gap-report-2022.

Figure 1.2

Observed and projected gaps in SDG Index score between HICs and LICs (in percentage points)
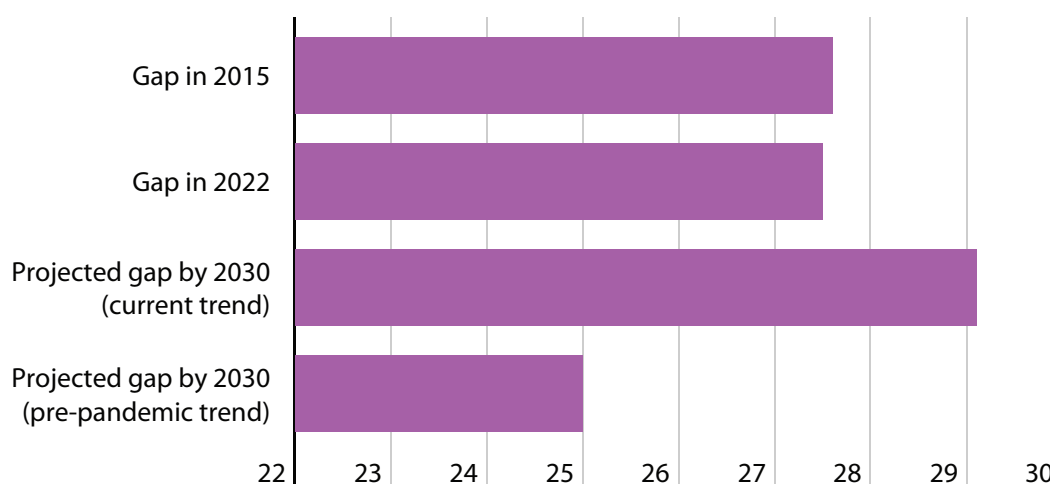
Note: Projected gap by 2030 is based on extrapolation of annual growth rate on the SDG Index over the period 2019-2021.
Pre-pandemic projected gap is based on an extrapolation of SDG Index annual growth rates over the period 2015-2019.
Source: Authors analysis

of nearly 90% of global fish stocks.[6] The crises facing our oceans are unabated, multidimensional, and complex. These crises include the destruction of fisheries through over-fishing and the deployment of destructive technologies (such as ocean trawling); the destruction of coastal wetland ecosystems; the mass pollution of estuaries through fluxes of nitrogen and phosphorus (causing eutrophication) and other chemical pollutants; acidification of the oceans (with an increase of 30% over the last 50 years due to rising atmospheric concentrations of CO_2[7]); pollution of the high seas (including plastic waste and microplastics in marine food chains); the slowdown of ocean circulation due to climate change; explosions of invasive marine species due to increased shipping facilities; and rising sea levels (including the growing possibility of a rapid, multi-metre sea-level rise caused by the disintegration of parts of the Antarctic and Greenland ice sheets). Inland fisheries are also experiencing similar challenges.

The 2021 UN Food Systems Summit raised many urgent concerns around improving the sustainability, affordability, and quality of food across the world (SDG 2). Overall, the Food Systems Summit highlighted the need for an integrated and global approach to addressing food systems challenges, including food security, rural development, the reduction of food waste, transparency along the value chain, sustainable diets, and the fight against climate change.

Providing quality education (SDG 4) for all children is perhaps the single most important key to achieving sustainable development in the long term. The UN General Assembly's Transforming Education Summit held in September 2022 was a critical meeting to spur national and global efforts to transform education to give all people the skills and knowledge to end poverty, protect the environment, and build peaceful and inclusive societies.[8] And yet, the truth remains that hundreds of millions of children are either out of school entirely or receiving such an under-funded and under-resourced education that they are failing to achieve basic literacy and numeracy even after several years of education.

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6. The World Bank. 2017. *Atlas of Sustainable Development Goals*. https://datatopics.worldbank.org/sdgatlas/archive/2017/SDG-14-life-below-water.html

7. Smithsonian Institution. 2018. *Ocean Acidification*. https://ocean.si.edu/ocean-life/invertebrates/ocean-acidification

8. UN Transforming Education Summit, 2022, https://www.un.org/en/transforming-education-summit
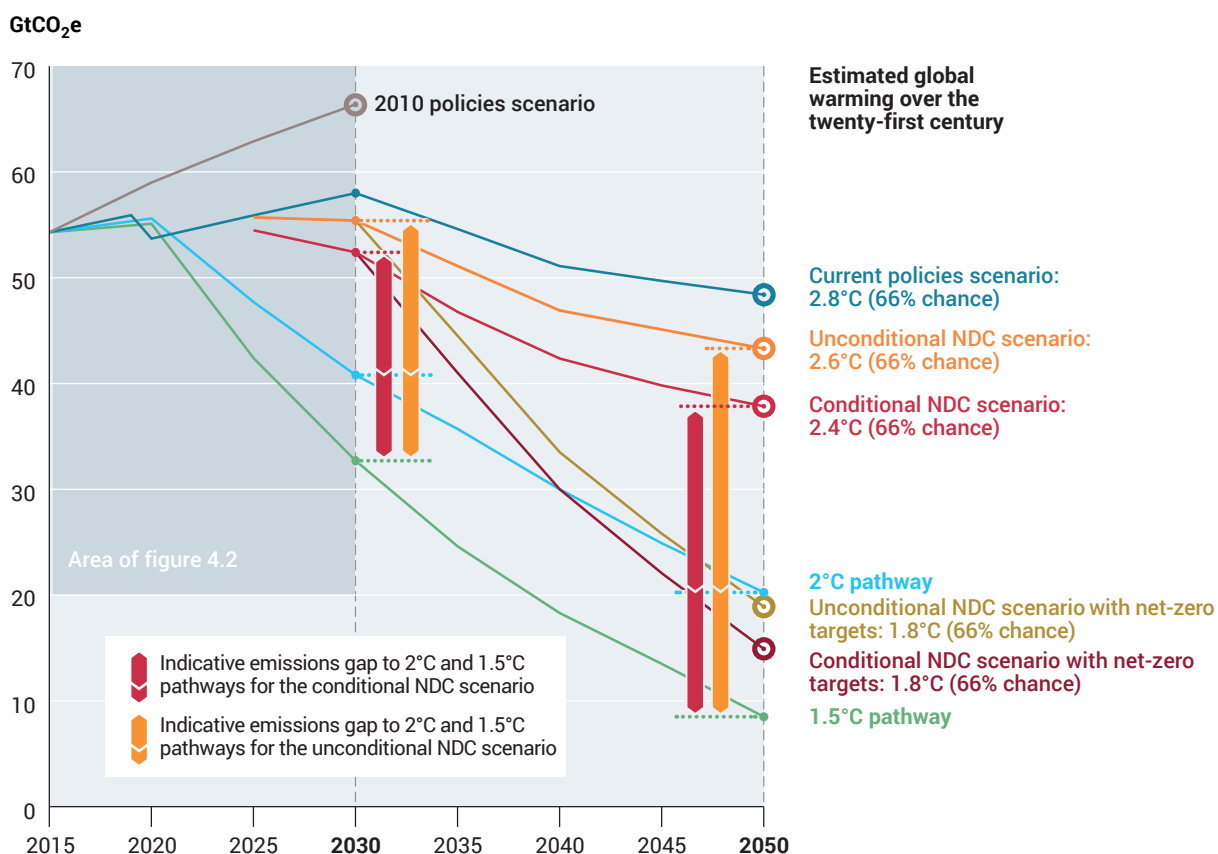
Planetary boundaries and geophysical tipping points

Humanity is eroding the biological and physical resilience of Earth's physical systems by transgressing environmental limits that endanger their functioning: the "planetary boundaries" that regulate the Earth system. The latest scientific assessments indicate that six of the nine planetary boundaries have been breached. **The scientific evidence points to global risks well beyond climate change, including the loss of biodiversity and ecological functions, changes in natural land use configuration, overuse of both green and blue water, overloading of nitrogen and phosphorus, and widespread chemical pollution.**

One of the most ominous aspects of this rampant, and still uncontrolled, heedlessness is the likelihood of reaching multiple dire tipping points in the Earth's physical systems. Scientists have identified a large number of extremely dangerous potential tipping points, with linkages and dependencies across the different planetary boundaries. Tipping points are characterized by a non-linear response to gradual human forcings. Human-induced global warming could hit several tipping points that may in turn lead to further feedbacks (amplifications) of the warming. For example, as the Earth warms, sea ice melts, reducing the reflectance of solar radiation back into space and accelerating the warming. Similarly, melting permafrost in the Tundra could release massive stores of CO_2 and methane, leading to rapid further warming. Another

Figure 1.3
Projected global warming under alternative policy scenarios[9]

GtCO$_2$e

Legend:
- Indicative emissions gap to 2°C and 1.5°C pathways for the conditional NDC scenario
- Indicative emissions gap to 2°C and 1.5°C pathways for the unconditional NDC scenario

2010 policies scenario

Area of figure 4.2

Estimated global warming over the twenty-first century

Current policies scenario: 2.8°C (66% chance)

Unconditional NDC scenario: 2.6°C (66% chance)

Conditional NDC scenario: 2.4°C (66% chance)

2°C pathway

Unconditional NDC scenario with net-zero targets: 1.8°C (66% chance)

Conditional NDC scenario with net-zero targets: 1.8°C (66% chance)

1.5°C pathway

Source: UNEP, *Emissions Gap Report 2022*

tipping point would be the collapse of the world's rainforests due to warming (and associated drying) in the Amazon, Congo, and other tropical regions, which would release a massive new load of CO_2 into the atmosphere. Others include slowing or stopping the global ocean (thermohaline) circulation, and significant loss of coral reefs.[10] Each of these potential tipping points would lead to global disaster on an unprecedented scale.

The interconnected environmental, social, and health challenges can be characterized as a planetary health crisis, caused by human activities such as industrialization, urbanization, deforestation, and the burning of fossil fuels. The consequences of inaction in the face of this crisis are significant and far-reaching, affecting both the natural systems that sustain life on Earth and the well-being of human societies.

Grave dangers of social tipping points

Unless the SDGs are actively pursued, geophysical tipping points combined with technological disruptions could ignite disastrous social conflicts within and between nations. We must therefore acknowledge the real risk of negative "social tipping points" beyond which peaceful governance and co-existence breaks down, as it did in World War I and World War II.

We firmly believe that international cooperation together with the achievement of the SDGs is the best preventative to this dire and growing risk, and represent an opportunity to create positive social tipping points: for example, through equal access to high-quality education (SDG 4), and by fighting all forms of inequalities, including income and wealth inequalities (SDG 10).

We see across societies that inequalities are rising. Environmental crises weigh most heavily on the poorest and most marginalized individuals. At the same time, technological advances such as artificial intelligence and robotics have the potential to eliminate many working-class and professional jobs. The COVID-19 pandemic also severely depleted trust in governments. Many societies, and not only the poorest ones, are facing increased crises of governance, marked by political and social instability, general strikes, and a further loss of public confidence in government. Although all governments are in principle committed to economic justice as enshrined in the Universal Declaration of Human Rights, and to the SDG tenets of 'leave no one behind' and 'reach the furthest behind first', too few are living up to these commitments, especially as powerful groups block adequate public support for weaker groups.

In her 2022 report on the SDGs, E. Tendayi Achiume – UN Special Rapporteur on contemporary forms of racism, racial discrimination, xenophobia and related intolerance – noted that racism and racial discrimination are key barriers to sustainable development, and called attention to the failure of some States to collect disaggregated data on race, ethnicity, indigeneity, and migration status in the context of the 2030 Agenda. She noted however that, while disrupting the dynamic of racially discriminatory underdevelopment may require a greater transformation than is possible at this moment, the SDGs held untapped potential to advance both development and non-discrimination. The report's recommendations include calling for more racially-disaggregated SDG indicators and for dialogue with stakeholders on how to use these indicators to better allocate resources and prioritize the inclusion of marginalized peoples.[11]

The geopolitical situation today is certainly the most conflictual in decades, perhaps since World War II. The rise of China has led to great tension between it and the

9. UNEP. 2022. *Emissions Gap Report*. Available at https://www.unep.org/resources/emissions-gap-report-2022.

10. David I. Armstrong McKay, et al., Exceeding 1.5°C global warming could trigger multiple climate tipping points. *Science 377*, eabn7950 (2022). DOI:10.1126/science.abn7950

11. Achiume, T. E. (2022). *2030 Agenda for Sustainable Development, the Sustainable Development Goals and the fight against racial discrimination*. Report of the Special Rapporteur on contemporary forms of racism, racial discrimination, xenophobia and related intolerance. A/HRC/50/60 (13 June–8 July 2022), available from https://www.ohchr.org/en/documents/thematic-reports/ahrc5060-2030-agenda-sustainable-development-sustainable-development.

United States, and much of the world is trying to adjust to the strains between these two major economies. The disastrous war in Ukraine has further destabilized and divided the world's nations. There are calls in many countries to increase military budgets, even as the SDGs are woefully underfunded at home and internationally. New records on global military spending were reached in 2022, totaling US$2.2 trillion, even as the most basic social services were under grave stress in many countries.

Economic tipping points could accompany or be triggered by environmental, social, governance, and geopolitical tipping points. Banking failures are a prime example of an economic tipping point: the national economy deteriorates to the point where a financial crisis is triggered, in turn pushing the economy into a massive downturn. This was seen in the Great Depression of the 1930s and the Great Recession of 2008. Similarly, extreme poverty can lead to a collapse of tax revenues, followed by government bankruptcy and further economic collapse, a syndrome that now threatens dozens of poor countries.

Investing in the SDGs

Despite this ominous news, the SDGs are still achievable. None of their objectives are beyond our reach.[12] Yes, the world is off-track, but that is all the more reason to double-down on the goals, rather than surrendering to human-made shortfalls in achieving them. Our future remains in our hands.

At their core, the SDGs are an investment agenda. In the most basic terms, the world must devote an increased portion of current output to building up sustainable capital assets for the future, and must deploy such assets effectively. Sustainable capital assets are long-lasting capital resources that can enable the world to meet the agreed goals of economic well-being, social justice, and environmental sustainability. The world must both shift its current investment patterns and increase the overall investment flow in order to build the future we want.

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12. Sachs JD, Schmidt-Traub G, Lafortune G., 2020. Speaking truth to power about the SDGs, *Nature*. https://www.nature.com/articles/d41586-020-02373-7

Development practitioners have identified eight major kinds of capital assets:

1. **Human capital:** The skills and health of a productive citizenry, supported by universal health access and coverage, quality education, shared data and knowledge, promotion of a culture of peace and non-violence, global citizenship, and the appreciation of cultural diversity.

2. **Infrastructure:** Energy production and distribution, land and sea transport, telecommunications, digital information services, public buildings (e.g., schools and hospitals), and safe water and sanitation.

3. **Natural capital:** The capacity and healthy functioning of ecosystems, to be protected by ending human-induced climate change, protecting biodiversity, sustainably managing freshwater resources, and eliminating toxic pollutants.

4. **Innovation capital:** The stock of intellectual property and data resulting from public and private research and development, creative cultural works, and responsibly governed and managed emerging technologies.

5. **Business capital:** Goods and services of true social value derived from utilizing the machinery, buildings, information resources, and other capital assets that underpin business productivity.

6. **Social capital:** Social trust and pro-social values, good governance and justice, freedom of speech and the press, trusted scientific capabilities, and international cooperation.

7. **Urban capital:** Spatial human settlements, notably in urban areas, that drive and support productive and creative interactions across the other seven capital assets.

8. **Cultural capital:** Appreciation of the diversity of cultures, value systems, languages, the traditional knowledge systems of Indigenous peoples, and artistic expressions.

These capital assets are complementary; that is, they work together in a mutually-supportive manner. A business cannot be productive if its workers lack skills and health, or if there is no electricity, piped water,

transport, or digital access. A society cannot function peacefully if there is a breakdown of social capital. A city cannot function without water. Challenges such as decarbonization cannot be met with existing technologies alone, and so depend on continued innovation and scientific research, especially in countries where investment is low. There is no hope of achieving global food security for more than eight billion people unless Earth's natural capital is protected. And there is no hope for global peace unless there is respect for, and investment in, cultural capital and cultural diversity.

To achieve the SDGs, the world must invest boldly, amply, and consistently in all eight kinds of capital. These investments must involve both governments and corporations. For example, while business capital is mainly the purview of the private sector, human capital is mainly the purview of the public sector. Governments too must take the lead in protecting natural capital, while civil society especially must promote social and cultural capital, including mutual understanding across cultures and nations. Infrastructure capital and innovation capital tend to be financed roughly equally by the public and private sectors. For example, governments tend to finance power transmission grids, while the private sector tends to finance power generation. Governments generally finance basic scientific research, while businesses focus on applied R&D.

Parallel to investing in the SDGs, the world needs to stop investing in activities that threaten planetary boundaries, destroy human and natural capital, and harm social cohesion. Curtailing the extraction and use of fossil fuels is of paramount importance. To curb harmful investments, regulatory measures, including fair and sustainable taxation and the dismantling of unsustainable subsidies, need to be an integral element of the SDG investment agenda.

In 2022, the United Nations Secretary-General appointed a High-Level Advisory Board on Effective Multilateralism, with a mandate to develop a list of concrete, actionable recommendations to improve international cooperation and advance the 2030 Agenda for Sustainable Development. The Board's 2023 report lists six areas for action that are directly aligned with the SDGs and SDSN's

recommendations: rebuilding trust in multilateralism, safeguarding our planet and its people, scaling up and improving the efficacy of global finance, improving data systems and their governance, and promoting peace.[13]

Failures (and some successes) of national SDG governance

The most important level of decision-making remains the nation-state. Nation-states hold the primary responsibility for achieving the SDGs. They are members of the United Nations and the signatories of United Nations treaties. They hold juridical responsibility for implementing treaty agreements and the rest of the United Nations architecture, including the United Nations Charter, the Universal Declaration of Human Rights, and the SDGs. National governments must ensure both the domestic implementation of the SDGs, including the reduction of negative spillovers, and international implementation by building a global governance and financial architecture that delivers the SDGs. Crucially, national government must also work with subnational governments to implement the SDG agenda at the local level, including sustainable urban infrastructure, delivery of social services, and ensuring safe communities.

Virtually all governments of the world have embraced the SDGs in principle. 188 of 193 UN Member States have submitted VNRs for comment by the other nations. Only five countries, notably the United States, Haiti, Myanmar, South Sudan, and Yemen, have never presented VNRs. Four of these countries are wracked by violence and poverty. The case of the United States stands as a glaring exception.

The Nordic countries and European Union have shown considerable support for the SDGs. So too have many developing countries in the G20. However, many governments of developing countries have made

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13. High-Level Advisory Board on Effective Multilateralism (HLAB), 2022. A Breakthrough for People and Planet: Effective and Inclusive Global Governance for Today and the Future, https://www. highleveladvisoryboard.org/breakthrough

Failures (and some successes) of national SDG governance

only low to moderate SDG commitments, although of course these countries have also not received the financing needed to support the Goals.[14] In many cases, national SDG strategies remain disconnected from core government policies and priorities. These are some of the findings of SDSN's annual (2023) survey on government efforts and commitments for the SDGs, which is conducted in close cooperation with our global network of experts and practitioners. Of 74 governments analyzed, we see large differences in terms of government efforts and commitments (see Part 3).

The greatest responsibility for achieving the SDGs and safeguarding the planetary boundaries lies with the G20 members. These countries represent more than 80% of global GDP, around 70% of the world's forests, more than 60% of the earth's population, and more than 50% of its landmass. The G20 countries account for 90% of global lignite and coal extraction and more than 60% of global oil and gas production.

The United States, as the world's biggest economy in terms of GDP at market prices and its biggest oil and gas producer, has a responsibility both to itself and to the rest of the world to immediately embark on an ambitious transformation towards the SDGs, as well as towards other global climate and biodiversity goals. With the 2022 Inflation Reduction Act, the Biden government announced its intention to reduce carbon emissions by roughly 40 percent from 2005 levels by 2030, although there are growing concerns that outcomes will lag behind these goals, due in part to the legislation's lack of an agreed national financing strategy other than tax credits. This and other policy measures fall short, however, of the scope and ambition of the SDGs. Overall, the United States has so far shown very little commitment to the SDGs. We call on the United States to formulate an SDG action plan and to present a VNR to the High-Level Political Forum.

The European Union – the world's second-largest economy and its major lignite producer – has produced the European Green Deal (EGD), which is exemplary in many regards. Many EU member states demonstrate a high or moderate SDG commitment. The EGD embraces an EU-wide set of goals, timelines to 2050, and financing strategies across major dimensions of the SDGs: energy decarbonization, climate resilience, circular economy (to cut pollution), sustainable agriculture (the "farm-to-fork" strategy), digital access, and innovation. EU-wide financial resources, notably the EU Recovery and Resilience Facility, were mobilized to support the EGD. The European Regional Development Fund, which provides the EU cohesion funds, is also directed towards the EGD. The Horizon Europe program and EU Missions in Horizon Europe catalyze the EU's efforts to stimulate innovation and identify concrete solutions for the EGD. However, the EGD and EU policies at large lack a comprehensive alignment to the SDGs, politically agreed targets for many SDG indicators, and clarity on how to achieve the SDGs.

The EU has also highlighted the strategic role of the private sector in achieving the SDGs, by implementing a new directive asking companies to publish sustainability reports and, in particular in the food sector, by promoting the "Code of Conduct on Responsible Food Business and Marketing Practices", a tool for setting out the actions that agri-food companies can voluntarily commit to in order to tangibly improve and communicate their sustainability performance. SDSN's Europe SDR emphasizes the importance of living up to the ambitions of the EGD and the SDGs, both inside the EU as well as in the EU's foreign actions, despite the multiple crises faced.[15] In July 2023, the EU is set to present its first Union-wide voluntary review at the United Nations. This presents a good opportunity for the EU to send a strong message to the international community, and to demonstrate its commitment to and leadership on the SDGs.

China, as the world's largest economy in purchasing-power-adjusted terms and its biggest coal producer, intends to implement the SDGs by integrating them into its medium and long-term national development strategies, such as its five-year plans. China has already presented two VNRs to the HLPF (2016 and 2021). The

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14. Lafortune, G., Fuller, G., Bermont Diaz, L., Kloke-Lesch, A., Koundouri, P., Riccaboni, A. (2022). *Achieving the SDGs: Europe's Compass in a Multipolar World. Europe Sustainable Development Report 2022*. SDSN and SDSN Europe. France: Paris. https://eu-dashboards.sdgindex.org

15. ibid.

14th five-year plan referred to the 2030 Agenda mainly in the context of international cooperation. Recently, China has reiterated its support for the SDGs, such as in greening its Belt and Road Initiative and launching the Global Development Initiative as a worldwide effort. A key measure for China will be the explicit integration of the SDGs' domestic and international implementation into the 15th five-year plan (2026–2030).

Some other G20 countries have shown weak commitments to the SDGs in recent years. Many of the poor performers, such as Brazil, recently elected new governments that have staked out a far more ambitious position vis-à-vis the SDGs. We urge all G20 governments to show the leadership required of them.

Most of the low-income and lower-middle income countries, home to more than the half of humanity, face major challenges in achieving most of the SDGs by 2030. Many of them lack an adequately high SDG commitment, and almost all lack access to the necessary financial means to implement the SDGs.

At the midpoint of the 2030 Agenda, all countries, poorer and richer alike, should use the half-way momentum to self-critically review and revise their national strategies, using the principles of the 2030 Agenda (transformative, integrated, inclusive, leaving no one behind) as a yardstick. Across the globe, we need to leave the comfort zones of political leaders and question the obstacles of outmoded ideologies, habits, and weak governance. We also need responsible business leadership leaving their comfort zone to establish SDG-compatible business models and appropriate business governance.[16]

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16. Leisinger, Klaus M. *Integrity in Business and Society*, CRT publications, Minneapolis, United States, December 2021.

Failures of global governance

Achieving the SDGs will require a transformative global approach. Yet current methods and mechanisms for implementing the Agenda largely reflect pre-2015 world realities and are far from meeting the universality and transformative ambition of the SDGs. Four basic failures stand out: First, implementation is largely left to the national level and on a voluntary basis, without effective multilateral enforcement mechanisms in place. Second, developed countries are not being held to account, neither for their adverse spillovers, nor for ensuring adequate flows of financing for sustainable development. Third, the rules governing trade and international finance are not geared towards the SDGs. For example, globalized trade rules for 'cleantech' could accelerate the energy transition and offer protections to workers, however such rules have not been negotiated or agreed upon. Unifying international business ecosystems could similarly improve industrial supply chains, particularly by leveraging artificial intelligence. And fourth, national governments typically lack 'vertical' coordination with subnational governments for SDG implementation.

Both the 2030 Agenda and the Paris Climate Agreement established mechanisms to encourage and monitor their implementation by nation-states. However, experience so far with VNRs and Nationally Determined Contributions (NDCs), respectively, demonstrate that these mechanisms – despite some progress – have not delivered the effort necessary to achieve global goals. Even the progress on consistent national reporting on SDG indicators is inadequate. There are no assessments or recommendations by the respective secretariats or decision-making bodies on the adequacy or further enhancement of national implementation, let alone measures of enforcement. This is especially important for those SDGs where national (non-)compliance has significant externalities for the global community and avoiding threats to the planetary boundaries. There are lessons to be learned from international agreements in other fields like trade, human rights, or international peace and security; these can be translated and refined to support sustainable development.

Failures of the global financial architecture

The "global financial architecture" (GFA) refers to the complex system of public and private finance that channels the world's saving to the world's investment. The GFA includes multilateral institutions (for example, IMF and World Bank), national and local budgets, public borrowing and debts, and private equity and debt financing. Financial institutions that intermediate savings and investment play a key role, including national and multilateral development banks (publicly owned banks that borrow from capital markets to on-lend funds to public and private entities), sovereign wealth funds, private-sector banks, insurance funds, pension funds, asset management funds, venture capital, credit rating agencies, and others.

The global financial architecture falls short in the following six ways:

1. Deep, chronic, and crippling under-investment in virtually all low-income countries (LICs) and lower-middle-income countries (LMICs). In 2022, Investment per person in the LICs averaged a meagre US$175 per person, compared with US$11,535 per person in the HICs. (Table 1.1). In fact, investment as a share of GDP was lower in the LICs (20.9%) than in all other income categories. The poor are consequently languishing in poverty.

2. Most LICs and LMICs (and many small-island developing states [SIDS], including those that are UMICs) lack the credit ratings to borrow on acceptable terms (Table 1.2)

3. LICs, LMICs, and SIDS are highly vulnerable to self-fulfilling liquidity crises and balance of payments crises, making it nearly impossible for these countries to implement a long-term sustainable investment strategy.

4. HICs are able to mobilize vast financial resources very quickly, as seen during the 2008 financial crisis, the pandemic, and the war in Ukraine. Yet they are not prepared to mobilize such resources for global sustainable development, despite the urgency and previous promises regarding development assistance and climate financing.

5. Private capital markets continue to direct large flows of private saving to unsustainable technologies and practices, delaying decarbonization of the world's energy system and underpinning destruction of the world's ecosystems.

6. International cooperation is trapped by bureaucratic institutional frameworks that reduce the speed, efficacy, and efficiency of funding to meet the SDGs, and that fail to provide the framework for large-scale SDG financing.

It is widely recognized that the world needs to overhaul the GFA. Such an overhaul should address the failures above and aim to achieve six objectives:

1. Greatly increase funding to national and subnational governments and private businesses in the emerging economies, especially the LICs and LMICs, to carry out the needed investments.

2. Revise the credit rating system and debt sustainability metrics to facilitate long-term sustainable development.

3. Revise liquidity structures for LICs, LMICs, and SIDS, especially regarding sovereign debts, to forestall self-fulfilling banking and balance-of-payments crises.

4. Create ambitious and internationally-agreed upon criteria for sustainable finance that are mandatory for all public financial institutions in HICs, MICs, and LICs alike.

5. Align private business investment flows in all countries with the SDGs, through improved national planning, regulation, reporting, and oversight.

6. Reform current institutional frameworks and develop new, innovative mechanisms to improve the quality and speed of deployment of international cooperation, and monitor progress in an open and timely manner.

Table 1.1

Global Population, Investment, and GDP by World
Bank Income Category (% of World Total)

	Population	Investment	GDP
LIC	8.0%	0.4%	0.5%
LMIC	43.2%	11.9%	10.7%
UMIC	32.7%	37.4%	28.5%
HIC	16.1%	50.3%	60.3%

Source: IMF World Economic Outlook, October 2022

Table 1.2

Credit Ratings by Income Category

	Number of UN Member States	Countries with a Moody's rating	Countries with an investment-grade rating	Countries with an investment-grade rating, %	Population with an investment-grade rating, %
LIC	28	9	0	0.0%	0.0%
LMIC	54	36	3	5.6%	52.8%
UMIC	52	40	10	19.2%	70.2%
HIC	59	52	45	76.3%	98.3%
WORLD	193	137	58	30.1%	60.5%

Source: Moody's and World Bank (2023)

SDSN's strategy to achieve the SDGs

Overhauling global governance mechanisms and the global financial architecture is fundamental to unlocking needed investments for sustainable development and ending non-sustainable practices. The GFA includes not only strictly financial mechanisms, but also public policies regarding budgets and regulation. Moreover, public policies must be pursued at all levels: globally through treaties such as the UNFCCC; regionally, such as through the European Union, the African Union, and Association of Southeast Asian Nations (ASEAN); nationally, through national plans and budgets; and

locally, at the provincial and city level, including through city networks. The GFA also requires alignment of the private sector with the SDGs, brought about through regulation, incentives (such as tax incentives or carbon pricing), and management practices.

The SDG policy agenda is complex. The SDGs call for lasting, long-term, directed change. For governments to combine the objectives of economic development, social inclusion, transparency, energy decarbonization, climate adaptation, water resources and sanitation, biodiversity conservation, digital access, gender equality, circular economy, over-harvesting, universal

SDSN's strategy to achieve the SDGs

health access and coverage, and universal (pre-primary, primary, and secondary) high-quality public education, is daunting. These challenges are far more complex than the typical aims of government. They are long-term, technology-based, and capital intensive, replete with technological and political uncertainties, inherently a blend of public and private actions, and in need of coordinated investments and planning with neighboring countries.

SDSN puts a great emphasis on long-term national planning, to coordinate public investments, regulations, and incentive structures over a time horizon of 20-30 years. Our special emphasis is on *pathway analysis* to help governments and business design long-term investment plans. For that reason, the SDSN first pioneered the concept of "Deep Decarbonization Pathways" in the lead-up to the Paris Agreement, to show governments how they could plan their energy investments during the time period 2015-2050. The SDSN's initiative contributed to the concept of Long-term Low-Emission Development Strategies (LEDS) built into the Paris Agreement (Article 4.19). All countries are to prepare and submit long-term LEDS for submission to the UNFCCC. SDSN also launched the Global Climate Hub to continue this work.[17] SDSN is also leading global efforts, in cooperation with the Food and Land Use (FOLU) Coalition and other partners, to define long-term sustainable food and land-use pathways via the Food, Agriculture, Biodiversity, Land-Use, and Energy (FABLE) Consortium.[18] SDSN has joined the Group on Earth Observations (GEO)[19] as a Participating Organization, supporting the efforts of this voluntary intergovernmental community to focus national, international, and private sector investments in Earth observations on urgent SDG needs.

Long-term investment plans are essential for national success in meeting the SDGs. SDSN has recommended six inter-related long-term transformations:[20]

1. Universal quality education and innovation-based economy

2. Universal health access and coverage

3. Zero-carbon energy systems

4. Sustainable ecosystems, sustainable agriculture, and climate resilience

5. Sustainable cities

6. Transformation to universal digital access and services

Each of these challenges will require large-scale public and private investments to mid-century, technological transformation, and a sound financing strategy. None can be solved by the private sector alone; indeed, governments will have to take the lead to design policy and financial frameworks within which business can profitably invest and innovate. The *Sustainable Development Report 2023* identifies five levers to be deployed to bring about the necessary transformations: governance, economy and finance, individual and collective action, science and technology, and capacity building. The development of financing strategies could be supported by using the methodology of integrated national financing frameworks, whichare already being developed in more than 80 countries globally.

Planning for the long term, however, illuminates the global financial architecture's Achilles heel. While the high-income countries (HICs) and upper-middle income countries (UMICs) can and should, in principle, finance these transformations via a combination of budget outlays, public-sector borrowing, and private financing (equity and debt), this is surely not true of the low-Income countries (LICs) and the lower middle-income countries

17. *SDSN Global Climate Hub.* Website. Accessed May 16, 2023. https://unsdsn.globalclimatehub.org.

18. Mosnier, A., Schmidt-Traub, G., Obersteiner, M. et al. How can diverse national food and land-use priorities be reconciled with global sustainability targets? Lessons from the FABLE initiative. *Sustain Sci* 18, 335–345 (2023). https://doi.org/10.1007/s11625-022-01227-7

19. *Earth Observations.* Available at: https://earthobservations.org

20. Sachs, J.D., Schmidt-Traub, G., Mazzucato, M. et al. Six Transformations to achieve the Sustainable Development Goals. *Nat Sustain* 2, 805–814 (2019). https://doi.org/10.1038/s41893-019-0352-9

(LMICs). Careful research by the SDSN and the International Monetary Fund has revealed the very large financing gap facing nations in the poorer half of the world.[21]

According to IMF estimates in 2019, the financing gap facing 57 low-income developing countries (LICs and LMICs that are eligible for IMF concessional financing) to cover very basic investments in health, education, power, roads, and water and sanitation was in the order of US$300 billion to US$500 billion per year.[22] Even the most basic economic needs are currently out of reach for roughly half the world. And these IMF estimates do not yet begin to include the full costs of energy decarbonization, climate adaptation, losses and damages from climate-related disasters, digital access, or urban infrastructure. Adding in these extra needs, the global SDG financing gap is perhaps US$1 trillion per year, or roughly 1% of gross world product (GWP) at market prices. As a rough rule of thumb based on work by SDSN and the IMF, the LICs need roughly 20% of their GDP in increased SDG investment outlays while the LMICs need roughly 10%, though precise amounts vary by country.

To make sure that existing financial resources and the required additional resources are used for sustainable investments, international finance institutions must fully incorporate achieving the SDGs and safeguarding the planetary boundaries into their core mandates, and monitor these regarding all countries, poorer and richer alike. Global infrastructure programs like China's Belt and Road, the EU's Global Gateway, or the United States' Build Back Better World initiatives must be much better aligned with the SDGs and coordinated with each other.

The urgent need for an SDG Stimulus

In his opening address to the UN General Assembly on September 20, 2022, UN Secretary-General António Guterres called on the G20 to launch an "SDG Stimulus" to offset the deteriorating market conditions faced by developing countries and to accelerate progress towards the SDGs and the Paris Climate Agreement.[23] SDSN provided the Secretariat of a High-Level Informal Working Group for the SDG Stimulus (HLIWG),[24] that made the case for an SDG Stimulus of an additional US$500 billion per year by 2025 of SDG finance. The SDG Stimulus plan recommended by the High-Level Working Group and introduced by SG Guterres last February[25] has five main components:

1. Increased funding from the Multilateral Development Banks (MDBs) and Public Development Banks (PDBs) to developing countries, linked to investments in the SDGs, a need echoed in the 2023 report of the High-Level Advisory Board on Effective Multilateralism[26]

2. Enhancement of the Debt Service Suspension Initiative (DSSI) and debt relief for countries facing debt distress

3. Expansion of liquidity by the International Monetary Fund (IMF) and major central banks

4. Empowerment and expansion of the specialized global funds

5. Expansion of private philanthropy, with focus on ultra-high net worth individuals

23. Guterres, A. *The Secretary-General: Address to the General Assembly*. New York, 20 September 2022. https://www.un.org/sg/en/content/sg/speeches/2022-09-20/secretary-generals-address-the-general-assembly

24. The High-Level Informal Working Group is co-convened by Ms. Amina Mohammed, Deputy Secretary-General of the United Nations and Professor Jeffrey Sachs, University Professor, Columbia University. Members: Dr. Amar Bhattacharya, Brookings; Mr. Navid Hanif, UN DESA; Dr. Homi Kharas, Brookings; Dr. Mahmoud Mohieldin, United Nations; Mr. Remy Rioux, AFD; Dr. Rajiv Shah, Rockefeller; Mr. Achim Steiner, UNDP.

25. United Nations Secretary-General. 2023. *SDG Stimulus To Deliver Agenda 2030*. https://www.un.org/sustainabledevelopment/wp-content/uploads/2023/02/SDG-Stimulus-to-Deliver-Agenda-2030.pdf

26. High-Level Advisory Board on Effective Multilateralism (HLAB), 2022. *A Breakthrough for People and Planet: Effective and Inclusive Global Governance for Today and the Future*, https://www.highleveladvisoryboard.org/breakthrough

21. Gaspar, Vitor et al. 2019. Fiscal Policy and Development: Human, Social, and Physical Investment for the SDGs. IMF Staff Discussion Note. https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2019/01/18/Fiscal-Policy-and-Development-Human-Socialand-Physical-Investments-for-the-SDGs-46444

22. ibid.

The urgent objective of the SDG Stimulus is to address – in practical terms and at scale – the chronic shortfall of international SDG financing facing the LICs and LMICs, and to ramp up financing flows by at least US$500 billion by 2025. The most important component of the stimulus plan is a massive expansion of loans by the multilateral development banks, backed by new rounds of paid-in capital by HIC members. Working together with the IMF and the MDBs, the emerging countries also need to strengthen their debt management and creditworthiness by integrating their borrowing policies with tax policies, export policies, and liquidity management, all to prevent future liquidity crises. The G20 Bali Leaders' Declaration noted another important point, which is the need to expand and enhance innovative financing mechanisms, including blended finance, as well as improving transparency and mutual accountability.

It is also vital to share fairly and globally the burden of financing for human-induced adaptation and losses and damages (L&D) among responsible countries, and to respond to the needs of vulnerable countries and small island developing states (SIDS).[27]

Enhanced global governance for the SDGs

The SDGs are not yet properly incorporated into global governance. Systems coherence, and ultimate success in meeting the SDGs, leads us to the following recommendations:

1. All United Nations agencies should put the SDGs at the centerpiece of their strategies, programs, and reporting.

2. The World Bank and the other MDBs should put the SDGs at the center of their financing strategies, performance reviews, and reporting.

3. The IMF should build its national reviews (Article IV), debt sustainability framework (DSF), and country programming around the public policies and financing needed for national success in achieving the SDGs.

4. The G20 should organize its financial cooperation, reporting, and metrics around the reform of the GFA, as needed to achieve the SDGs.

5. All UN Member States should present VNRs at least once every three years. It is especially urgent that the five countries that have not yet presented VNRs should do so no later than 2024.

6. United Nations agencies, multilateral organizations, and Member States need to increase investment in, and coordination of, national and international data and statistical systems and scientific capacity to assess SDG progress and support sustainable development decision making and investment, including disaggregated data by region, social stratification, and other criteria as helpful.

Regional cooperation and sustainable development

One of the consistent findings of the SDSN is that SDG success requires strong cooperation at the regional level. Neighboring countries share ecosystems (rivers, forests, fishing zones, wetlands) and must cooperate to protect them. Strong regional partnerships are needed to achieve regional objectives. The great seas, such as the Mediterranean Sea and the Black Sea, are under severe threat from chemical and plastics pollution, and must be protected by all countries whose rivers feed these seas. Moreover, regional cooperation is needed to promote technological and social innovations. For example, the Mediterranean region is a hot spot for climate change, threatened also by urbanization, economic pressures, and geo-political crises. Nonetheless, it is recognized as the birthplace of the "Mediterranean diet," with an

27. Sachs et al. 2021. The Decade of Action and Small Island Developing States: Measuring and addressing SIDS' vulnerabilities to accelerate SDG progress. https://irp.cdn-website.com/be6d1d56/files/uploaded/WP_MVI_Sachs%20Massa%20Marinescu%20Lafortune_FINAL_cVeeBVmKSKyYYS6OyiiH.pdf

agri-food sector with the potential to meet the increased demand for healthy, sustainable foods in the future.

Transport, zero-carbon power, and digital (fiberoptic) backbones depend on regional-scale grids. For all of these reasons and more, neighboring countries must cooperate deeply to build infrastructure and share data and knowledge, and to implement sustainable development policies. Regional international policies and agreements should be based on available scientific knowledge.

SDSN calls for, and is actively supporting, the development of similar regional-based sustainability plans with associated financing. SDSN is closely following and supporting the EU's endeavors to achieve the SDGs, *inter alia* by the EU's European Green Deal. The EU Green Deal has great potential to bring about transformation both within the EU and beyond, including the larger European and Mediterranean region, and even Africa. SDSN is working with the ASEAN Secretariat and member states to help develop the ASEAN Green Deal, introduced in 2022 under the ASEAN Presidency of Cambodia. SDSN is supporting the African Development Bank to develop a strategic plan to accelerate Africa's sustainable development, with the aim of the African Union achieving high-income status and sustainable development by 2063, the 100th anniversary of the Organization of African Unity. SDSN is working with the Amazon Basin nations, through the Scientific Panel of the Amazon, to develop a regional strategy for the conservation and sustainable development of the Amazon. In that capacity, the SDSN is also supporting new partnerships between the rainforest countries of the Amazon Basin, the Congo Basin, and Southeast Asia for a global financing mechanism to protect all three tropical rainforest regions. Protection and sustainable management of rainforest ecosystems through related standardization will support their impact assessment on a global basis.

The sub-national level

Provincial, metropolitan, and city governments are typically at the front line in achieving the SDGs. Nearly 60 percent of the world population now lives in urban areas, and that proportion is likely to rise to at least 70 percent, and probably higher, by mid-century. Moreover, cities constitute at least 85 percent of total world output and energy use. What happens in cities will determine the future of the world, and the success or failure in sustainable development.

Local governments have the front-line responsibility for implementing universal health systems, places in school for all children, safe water and sanitation, public transport services, adequate housing, and physical safety in the local environment (from crime, toxic wastes, and natural hazards). This is why mayors and city councils around the world have rallied to the SDGs, even if their local leadership is sometimes under-appreciated and under-noted because national governments tend to hold the limelight at the United Nations, with the MDBs, and in the media.

Cities face one other chronic problem. While they are largely responsible for service delivery, it is national governments that, by and large, collect revenue to fund public investments and social services. Cities are therefore caught between front-line responsibility and back-of-the-line access to the necessary public financing.

SDSN recognizes this gap in the practical means of implementation of city governments, and is currently working with the major urban think tanks and global urban networks (including the C40 and ICLEI) to address the challenge of sub-national financing of the SDGs. This initiative will be launched in Paris in during the June Summit for a New Global Financial Pact.

Global peace as the prerequisite for sustainable development

SDG 16 recognizes the vital role of peaceful and inclusive societies, and SDG 17 underscores the need for global outreach and cooperation to achieve the Goals. Peace and global cooperation must not become mere slogans. They are ever more vital to human survival in an age when both nuclear weapons and environmental devastation threaten the very survival of humanity. We recall in this context the powerful truth spoken by United States President John F. Kennedy more than 60 years ago, when he declared, "The world is very different now. For man holds in his mortal hands the power to abolish all forms of human poverty and all forms of human life." Peace and global cooperation mean nothing less and nothing more than choosing the end of human poverty over the end of human life.

We take note of the dire warning of the Bulletin of Atomic Scientists, which recently moved the hands of its Doomsday Clock to just 90 seconds from midnight, the closest to Armageddon in the Clock's 76-year history; "largely (though not exclusively) because of the mounting dangers of the war in Ukraine." We commend global leaders who "oppose the use of or the threat to use nuclear weapons"[28] and urge all sides to follow this call.

Had the negotiations underway in March 2022 between Russia and Ukraine been successfully concluded, countless lives would have been saved and the devastation of Ukraine's cities would have been spared. The world would have escaped the current tumult of soaring food and energy prices and other financial dislocations. We would not be even closer to nuclear Armageddon.

International relations scholars have powerfully described the "tragedy" of great power conflict. They warn that the jostling for power – or hegemonic domination – ends in tragic wars. We cannot afford such a tragedy in our world today. The world is indeed very different now, as we live under the threat of nuclear war, and even nuclear annihilation. We need not only technological know-how, but also diplomatic know-how, to respect global diversity and to settle international disputes peacefully.

The continuing efforts of the SDSN

The SDSN was created in 2012, soon after the Rio+20 Summit which mobilized the world's universities, think tanks, and national laboratories on behalf of the SDGs. SDSN's mission was fourfold: scholarly research, educational innovation, and partnerships, convening power, and outreach to the public. We are proud of our efforts since 2012 in these four areas.

The SDSN is now a global network of more than 1,900 member organizations, mainly universities, organized in 53 national and regional chapters. The SDSN convenes global university leadership on behalf of shared activities to support sustainable development. In 2022, hundreds of university presidents brainstormed and shared best practices in aligning their institutions with the SDGs. SDSN membership continues to grow rapidly, and new national and regional chapters are regularly launched.

We aim to ensure that institutions of higher learning and public policy research centres in all 193 UN Member States are actively part of the SDSN. The SDSN's flagship educational initiative, the SDG Academy, directly reaches hundreds of thousands of learners each year, with an expanding provision of free, world-class educational offerings. In 2023, the SDSN is working with universities around the world to launch further low-cost master's degrees in sustainable development, in an effort to dramatically increase the number of students reached each year.

SDSN is working closely with the UNESCO SDG 4 High-Level Steering Committee on these two major issues, via Mission 4.7 through an SDG Academy Partnership with the Open Education Resources Recommendation team at UNESCO.[29] The International Commission on the Futures of Education recognizes that open education resources are essential for supporting students, educators, and young professionals on their education for sustainable development (ESD) journeys.[30] The UNESCO Recommendation on open education resources was endorsed by all Member States in November 2019. In September 2022, at the

28. Xinhua. 2022. Xi meets German Chancellor Olaf Scholz. https://english. news.cn/20221104/f544bca38c33443186d3de8b3d0a9a27/c.html

29. *Mission 4.7.* Available from: https://www.mission4point7.org

30. UNESCO, *Futures of Education,* International Commission. Available from: https://en.unesco.org/futuresofeducation/international-commission

Transforming Education Summit in New York, the United Nations Secretary-General announced a number of global initiatives. One of them is the International Financing Facility for Education.[31] Another is the Gateways to Public Digital Learning project[32] to ensure equitable access to and resources for digital learning.

The SDG Academy[33] is also building partnerships around professional training to upskill employees and make them future-ready for implementing the SDGs and Paris Agreement. Ideally, at every stage of life, individuals should understand how they coexist in harmony with people and the planet. We may not wish to harm people, or our common home, but all of us must "go back to school" and learn how to create positive linkages to people and nature in everyday activities, at home and at work. SDSN will endeavor to support professional training and lifelong learning across all sectors.

Another key dimension of the SDSN's work is supporting governments, at all levels, to understand the implications of policy choices and to make evidence-based and forward-looking decisions. SDSN engages in a wide range of intergovernmental processes, including the G20, G7, UNFCCC, CBD meetings, and World Health Assembly. These fora are critical to encourage international collaboration, promote peace, and implement the recommendations contained within this document, in particular on SDG finance. SDSN remains at the disposal of all stakeholders to analyze pathways and scenarios, and to leverage knowledge to make sound decisions.

All UN Member States and United Nations agencies can count on the continued efforts and energies of the SDSN around the world to support all governments, businesses, and civil society to embrace and align with the SDGs on sustainable development.

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31. Guterres, A. Secretary-General's remarks to the Press on the International Finance Facility for Education [as delivered], 17 September 2022. https://www.un.org/sg/en/content/sg/press-encounter/2022-09-17/secretary-generals-remarks-the-press-the-international-finance-facility-for-education-delivered

32. United Nations, *Gateways to Public Digital Learning*, 19 September 2022. https://www.un.org/en/transforming-education-summit/gateways-public-digital-learning

33. SDG Academy. Available from: https://sdgacademy.org

Sustainable development to 2030 and 2050

The tasks of sustainable development – ensuring material human well-being and security, social inclusion and justice, environmental sustainability, and global cooperation to secure peace and sustainable development – are not just tasks to 2030. They are the preeminent tasks of the coming generations, enshrined in several documents including the *2030 Agenda* (2015) and UNESCO's *Declaration on the Responsibilities of the Present Generations Towards Future Generations* (1997). They are the work of the 21st century.

We conclude by underscoring the vital, life-affirming importance of four key international agreements: the Sustainable Development Goals, the Paris Climate Agreement, the Kunming-Montreal Framework for Biodiversity, and the High Seas Treaty. These are signal achievements of humanity, to have come together across all nations to adopt a common set of challenges. As we have emphasized in this statement, our major challenge today is matching these soaring ambitions with the means to achieve them, most importantly, the financial resources and regulatory conditions for the investments needed to achieve these goals.

At the mid-point of the SDG agenda, we are far off target. Yet we have gained ground. Almost all governments have committed to adopting SDG-based action plans; technologies have advanced that can support the goals (such as green energy, green transactions, green jobs, Earth observations, and artificial intelligence); and there is growing regional cooperation to achieve the goals on the ground, through shared investments, knowledge, and policies.

Achieving the SDGs requires more than "normal politics". Governments are only now learning how to design integrated strategies that address economic, social, and environmental objectives in tandem. Governments are only now mapping out pathways to mid-century to meet crucial energy, healthcare, and education objectives, among others. Governments are only now establishing R&D funds to promote breakthroughs in key technologies that will expand their power and

reduce their costs. Governments are only now building the digital platforms and data networks that integrated strategies will depend on. And governments are only now, many years late, turning their attention to the chronic and deep shortcomings of the GFA.

Sustainable human development is a multi-dimensional process. The balance between the ecological, economic, social, and cultural spheres, together with political, ethical, and cultural aspects, must be nurtured. Open sharing of data and knowledge across these dimensions is essential to building trust and cooperation. People of good will must choose and act coherently in their private and in their professional lives to further the common good.

For these reasons, we end our message with two urgent and timely calls for action:

First, that UN Member States, at the 2023 SDG Summit and the 2024 Summit of the Future, recommit boldly, strongly, and proactively to the SDGs, accelerate progress to 2030, and adopt even more ambitious SDG targets and objectives to mid-century, also incorporating recent international agreements on oceans and biodiversity. As the aims of the 2030 Agenda are ever-evolving, and linked to many processes, we call on academia, civil society, and business to develop proposals on how this agenda can be enhanced and enforced in the decade(s) to come.

Second, UN Member States, starting with the G20 meeting this September in India, should adopt an SDG Stimulus to accelerate progress towards the SDGs by 2030 and enhance global governance for enforcing the implementation of the SDGs by all countries.

2

The SDG Index
and Dashboards

Part 2
The SDG Index and Dashboards

The SDG Index and Dashboards track the annual progress of all 193 UN Member States towards the SDGs (Box 2.1). At the midpoint of the 2030 Agenda, however, the SDGs are far off track. Despite the world improving on average half a point per year on the SDG Index between 2015 and 2019 (which was already too slow) progress has stalled since the outbreak of the pandemic and the onset of other overlapping crises. And while most high-income countries (HICs) were able to mitigate the socioeconomic impacts of these multiple crises through automatic stabilizers, emergency expenditures, and recovery plans, there has been limited progress on environmental and biodiversity goals, including SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), SDG 14 (Life Below Water) and SDG 15 (Life on Land), including in countries that are largely responsible for the climate and biodiversity crises. The disruptions caused by these multiple crises also aggravated fiscal-space issues in low-income and lower-middle-income countries (LICs and LMICs), leading to a reversal in progress on several related goals and indicators.

2.1 SDG Status at the midpoint of the 2030 Agenda

Based on the pace of progress since 2015, none of the goals is on track to be achieved globally by 2030. Figure 2.1 provides a summary of the population-weighted world average performance by goal. Those related to hunger, sustainable diets, and health outcomes are particularly off-track, as are the goals concerning terrestrial and marine biodiversity, urban pollution, housing, strong institutions, and peaceful societies. Although on average the world has made some progress in strengthening access to key infrastructure, covered notably under SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy) and SDG 9 (Industry, Innovation and Infrastructure), this varies extensively across countries, and the world average remains too slow to achieve these SDGs globally by 2030. The education dashboard focuses on access to pre-primary and primary education, as well as on lower-secondary completion rates. Due to limited data availability at the global level, it does not track the quality of education, equity in learning outcomes, or lifelong learning. The dashboard for SDG 12 (Responsible Consumption and Production) focuses on production-based nitrogen emissions, imported nitrogen emissions, and export of plastic waste, however we lack time series for several other indicators for this goal. Country-level information and regional averages are available in the country profiles.

We estimate that on average only around 18 percent of the SDG targets are on track to be achieved globally by 2030. These are notably related to basic health outcomes, such as neonatal mortality and under-5 mortality rates, as well as access to basic infrastructure and services – such as targets on mobile use, internet use, and the share of adults with a bank account. Other recent findings at the global and regional levels similarly suggest that less than 20 percent of the SDG targets are on track (United Nations 2023; UNECE 2023).

> ### Box 2.1 The SDG Index and Dashboards
>
> The SDG Index is an assessment of each country's overall performance on the 17 SDGs, giving equal weight to each Goal. The score signifies a country's position between the worst possible outcome (score of 0) and the target (score of 100). The dashboard and trend arrows help identify priorities for further actions and indicate whether countries are on track or off track to achieve the goals and targets by 2030, based on latest trend data. The 2023 SDG Index edition includes 97 global indicators. Two-thirds of the data come from official statistics (typically United Nations custodian agencies) with one third from non-traditional statistics, including research centers, universities, and non-governmental organizations. Published since 2015, the SDG Index and Dashboards has been peer-reviewed and the global edition has been statistically audited by the European Commission in 2019 (Schmidt-Traub et al. 2017; Papadimitriou, Neves, and Becker 2019). More detailed information is available in the Methods Annex, in the detailed methodology paper (Lafortune et al. 2018), and on our website (www.sdgtransformationcenter.org and www.sdgindex.org).

Figure 2.1

World SDG Dashboard at the midpoint of the 2030 Agenda

Major challenges	Significant challenges	Challenges remain · SDG achieved
Decreasing	Stagnating	Moderately improving · On track or maintaining SDG achievement

Source: Authors' analysis

Figure 2.2

Status on individual SDG targets at the midpoint of the 2030 Agenda

Reversal in progress 15%

Achieved or on track 18%

Limited or no progress 67%
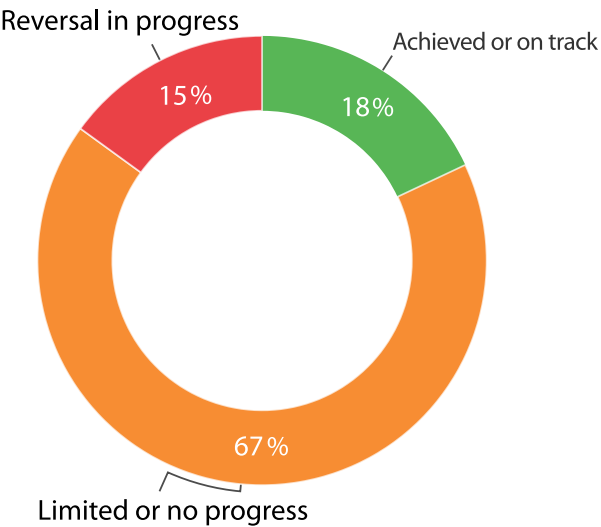
Source: Authors' analysis

Table 2.1

The world's top five countries in terms of SDG targets achieved or on track, and those with the greatest percentage of targets showing a reversal in progress

The 5 countries with the largest number of targets achieved or on track	The 5 countries with the largest number of targets showing reversal in progress
Denmark	Myanmar
Czechia	Venezuela, RB
Estonia	Papua New Guinea
Latvia	Yemen, Rep.
Slovak Republic	Lebanon

Source: Authors' analysis

Figure 2.3
The 2023 SDG Index: score and rank

Rank	Country	Score	Rank	Country	Score
1	Finland	86.8	45	Kyrgyz Republic	74.4
2	Sweden	86.0	46	Cuba	74.1
3	Denmark	85.7	47	Bosnia and Herzegovina	74.0
4	Germany	83.4	48	Israel	74.0
5	Austria	82.3	49	Russian Federation	73.8
6	France	82.0	50	Brazil	73.7
7	Norway	82.0	51	Argentina	73.7
8	Czechia	81.9	52	Costa Rica	73.6
9	Poland	81.8	53	Azerbaijan	73.5
10	Estonia	81.7	54	Albania	73.5
11	United Kingdom	81.7	55	Vietnam	73.3
12	Croatia	81.5	56	Armenia	73.3
13	Slovenia	81.0	57	Fiji	72.9
14	Latvia	80.7	58	Tunisia	72.5
15	Switzerland	80.5	59	Cyprus	72.5
16	Spain	80.4	60	North Macedonia	72.5
17	Ireland	80.1	61	Bhutan	72.3
18	Portugal	80.0	62	Dominican Republic	72.1
19	Belgium	79.5	63	China	72.0
20	Netherlands	79.4	64	Singapore	71.8
21	Japan	79.4	65	Peru	71.7
22	Hungary	79.4	66	Kazakhstan	71.6
23	Slovak Republic	79.1	67	Montenegro	71.4
24	Italy	78.8	68	Maldives	71.3
25	Moldova	78.6	69	Uzbekistan	71.1
26	Canada	78.5	70	Morocco	70.9
27	New Zealand	78.4	71	Algeria	70.8
28	Greece	78.4	72	Türkiye	70.8
29	Iceland	78.3	73	El Salvador	70.7
30	Chile	78.2	74	Ecuador	70.4
31	Korea, Rep.	78.1	75	Indonesia	70.2
32	Uruguay	77.7	76	Colombia	70.1
33	Luxembourg	77.6	77	Jordan	69.9
34	Belarus	77.5	78	Malaysia	69.8
35	Romania	77.5	79	United Arab Emirates	69.7
36	Serbia	77.3	80	Mexico	69.7
37	Lithuania	76.8	81	Egypt, Arab Rep.	69.6
38	Ukraine*	76.5	82	Jamaica	69.6
39	United States	75.9	83	Sri Lanka	69.4
40	Australia	75.9	84	Barbados	69.4
41	Malta	75.5	85	Tajikistan	69.2
42	Georgia	75.0	86	Iran, Islamic Rep.	69.1
43	Thailand	74.7	87	Bolivia	68.9
44	Bulgaria	74.6	88	Paraguay	68.8

Figure 2.3.
(Continued)

Rank	Country	Score	Rank	Country	Score
89	Cabo Verde	68.8	128	Pakistan	59.0
90	Oman	68.6	129	Gambia, The	58.3
91	Turkmenistan	68.5	130	Syrian Arab Republic	58.2
92	Suriname	68.2	131	Mali	58.0
93	Mauritius	68.0	132	Eswatini	57.9
94	Saudi Arabia	67.7	133	Mauritania	57.2
95	Lebanon	67.5	134	Tanzania	56.8
96	Guyana	67.4	135	Malawi	56.3
97	Panama	67.3	136	Togo	56.3
98	Philippines	67.1	137	Sierra Leone	55.7
99	Nepal	66.5	138	Zimbabwe	55.6
100	Qatar	66.2	139	Cameroon	55.1
101	Bangladesh	65.9	140	Benin	55.1
102	Brunei Darussalam	65.7	141	Uganda	55.0
103	Cambodia	64.8	142	Guinea	54.9
104	Nicaragua	64.8	143	Lesotho	54.9
105	Iraq	64.8	144	Ethiopia	54.5
106	Mongolia	64.7	145	Zambia	54.3
107	Belize	64.6	146	Nigeria	54.3
108	Kuwait	64.4	147	Burundi	53.9
109	Namibia	64.3	148	Papua New Guinea	53.6
110	South Africa	64.0	149	Mozambique	52.7
111	Bahrain	63.7	150	Djibouti	52.7
112	India	63.4	151	Congo, Rep.	52.6
113	Gabon	63.1	152	Haiti	52.6
114	Trinidad and Tobago	63.0	153	Burkina Faso	52.4
115	Lao PDR	63.0	154	Comoros	51.7
116	Honduras	62.9	155	Angola	50.8
117	Venezuela, RB	62.9	156	Madagascar	50.3
118	Botswana	62.7	157	Liberia	49.9
119	Sao Tome and Principe	62.7	158	Afghanistan	49.0
120	Cote d'Ivoire	62.3	159	Congo, Dem. Rep.	48.6
121	Senegal	61.8	160	Sudan	48.6
122	Ghana	61.8	161	Niger	48.3
123	Kenya	60.9	162	Somalia	48.0
124	Bahamas, The	60.9	163	Yemen, Rep.	46.8
125	Myanmar	60.4	164	Chad	45.3
126	Rwanda	60.2	165	Central African Republic	40.4
127	Guatemala	59.4	166	South Sudan	38.7

* The data for Ukraine correspond to the situation prior to February 2022, as many data points have not been updated since then.

Source: Authors' analysis

There is significant variation in progress by regions and income groups. Overall, European countries top the SDG Index and are also on track to achieving more targets than any other region. Denmark, Czechia, Estonia, Latvia, and the Slovak Republic are the five countries that have achieved, or are on track to achieving, the largest number of SDG targets. By contrast, Lebanon, Yemen, Papua New Guinea, Venezuela, and Myanmar present the largest number of SDG targets for which there has been a reversal in progress.

Overall, Finland tops the 2023 SDG Index, followed by Sweden and Denmark. All top 20 countries on the SDG Index are in Europe, most of them European Union member states. Yet none of these countries obtains a perfect score. The dashboards presented in section 2.4 illustrate that even the highest-performing countries on the SDG Index still face major challenges in achieving several SDGs, especially those related to climate, biodiversity, and sustainable diets and food systems. As detailed in the *Europe Sustainable Development Report 2022*, trends on several leave-no-one-behind indicators are not heading in the right direction in many EU member states (Lafortune et al. 2022).

Chad, Central African Republic, and South Sudan obtain the lowest 2023 SDG Index scores. As a result of missing data, we were unable to compute SDG Index scores for many Small Island Developing States (SIDS), although their country profiles provide an overview of their performance by goals and targets, and highlight where data are missing for these countries.

2.2 Leave no one behind

Multiple and overlapping health and geopolitical crises have led to stagnation in SDG progress globally since 2020. At the global level, the SDG Index has stalled since 2020 – and in 2022 is one full point below the projected level based on pre-pandemic trends (Figure 2.4). In LICs, the preliminary estimated average SDG Index score for 2022 is lower than it was for 2021, a shift driven partly by estimated declines in life satisfaction and feelings of safety (Figure 2.5). Extreme poverty rates in LICs remain above pre-pandemic levels, while the percentage of surviving infants who have received 2 WHO-recommended vaccines has dropped significantly (Figures 2.6 and 2.7). In HICs and LICs, the pandemic and other crises have led to substantial declines in subjective well-being, which remains below pre-pandemic levels (Figure 2.8). Unemployment rates in both HICs and LICs is above pre-pandemic levels, although it has increased much more in LICs (Figure 2.9). From a simple linear projection of past growth rates, the gap between SDG outcomes in HICs and in LICs is expected to be greater in 2030 than it was in 2015. This is in sharp contrast to the pre-pandemic trend, where there was some convergence in SDG outcomes (Figure 2.10).

Figure 2.4

SDG Index World Average, 2010-2022
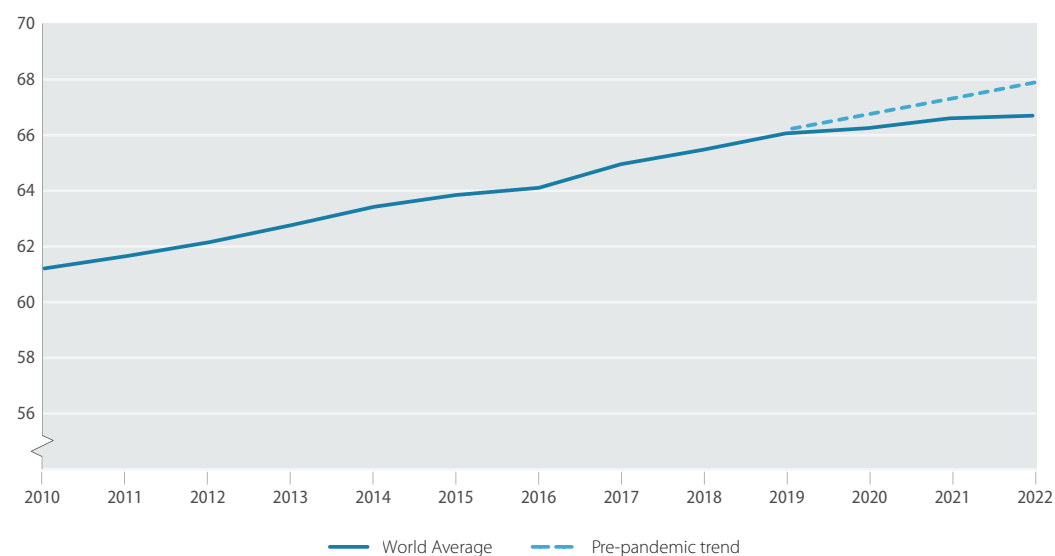
Note: Projected trend based on an extrapolation of the annual growth rate of the SDG Index over the period 2015-2019 (pre pandemic).
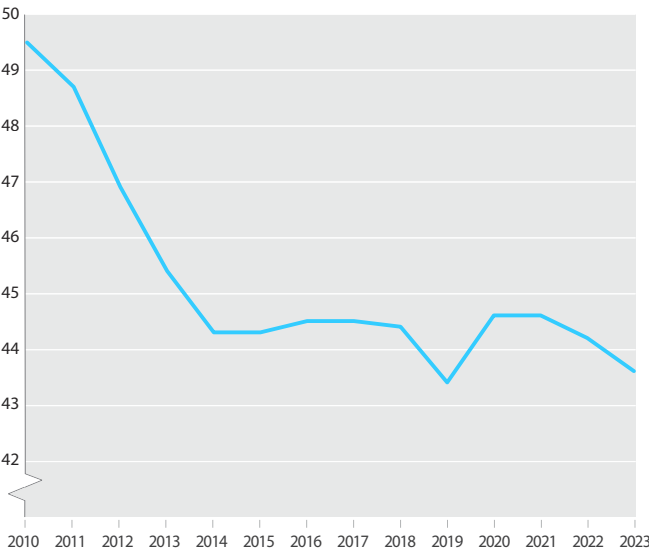*Source:* Authors' analysis

Figure 2.5

SDG Index Low-Income Countries' Average, 2010-2022
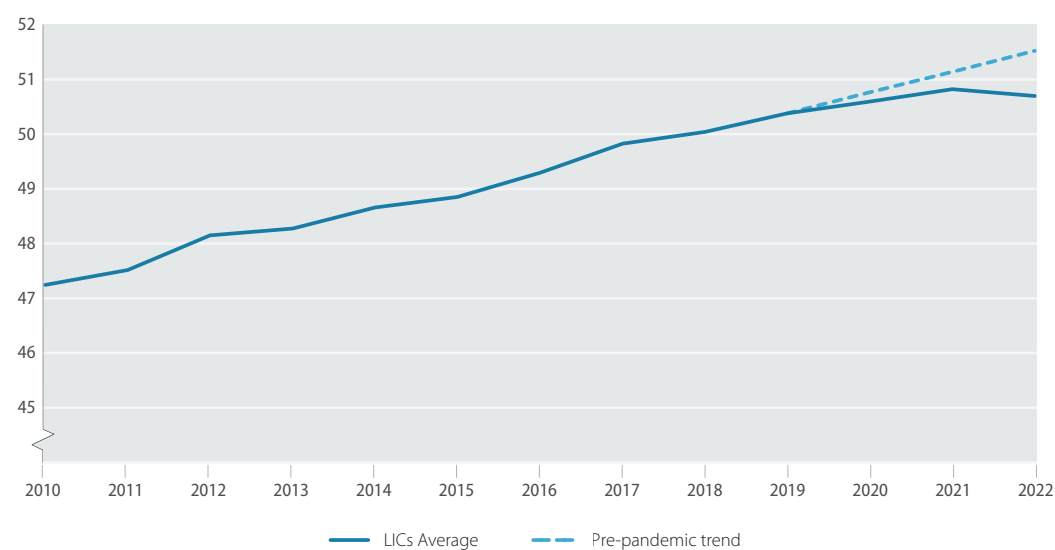
Note: Projected trend based on an extrapolation of the annual growth rate of the SDG Index over the period 2015-2019 (pre pandemic).
Source: Authors' analysis

Figure 2.6

Poverty headcount ratio at $2.15/day (PPP, %) in LICs

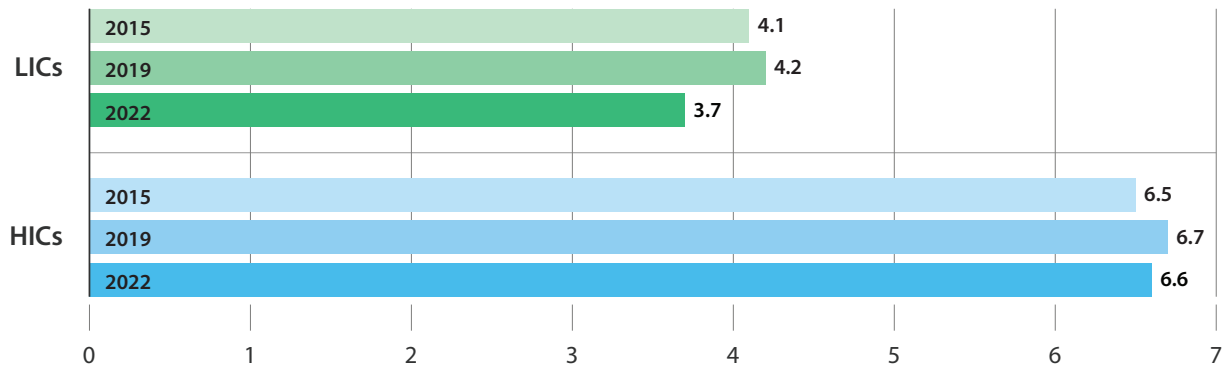*Source:* Authors, based on World Poverty Clock

Figure 2.7

Surviving infants who received 2 WHO-recommended vaccines (%), in LICs
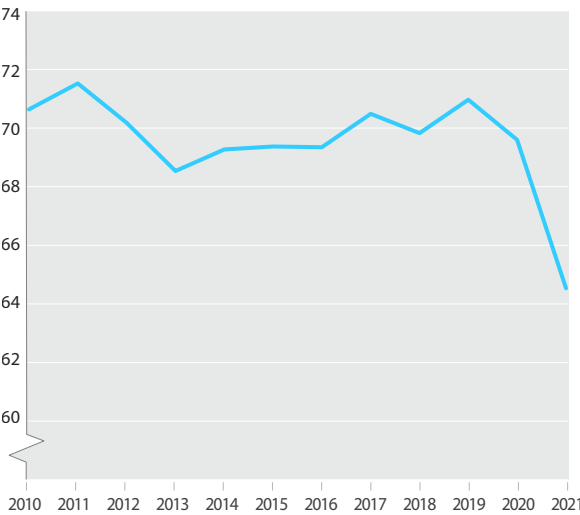
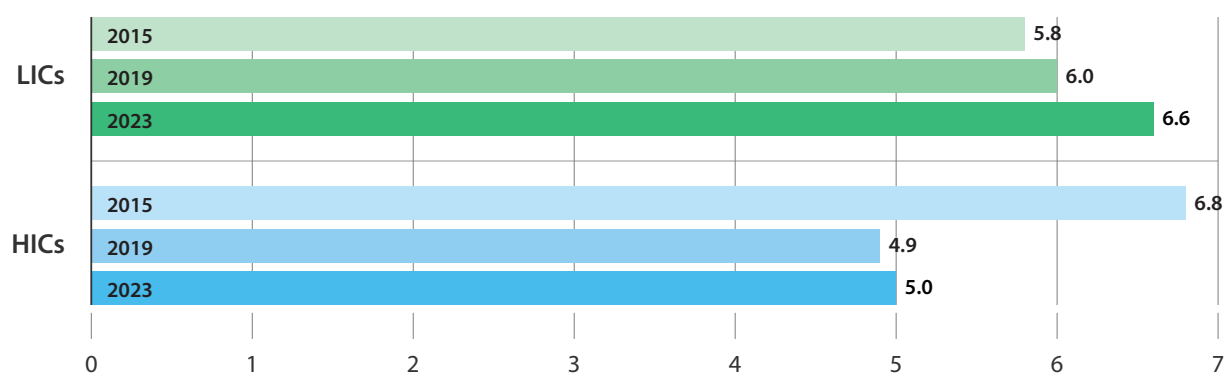*Source:* Authors, based on WHO and UNICEF

Figure 2.8

Subjective Well-Being, in HICs and LICs

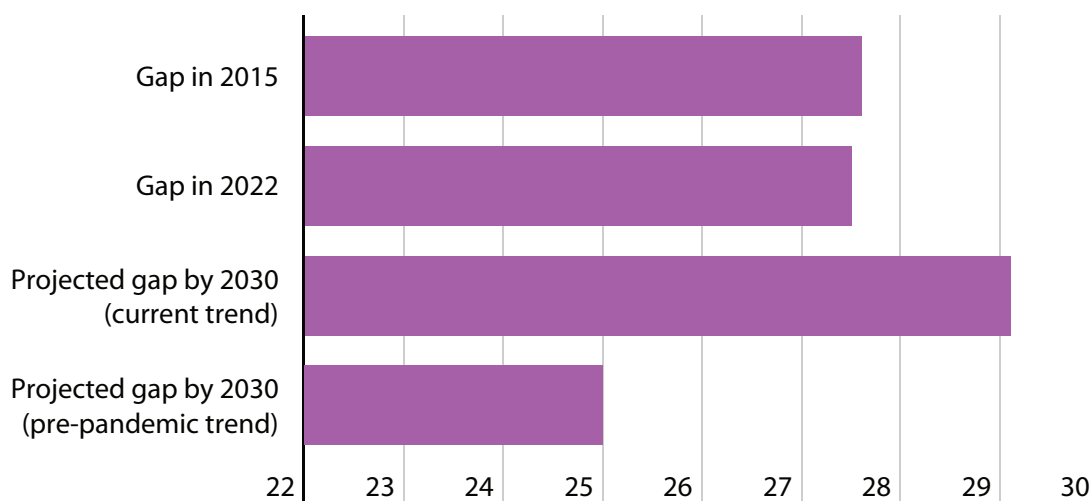*Source:* Authors, based on Gallup World Poll

Figure 2.9
Unemployment Rate, in HICs and LICs

Source: Authors, based on ILO

Figure 2.10
Observed and projected gaps in SDG Index score between HICs and LICs

Note: Projected gap based on extrapolation of annual growth rate on the SDG Index over the period 2019-2021.
Pre-pandemic gap is based on an extrapolation of SDG Index annual growth rates over the period 2015-2019.
Source: Authors' analysis

Above all, the SDGs represent an investment agenda: to develop physical infrastructure (including renewable energy, electrification, broadband access, public transport) and human capital (health, education, social protection). Yet many LICs and LMICs face major fiscal-space constraints that represent significant barriers to investing in the SDGs, and which the COVID-19 pandemic and other international crises have aggravated. The dashboards highlight persisting gaps between LICs, LMICs, and HICs in access to physical infrastructure and human capital. As one example, this year's SDG Index includes a new indicator related to access to all-season roads, based on geospatial information. Figure 2.11 presents the 11 countries in which less than 50 percent of the rural population has access to all-season roads, and shows the gap between the world average and that of the HICs.

2.3 International spillovers and policy coherence

The climate and biodiversity crises are driven by domestic action, but they are also impacted by activities that extend beyond national borders: through trade and other cross-border activities. In addition to environmental spillovers, which are driven by international trade and domestic policies, countries also generate economic, financial, social, and security spillovers. These spillover effects are captured in the SDG Index.

Figure 2.11

Countries where 50% or more of the rural population has no access to all-season roads, and comparison with HICs and World average (%)

Proportion of the rural population that lives within 2 km of an all-season road

— HICs average   — World average
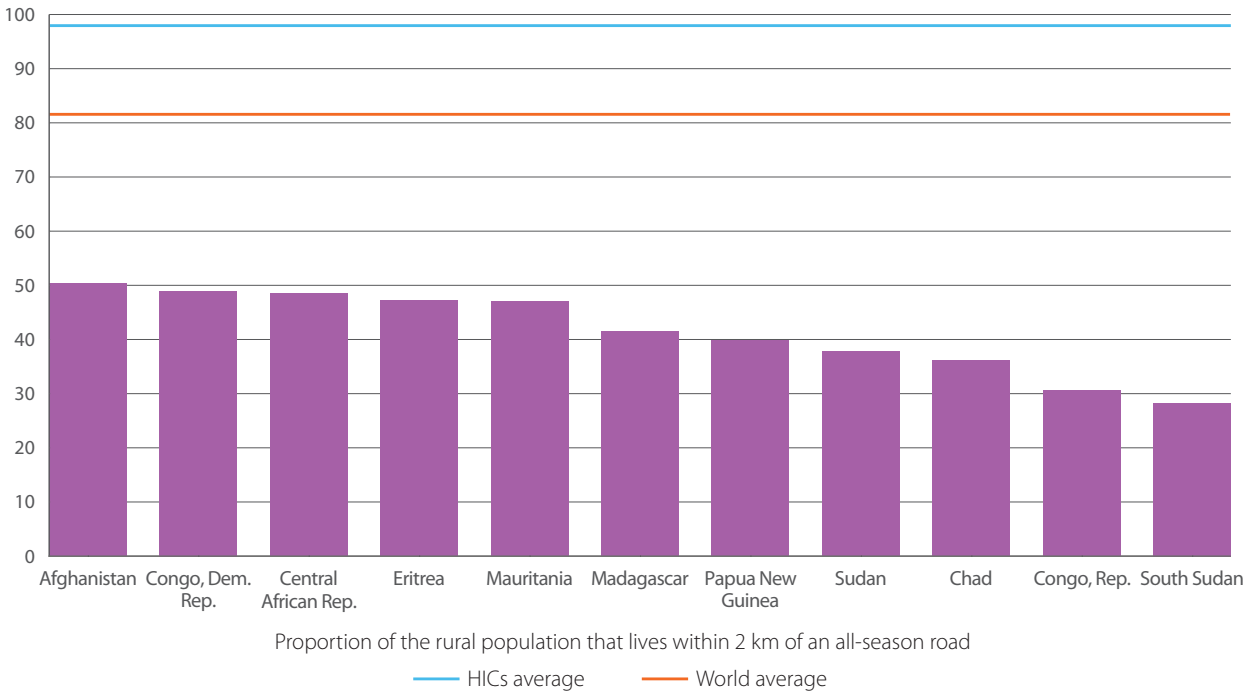
Note: Proportion of the rural population that lives within 2 km of an all-season road. An all-season road is one that is motorable throughout the year but may be temporarily unavailable during inclement weather. New indicator included in the SDG Index building on geospatial information. SDSN methodology, based on Workman, R. & McPherson, K., TRL (2019). The averages for HICs and the World are weighted by population.
Source: Authors' analysis

Figure 2.12

SDG Index scores versus International Spillover Index scores, by income level

SDG Index 2023 · International Spillover Index 2023
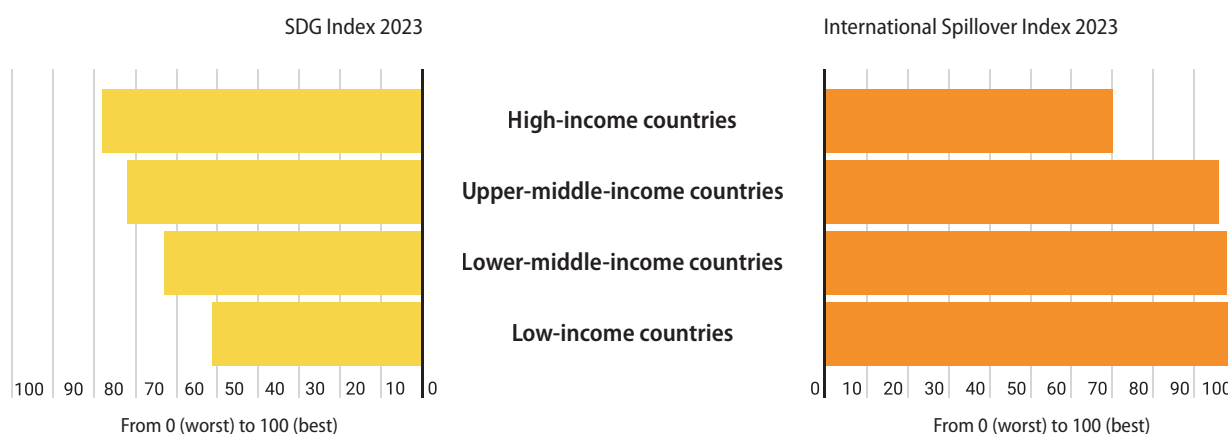
Note: The list of 13 indicators included in this year's International Spillover Index is accessible online.
Source: Authors' analysis

The 2030 Agenda and the SDGs recognize the importance of international spillovers in several crucial ways. SDG 17 (Partnerships for the Goals) calls for 'policy coherence' for sustainable development, SDG 12 (Responsible Consumption and Production) stresses the need for more sustainable production and consumption, and SDG 8 (Decent Work and Economic Growth) demands the eradication of child labor and modern slavery. The SDSN, working with partners, has from the start incorporated international spillovers in our assessment of countries' progress towards the SDGs. This can explain certain differences in SDG Index results compared with those of other SDG monitoring instruments (Lafortune et al. 2020).

Overall, HICs tend to generate the largest negative spillovers, due to unsustainable consumption, financial secrecy, and the presence of tax havens. Spillover indicators are included in calculating the SDG Index and individual goal scores and dashboards, and are also aggregated in a stand-alone international spillover index. Figure 2.12 compares international spillover index results by income level. This year, we included an additional indicator that tracks cases of modern slavery embodied in international supply chains, building on a study published in 2022 (Malik et al. 2022). Major updates

to indicators related to financial secrecy have also been integrated, building notably on the work of the Tax Justice Network.

Environmental spillovers are driven to a large extent by inadequate pricing of environmental externalities, particularly natural capital. One step in the right direction is the growing adoption of the System of Environmental-Economic Accounting (SEEA) – an international statistical standard for natural capital accounting (UN DESA 2022). A second major driver of such spillovers is the fact that countries design their national policies to meet national objectives that may not incorporate the need to reduce spillovers and to safeguard the global commons. This makes environmental spillovers hard to address. SDG 17 (Partnerships for the Goals) calls on all countries to enhance policy coherence for sustainable development (PCSD), yet we still lack a robust and comparable headline indicator of countries' efforts to implement PCSD, despite the efforts of UNEP and the OECD to develop a methodology (UNEP and OECD 2022). A recent analysis led by SYSTEMIQ, the University of Tokyo, and SDSN identifies four major national policy levers to curb international spillovers: target setting, public management, regulation, and fiscal policy and financing.

Figure 2.13
Illustration of environmental impacts embodied in international trade
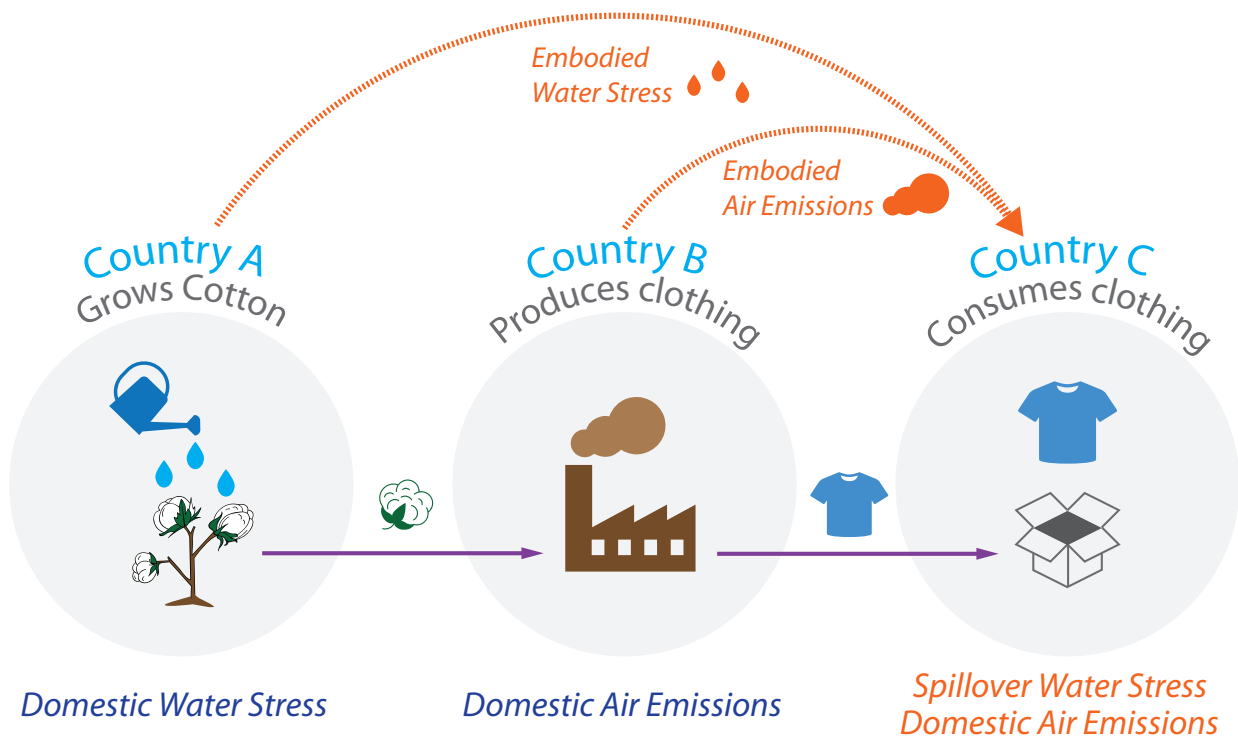
Source: SDSN, Yale Center for Environmental Law & Policy, and Center for Global Commons at the University of Tokyo. 2023, *Global Commons Stewardship Index 2022.* Paris; New Haven, CT; and Tokyo.

Supply chains can stretch through multiple countries, and spillover impacts accumulate as they are embodied at multiple steps along the journey to the final destination country. Figure 2.13 illustrates a simplified example using three countries (SDSN, University of Tokyo, and Yale University 2023). Water stress in Country A and air emissions in Country B count as domestic impacts within those countries. Because the final demand is in Country C, these impacts both count as spillovers in Country C. Spillovers thus include more impacts than those embodied only in the last segment of the supply chain.

As one example: when considering consumption patterns, the textiles and clothing sector is one of the most substantial generators of spillovers of GHG emissions. Figure 2.14 indicates that, of GHG emissions due to global final demand for textiles and clothing,

59 percent are emitted along the supply chains of countries other than those where the final products are consumed (i.e., spillovers), while 41 percent are emitted in the countries in which the final products are consumed (i.e., non-spillovers). These GHGs originate from a variety of sectors along the textiles and clothing supply chains of countries on the left side of the diagram, including the textile sector itself, electricity production, chemical production, and more. Of the spillover GHG emissions caused by the final consumption of textiles and clothing, the two largest destinations are the EU27 and the United States, each accounting for 21 percent. Among countries whose supply chains contribute to producing these goods for consumption abroad, China generates 40 percent of the spillover GHG emissions. The textiles and clothing sector is also associated with negative socioeconomic spillovers, including accidents at work and child labor (Malik et al. 2021).

Figure 2.14

GHG emissions embodied in the final consumption of textiles and clothing
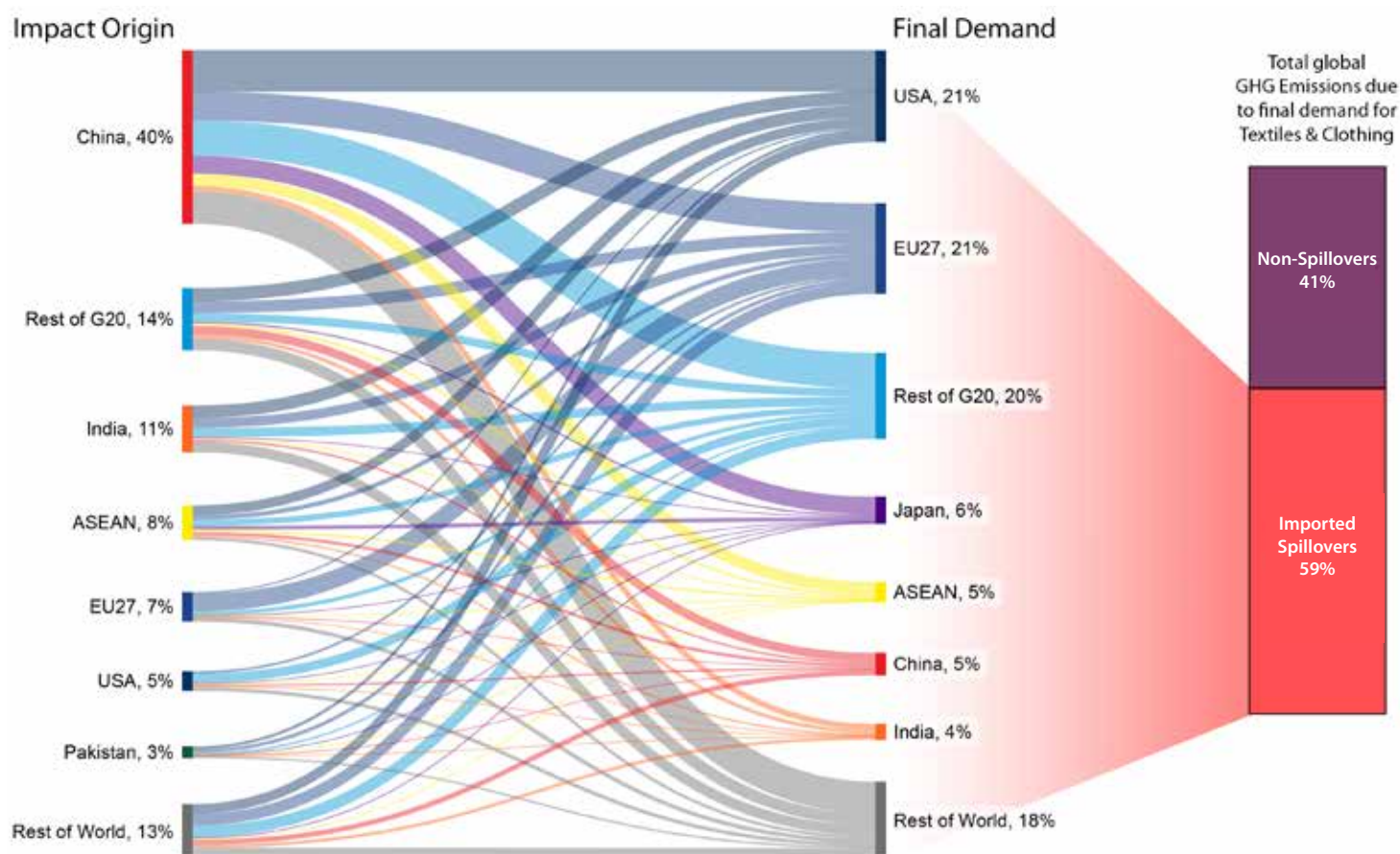
Note: The impacts occur in the countries on the left side of the diagram, while the products are ultimately consumed in the countries on the right side of the diagram (intermediate countries along supply chains are not shown). Of the total global GHG emissions due to demand for textiles and clothing, 59 percent are embodied in spillovers.

Source: SDSN, Yale Center for Environmental Law & Policy, and Center for Global Commons at the University of Tokyo. 2023. Global Commons Stewardship Index 2022. Paris; New Haven, CT; and Tokyo.

Curbing trade-related spillovers is a matter of making trade more sustainable and more consistent with the objectives of the Paris Agreement, the Global Biodiversity Framework, the High Seas Treaty and the SDGs – rather than simply restricting trade, which plays such a massive role in enabling developing countries to generate employment and socioeconomic development. Success requires a combination of better metrics and policies in importing countries that must be coupled with support to exporting countries, particularly tropical forest countries, to transition towards more environmentally sustainable technologies and development paths. Both sides – importers and exporters – must work closely together in partnership to tackle this shared challenge (University of Tokyo, Systemiq, and SDSN, 2023).

2.4 SDG Dashboards by income groups and major world regions

The SDG dashboards highlight each country's strengths and weaknesses in relation to the 17 goals, presenting performance in terms of levels and trends. As described in the methodology section, dashboard ratings for each goal are based on data for the two indicators on which the country performs worst. Good performance on five of

seven indicators, for example, does not compensate for poor performance on the other two. In other words, our methodology assumes low substitutability or compensation across indicators in the construction of our composite index. The arrow system focuses on structural trajectories since the adoption of the SDGs (and less on year-on-year changes). As in previous years, the dashboards include population-weighted averages for each region and income group, using the same set of indicators as the SDG Index. The OECD dashboards incorporate more indicators than others, owing to the greater availability of data for these countries. We also find that 17 "headline" indicators tend to be very good predictors of the overall SDG Index, which uses 97 indicators (Box. 2.2).

Box 2.2 Explaining the SDG Index with a handful of key indicators

The SDG Index is an accountability tool, but it is also a tool to highlight data gaps and areas where further effort is needed to strengthen data availability and timeliness. Overall, this year's edition includes 97 indicators. Yet the SDG Index score and rankings can be explained through a handful of key indicators. Using 17 "headline" indicators that cover SDSN's Six SDG Transformations and other major principles, including leave no one behind, good governance, and the concept of international spillovers, we find a very high and statistically significant correlation (both in terms of scores and ranks) with the overall SDG Index. These indicators are: (1) Poverty headcount ratio at US$2.15/day, (2) Prevalence of undernourishment, (3) Life expectancy at birth, (4) Lower secondary completion rate, (5) Share of women parliamentarians, (6) Population using at least basic sanitation services, (7) Population with access to electricity, (8) Unemployment rate, (9) Population using the internet, (10) GINI coefficient, (11) Annual mean concentration of particulate matter of less than 2.5 microns in diameter, (12) Imported SO2 emissions, (13) CO_2 emissions from fossil fuel combustion and cement production, (14) Ocean Health Index: Clean Water, (15) Red List Index of species survival, (16) Corruption perception index, and (17) Statistical Performance Index. There are no signs of collinearity among these indicators.

Figure 2.15
Correlation between 2023 SDG Index Score and Narrow SDG Index (17 "headline" indicators)
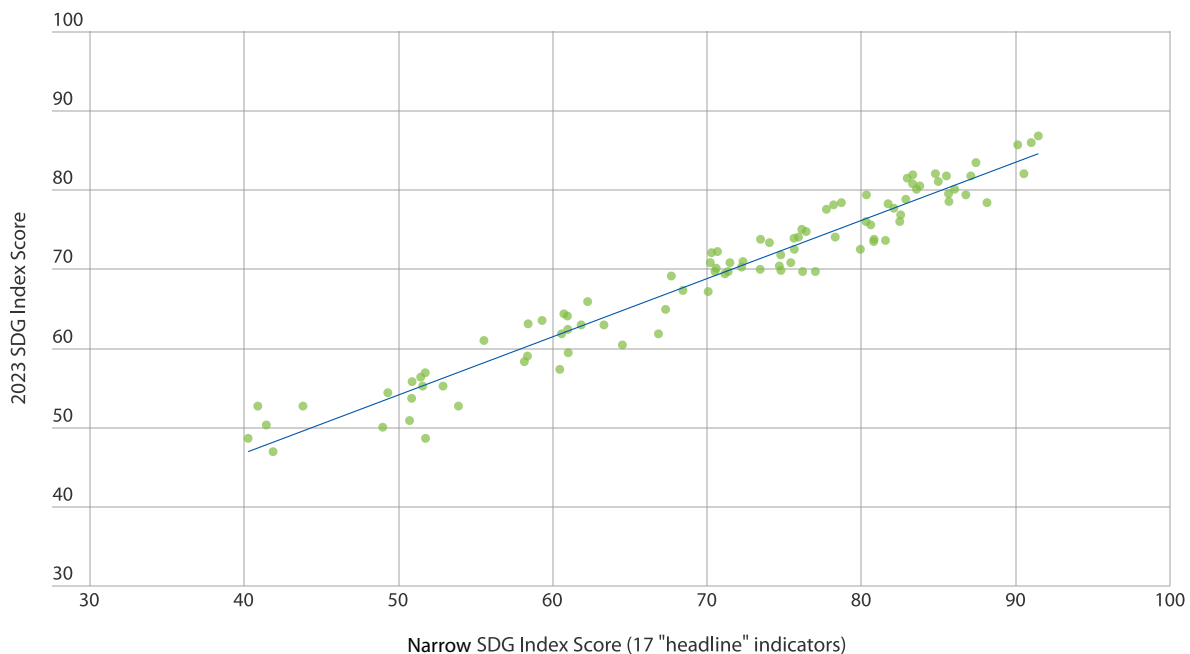
Note: Correlation coefficient (r) between SDG Index scores=0.97. *Source:* Authors

3

Government Efforts and Commitments for the SDGs

Part 3

Government Efforts and Commitments to the SDGs

The SDGs require long-term directed change and global cooperation. Long-term investment plans are essential for national success in meeting the goals. There was no expectation in 2015, when the SDGs and Agenda 2030 were adopted, that all goals and targets would be achieved at their midpoint. However, by 2023, one would expect that most countries would have implemented ambitious policy, regulatory and investment frameworks compatible with achieving major SDG transformations. It could also be expected that all countries would have at least once documented their progress and their plans for achieving the SDGs in a Voluntary National Review (VNRs) presented at the United Nations.

This section discusses government commitment and efforts for the SDGs. It captures something different from the SDG Index. A country facing a large gap to conquer on the SDG Index may have introduced ambitious policy frameworks that are likely to lead to future SDG breakthroughs – especially if these policies and planned investments are supported by adequate financing. As such, this assessment of government commitment and efforts for the SDGs is more "forward-looking". Compared with outcome statistics, however, input and process statistics are less internationally standardized and rely on more qualitative information and expert judgement.

Nation-states continue to hold the primary responsibility for achieving the SDGs. This section focuses primarily on the executive branch at the federal/national level, although we briefly discuss how regions and cities can also use the SDGs as a strategy and monitoring framework. Other SDSN reports discuss subnational SDG progress and challenges at length. Building on earlier work conducted by the SDSN (Sachs et al, 2018–2022; Lafortune et al, 2022), we conceptualize government efforts for the SDGs using a three-pillar framework: (1) political leadership and institutional coordination; (2) SDG integration in sectoral policies and long-term pathways; and (3) commitment to multilateralism under the UN Charter (see Figure 3.1). For each pillar, we present proxy indicators that build on a combination of qualitative survey tools, third-party data, and data scraped from online institutional resources. We include results for each pillar, which we aggregate into an overall score for "government efforts and commitments for the SDGs". Building on close cooperation with SDSN national and regional networks and other partners, we cover this year 74 countries from various income groups and world regions.

A detailed database and additional technical information are available online. This remains largely a work in progress, and we welcome feedback and comments on the selected indicators and methodology (see more at www.sdgtransformationcenter.org).

3.1 Political leadership and institutional coordination: results from the 2023 SDSN survey of government efforts for the SDGs

The SDGs have a significant impact on public management practices and procedures (SDSN and OECD, 2019). Every year since 2018, SDSN has called on its global network of experts to track public statements by governments and their strategic use of public processes to support the SDGs. This information is collected through a survey of national coordination and implementation mechanisms at the central/federal level of government. The survey evaluates whether the SDGs are used and mentioned in official speeches, strategies, monitoring systems, budgets, and other public processes. It provides an overarching assessment of national/federal government efforts to embrace the SDG agenda which is complemented by a more granular assessment of the alignment of sectoral policies, regulations, and investments for the SDGs (presented in the next sub-section).

Figure 3.1

A conceptual framework to evaluate government efforts and commitment to the SDGs

This year's survey covers 74 countries (14 more than in 2022) plus the European Union. It includes all G20 countries, most OECD members, most countries with a population greater than 100 million inhabitants, and several LICs, LMICs, UMICs, HICs, and SIDS. Overall, these 74 countries represent nearly 85 percent of the world's population. Survey results are presented in Table 3.1. Data were collected and analyzed in close partnership with SDSN's global network, and results have been shared with UN Permanent Missions for comment prior to publication.

The key finding from this survey is that, seven years after the adoption of the 2030 Agenda and the SDGs, most governments have signaled "soft" SDG integration into their public management practices and procedures – although there is significant variation across countries – yet "hard" SDG integration is generally missing, including the use of the SDGs to support long-term budget and investment frameworks. By July 2023, all UN Member States will have presented a VNR **except for Haiti, Myanmar, South Sudan, the United States and Yemen**.

Most VNRs identify SDG priorities and actions within country borders, but fail to accurately capture efforts to curb negative international spillovers and the potential transboundary impacts of their policies. In general, our findings echo other research published over the past twelve months, showing continued gaps in SDG leadership and institutionalization (Biermann et al, 2022; Kotzé et al, 2022; IGS, 2023). Further integration of goal-based sustainable development into public management processes, supported by long-term, science-based pathways, remains a top priority in most countries if they are to achieve SDG breakthroughs by 2030 and beyond.

Official high-level speeches and the preparation of VNRs (as the official government-led process to report on SDG progress, gaps, and policy efforts) provide relevant proxies to gauge political commitment to the SDGs. Between January 2022 and April 2023, 64 percent of the countries surveyed reinforced their commitment to the SDGs in an official speech or statement by the head of state (president or prime minister) – an increase from 2022,

As G20 countries represent two-thirds of the world's population and 85 percent of global GDP, integrating the SDGs into their governance systems is particularly important. Compared with other countries, G20 countries tend to lag in several aspects of institutional leadership for the SDGs, including explicit political support in speeches and monitoring and coordination mechanisms. The integration of the SDGs in national budget processes could be strengthened in most countries, and especially in LICs and LMICs, where less a third of the countries surveyed refer to the SDGs in their national budgets – either in the narrative or as a dedicated section or budget line.

3.2 SDG integration into sectoral policies and pathways: scorecards for the Six SDG Transformations

The SDGs require long-term directed change, with long-term investment plans essential for national success in meeting the goals. SDSN has recommended six inter-related long-term transformations:

1. Universal quality education and innovation-based economy

2. Universal health coverage

3. Zero-carbon energy systems

4. Sustainable ecosystems, sustainable agriculture, and climate resilience

5. Sustainable cities

6. Transformation to universal digital access and services

Each of these challenges requires large-scale public and private investments to mid-century. Each requires a technological transformation. Each requires a financing strategy to underpin the investment plans and monitoring systems. None can be solved by the private sector alone. Governments must take the lead in all six areas to design policy and financial frameworks within which business can profitably invest and innovate.

Building on the work of previous Sustainable Development Reports, we present here an updated and improved version of the SDG Transformation scorecards, to evaluate how the SDGs are being integrated into sectoral plans. Each scorecard consists of a collection of headline policy and investment measures to track SDG implementation. These scorecards complement the SDG Index, which is based on outcome data (for example, on poverty rates, life expectancy, and CO_2 emissions). At the international level, such measures of outcome tend to present significant time lags: they may not adequately reflect the impact of transformative policies and investments that governments have introduced since the adoption of the SDGs, and which often yield results only in the medium or long term. The scorecards instead focus on the enabling legal, regulatory, and investment conditions needed to achieve the SDGs and the objectives of the Paris Climate Agreement.

This exercise has several caveats and limitations. First, internationally comparable policy trackers and measures (such as laws, regulations, investments, and subsidies) tend to be less available than international outcome data. They rely on more qualitative methods and require an advanced understanding of policy areas and country policies and contexts (generally, more comparable policy trackers and measures are available for OECD countries than for others). Second, policy efforts need to be interpreted with an understanding of national challenges and contexts (for instance, the absence of advanced cybersecurity policies matters less in a country with low internet access and poor digital infrastructure). Third, apart from a few exceptions, government pledges and policies do not capture their effective implementation. And fourth, targets or thresholds to gauge policy ambitions are not always clearly defined.

The rest of this section provides a brief overview of countries' policy efforts and commitments relating to achieving the six SDG Transformations, and highlights where more research and policy trackers are required to broaden our understanding of national SDG efforts. We present detailed results for the G20 countries, along with population-weighted averages by geographic region and income group. Detailed information on indicator sources, thresholds and results for all 193 UN Member States are accessible online.

Transformation 1: Universal quality education and innovation-based economy

Education builds human capital, which in turn promotes economic growth, innovation, decent work, and the elimination of extreme poverty, and helps overcome gender and other inequalities. Countries must further expand and transform education systems. SDG target 4.1 calls for universal access to 12 years of free primary and secondary education, with at least 9 years compulsory.

This scorecard shows that many countries around the world currently fall short of this target. To reduce inequalities, governments also need to expand social safety nets. These should be complemented by anti-discrimination measures (including those furthering gender equality); improved labor standards; and measures to end all forms of modern slavery, trafficking, and child labor. Investments in research and development will also help to promote economic growth, which can contribute to reducing inequalities.

Looking ahead, a lead global indicator must be established to assess country efforts to strengthen their population's and students' knowledge of sustainable development and their ability to navigate an information-rich environment. This is important to achieve long-term science-based transformations of all economies, and to build up public support and accountability. According to the OECD, only one in 10 students in OECD countries can distinguish between fact and opinion (OECD, 2018).

Transformation 2: Universal health coverage

This Transformation promotes key investments in health and well-being. It aligns closely with SDG Target 3.8, achieving universal health coverage and ensuring that all people have access to the health services they need. In the SDGs, universal health care (UHC) is considered a target in itself. For the SDG Transformation scorecards, however, we consider UHC an enabler (input) for greater health outcomes. Even before the Covid-19 pandemic, the WHO and other international institutions had lamented the slow pace of progress towards achieving universal health coverage (WHO, 2019). Compared with the rest of the world, a higher percentage of people in OECD countries tend to be covered by public or mandatory private health insurance, and incidence rates of catastrophic out-of-pocket health expenditures are lower – although there are exceptions, including Mexico, Costa Rica, Poland, and the United States.

The SDGs also call on all countries to strengthen their capacities for early warning, risk reduction, and the management of national and global health risks (SDG target 3.d). As a measure of pandemic preparedness, the Global Health Security Index turned out to be a rather poor predictor of effective early response to COVID-19, as measured by the number of cases and deaths (Lafortune, 2020), indicating that important factors are at play that are not yet adequately captured by existing policy trackers. Nevertheless, we have not identified a better policy-focused indicator of pandemic preparedness. In the context of the High-Level Pandemic Summit to take place in September 2023 and the forthcoming global pandemic treaty, it remains vital to define solid international measures and monitoring systems that can better gauge countries' preparedness for global health security threats. But it is also important to address drivers that can lead to the emergence of new pathogens, including environmental drivers, through "One Health" approaches (Sachs et al, 2022; McKee et al, 2021).

Transformation 3: Zero-carbon energy systems

This Transformation aims to ensure universal access to modern energy sources; decarbonize the energy system by mid-century (in line with the Paris Agreement); and reduce industrial pollution of soil, water, and air. More than 130 countries are signatories to the UN Climate Ambition Alliance, and more than 50 have anchored their net-zero commitment in a law or policy document (Net Zero Tracker, 2023; UNFCCC, 2022). By September 2022, 139 countries had submitted or updated nationally determined contributions (NDCs), with studies finding that new and updated NDCs present more ambitious emission-reduction targets and planning (WRI, 2022).

There continues to be a major discrepancy between countries' self-declared ambitions and their tangible efforts and policies. The *Climate Action Tracker*, an independent scientific analysis of governments' climate actions, finds that no single G20 country has adopted a sufficient mix of policies and actions to achieve the Paris Climate Agreement objectives, with only the United Kingdom reaching an "almost sufficient" level of policy (Climate Action Tracker, 2022). Many countries continue to provide substantial subsidies for fossil fuels, undermining their initiatives to decarbonize the energy system, such as the United States' Inflation Reduction Act (IRA) and the European Union's Net Zero Industry Act (NZIA) (DGAP 2023). While comparable country-level data are not yet available, the IEA has concluded that global fossil-fuel consumption subsidies rose sharply in 2022, as governments attempted to shield consumers from rising energy bills (IEA 2023, OECD 2022).

Transformation 4: Sustainable ecosystems, sustainable agriculture, and climate resilience

Unsustainable consumption is strongly interconnected with diets, land-use policies, and the health of major ecosystems. This is why Transformation 4 calls for integrated transformations to address dietary shifts, biodiversity, agricultural systems, and land-use policies. Bringing these elements together is a main difference between the Six Transformations and the "six entry points for action" presented in the *Global Sustainable Development Report* (GSDR, 2023), which treats "Sustainable Food Systems and Healthy Nutrition" and the "Global Environmental Commons" as two separate entry points.

Today's land-use practices and food systems have led to persistent hunger, malnutrition, and obesity. They account for a quarter of greenhouse gas emissions, over 90 percent of scarcity-weighted water use, most biodiversity loss, the overexploitation of fish populations, eutrophication through nutrient overload, and the pollution of our water and air. Food systems are also highly vulnerable to climate change and land degradation: integrated strategies are vital to ensure that these systems, along with land-use practices and ocean ecosystems, are sustainable and healthy for people. The Convention on Biological Diversity, adopted in December 2022 during the 15th Convention of Parties in Canada, calls to protect and conserve at least 30 percent of terrestrial, inland water and coastal and marine areas by 2030, "especially areas of particular importance for biodiversity and ecosystem functions and services" (UN, 2022).

UNEP estimates that 84 percent of Parties to the UN Framework Convention on Climate Change (UNFCCC) have now adopted climate adaptation plans, strategies, laws, and policies (UNEP, 2022). But there is a significant gap in funding these measures. Annual adaptation funding needs are expected to reach US\$160 billion to US\$340 billion by 2030, and US\$315 billion to US\$565 billion by 2050 (UNEP, 2022). Establishing mechanisms to ensure that the burden of financing human-induced adaptation is shared fairly and globally, and that the countries responsible pay the costs of loss and damages, remains an important priority for the international community.

The SDSN is highly committed to supporting global and national efforts to develop sustainable food and land systems, preserve major ecosystems, and ensure adequate finance for nature and climate adaptation. In close collaboration with the Food and Land Use Coalition (FOLU), the SDSN's FABLE and FELD projects provide support for long-term, sustainable food and land use pathways and policies. Despite the recognized importance of decarbonizing agriculture and enhancing carbon sinks towards achieving the objectives of the Paris Climate Agreement, FELD recently documented the limited integration of food and land policies into NDCs (FELD, 2022). Other flagship projects include the Global Commons Stewardship Initiative (led by the Center for Global Commons at the University of Tokyo in cooperation with SDSN and other partners) and the Science Panel for the Amazon (CGC, SDSN and Yale, 2023; CGC, SYSTEMIQ, SDSN et al, 2022). Considering the complexity and far-reaching nature of this Transformation, we are not yet in a position to present a scorecard for Transformation 4.

Transformation 5: Sustainable cities

Cities and other urban areas are home to around 55 percent of humanity, and account for 70 percent of global economic output. By 2050, these shares will increase to 70 and 85 percent, respectively (Jiang and O'Neill, 2017). The OECD estimates that 105 of the 169 SDG targets will not be reached without sufficiently engaging sub-national governments (OECD, 2020). the COVID-19 pandemic has had lasting impacts on urban mobility, land use, property values, and transport systems in developed and developing countries alike. Many urban organizations and associations have mainstreamed the SDGs into their work programs, including C40, UN-Habitat, United Cities and Local Governments (UCLG), and Local Governments for Sustainability (ICLEI), as well as the OECD's Centre for Entrepreneurship, SMEs, Cities and Regions.

By design, Transformation 5 calls for regional and local policy trackers. These would notably track efforts at the regional and city level to curb urban pollution, increase housing affordability, and strengthen mobility and access to public transport. Other policy measures could

Box 3.1 The OECD, SDSN and the European Committee of the Regions survey of city and regional SDG policies in a time of crisis

The survey focused on impacts of the COVID-19 pandemic and the war in Ukraine on SDG implementation at the subnational level. Questions explored policy measures to address rising costs of living (SDGs 1, 2, 11, 13), energy costs (SDG 7) and food prices (SDG 2), which have emerged as political priorities across the world.

The responses from over 250 governments and territorial stakeholders will be used to support the OECD program "A Territorial Approach to the SDGs". An OECD-SDSN policy paper and a CoR map on city and regional commitment to the SDGs will be presented at the UN High-level Political Forum on Sustainable Development – where progress on SDG 11 (Sustainable Cities) is being reviewed – and at the September 2023 SDG Summit.

More than half of the 192 local and regional governments surveyed have a dedicated SDG strategy or action plan and a similar percentage use indicators to track SDG progress (as of April 2023). Other survey questions looked at the types of data used by cities and regions to track progress, challenges and success factors, and explored specific policy initiatives related to SDGs 2 and 7.

Figure 3.5

Percentage of local and regional governments using selected SDG policies and actions
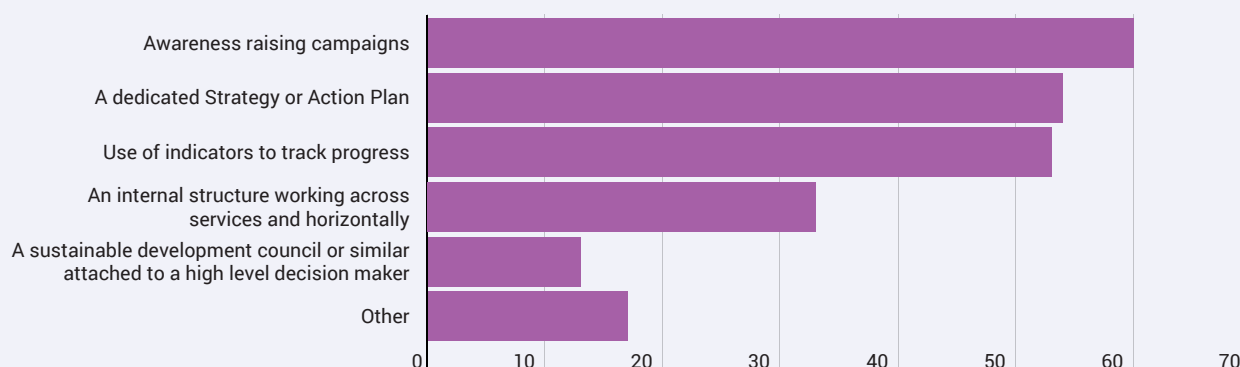
Source: 2023 OECD-SDSN-CoR survey on the role of cities and regions for the SDGs in an uncertain geopolitical context

be considered proxies of local government commitment to achieving the triple objective of being economically productive, socially inclusive, and environmentally sustainable. SDSN is working with local partners to strengthen policy frameworks in regions and cities, and to reinforce the science-policy interface at the subnational level.

In early 2023, the OECD, SDSN, and the European Committee of the Regions (CoR) conducted a survey to take stock of city and regional SDG progress. Previous surveys on the topic were conducted by the OECD and the CoR in 2019 and 2020.

Transformation 6: Universal digital access and services

Artificial intelligence and other digital technologies are disrupting almost every sector of the economy: agriculture (precision agriculture), mining (autonomous vehicles), manufacturing (robotics), retail (e-commerce), finance (e-payments, trading strategies), media (social networks), health (diagnostics, telemedicine), education (online learning), public administration (e-governance, e-voting), and more recently, clerical, drafting, research and creative work (generative AI), as well as other fields in science and technology.

Digital technologies can raise productivity, lower production costs, reduce emissions, expand access, dematerialize production, improve matching in markets, enable the use of big and unconventional data, and make public services more readily available. They can also improve resource-use efficiencies, support the circular economy, enable zero-carbon energy systems, help monitor and protect ecosystems, and assume other critical roles in support of the SDGs. Yet the disruptive nature of new technologies calls for deliberative exchanges and consultations with multiple stakeholders and careful assessment of distributional impacts and trade-offs.

Countries face different challenges depending on the maturity of their digital infrastructure and technologies. Less-connected countries especially need to invest to provide widespread, affordable internet access and promote digital literacy. Yet issues surrounding privacy, cybersecurity, e-government, digital inclusion, and the robustness of digital regulatory frameworks concern all countries.

The Transformation 6 scorecard builds on the World Bank's *Digitalization for Development* policy framework (World Bank, 2022). It aims to capture efforts made to strengthen digital infrastructure, data security, and government platforms and services, as well as the promotion of key enablers such as digital literacy and privacy and inclusiveness (including bringing a social and gender perspective to digital and technology policies). For now, the scorecard captures a subset of these different elements: we aim to improve coverage over time. UN DESA's *Online Services Index* assesses the quality of government provision of online services; the ITU's *ICT Regulatory Tracker* is a composite score of regulatory and competition framework for the ICT sector; UNCTAD's *Global Cyberlaw* tracker maps legislation on e-commerce, consumer and data protection and cybercrime; and, finally, the *Inclusive Internet Index's* policy score assesses a set of policies on digital inclusion for women and children and safety and privacy, as well as policies aiming to increase broadband and 5G access.

Further analyses will be needed to capture policies and regulations supporting "last-mile inclusion", particularly in relation to financial services and digital literacy, and participation and trust in digital institutions (BCG 2020, Morell-Ducós 2021, Shree, S., Pratap, B., Saroy, R. 2021, CGAP/World Bank 2020). Trackers are also needed to better gauge the quality of internet regulations, measure access to e-government services and evaluate their quality, and to assess government readiness to respond to and to prevent cybersecurity threats.

3.3 Support for multilateralism under the Charter of the United Nations

Achieving the SDGs requires global cooperation under the UN Charter. The Charter, signed in 1945, is the founding document of the United Nations. It codifies the major principles of international relations, from the sovereign equality of States to the prohibition of the use of force in international relations. Climate change, peace, cybersecurity, reliable data and information, and pandemic prevention and response all depend on close collaboration across countries and a strong multilateral system, while global supply chains and financial flows can either support or undermine countries' efforts to achieve the SDGs. The 2015 Declaration, *Transforming our world: the 2030 Agenda for Sustainable Development*, recalls that:

> "Seventy years ago, an earlier generation of world leaders came together to create the United Nations. From the ashes of war and division they fashioned this Organization and the values of peace, dialogue and international cooperation which underpin it. The supreme embodiment of those values is the Charter of the United Nations."

The SDGs are not only a public policy framework; they are an ethical imperative grounded in the Universal Declaration of Human Rights, which celebrates its 75th anniversary this year. The SDGs are based on the core premises of the Universal Declaration, that, "All human beings are born free and equal in dignity and rights … and should act towards one another in a spirit of brotherhood," and that "it is essential to promote the development of friendly relations between nations". In 2022, the United Nations Secretary-General appointed a High-Level Advisory Board on Effective Multilateralism, with a mandate to develop a list of concrete, actionable recommendations to improve international cooperation and advance the 2030 Agenda for Sustainable Development. We therefore consider that promoting multilateralism and global cooperation under the UN Charter is an important component of countries' efforts and commitments for the SDGs.

This section is an attempt to take stock of countries' efforts to adhere to the values and principles of multilateralism in order to achieve sustainable development. To our knowledge, there is currently no overarching measure that captures the many dimensions of support for multilateralism. The International Peace Institute's 2022 *Index of Multilateralism* explored the state of multilateralism globally, but it did not compare country engagement (IPI, 2022). Other reports focus on mapping the size of diplomatic networks or measuring specific aspects of multilateral efforts (e.g., peace or official development assistance). The assessment presented this year is a pilot that we aim to improve and expand in coming years. We welcome comments and feedback.

We present a variety of proxy indicators to gauge countries' ratification of UN treaties, their membership in UN institutions, unilateral sanctions they have adopted against other UN Member States, and their efforts to promote global solidarity – including international financial flows – and peace. In most cases, we aim to capture the latest period (2018–2022) or the latest available data points. The variables related to the ratification of treaties and the adoption of unilateral coercive measures cover 1946–2022 and 1950–2021 respectively. This assessment is based on UN databases and several third-party sources. For presentational reasons, the tables and charts cover only OECD, G20, and large economies. The full database and additional material are accessible online.

Percentage of UN Treaties ratified: This indicator covers all Conventions, International Conventions, and Agreements adopted by the United Nations from 1946–2022, including those adopted before 1946 that were later added to the UN Treaty system. It excludes Protocols, Optional Protocols, and Amendments, as well as Conventions that were later terminated or only applied to a small number of countries. For each of the 150 treaties, we recorded whether Member States had signed or ratified them. Signature of a treaty is not legally binding, whereas ratification (or acceptance, accession, definitive signature, and succession) is legally binding. The indicator for the percentage of UN treaties ratified (*all international*) shows the percentage of these 150 treaties that each Member State has ratified, whereas the percentage of UN treaties ratified (*selective*) indicator shows the percentage each country has ratified of a select

list of 58 treaties. This shorter list includes only those treaties ratified by more than 50 percent of UN Member States. Austria, Hungary, Italy, Nigeria, Spain, and Sweden have ratified more than 98 percent of all treaties in the selective list. By contrast, Ethiopia, Indonesia, Israel, Saudi Arabia, and the United States have ratified less than 75 percent (selective list) (Figure 3.6).

Unilateral coercive measures (UCMs): This indicator reviews the adoption by UN Member States of unilateral sanctions against another UN Member State. Several UN resolutions stress that unilateral coercive measures and practices are "contrary to international law, international humanitarian law, the UN Charter and the norms and principles governing peaceful relations among States, and highlight that on long-term, these measures may result in social problems and raise humanitarian concerns in the States targeted."[1] In 2014, the Human Rights Council created the mandate of the Special Rapporteur on the negative impact of unilateral coercive measures on the enjoyment of human rights.

Since 1966, the Security Council has established 31 sanctions regimes: in Southern Rhodesia, South Africa, the former Yugoslavia (2), Haiti (2), Angola, Liberia (3), Eritrea/ Ethiopia, Rwanda, Sierra Leone, Côte d'Ivoire, Iran, Somalia/ Eritrea, Iraq (2), the Democratic Republic of the Congo, Sudan, Lebanon, the Democratic People's Republic of Korea, Libya (2), Guinea-Bissau, Central African Republic, Yemen, South Sudan and Mali, as well as sanctions on ISIL (Da'esh) and Al-Qaida, and the Taliban. The famous 1977 United Nations Security Council Resolution 418 unanimously imposed a sanctions regime against Apartheid South Africa.

The data on UCMs presented in this report come from the *Drexel Global Sanctions Database* (V3, March 2023), which provides information on sanctions adopted against other countries, including the beginning and final year of sanction imposition. Here we present sanctions adopted unilaterally from 1950 to 2021 that are still in place as of 2022. For our purposes, a sanction is considered unilateral if it has not been approved by the UN Security Council, even if it is imposed by multiple countries. Percentages represent the share of all sanctions that a country or region has adopted

to 2021. For EU member states, for example, this includes EU sanctions as well as sanctions that the country has imposed individually. Sanctions imposed by the European Union after Brexit were allocated as separate sanctions for the UK.

Membership and participation in selected United Nations organizations: This indicator captures membership in 24 United Nations organizations: all 15 specialized agencies, all 6 United Nations funds and programmes, the UN Conference on Trade and Development (UNCTAD), the UN Framework Convention on Climate Change (UNFCCC) and the World Trade Organization (WTO). These organizations were selected to represent a broad range of issues related to sustainable development (education, health, finance, trade, telecommunication, and industrial policies), as well as including all of the specialized agencies.

UN Specialized Agencies: the Food and Agriculture Organization (FAO); the International Civil Aviation Organization (ICAO); the International Fund for Agricultural Development (IFAD); the International Labour Organization (ILO); the International Monetary Fund (IMF); the International Maritime Organization (IMO); the International Telecommunication Union (ITU); the UN Educational, Scientific and Cultural Organization (UNESCO); the United Nations Industrial Development Organization (UNIDO); the World Tourism Organization (UNWTO); the Universal Postal Union (UPU; the World Health Organization (WHO); the World Intellectual Property Organization (WIPO); the World Meteorological Organization (WMO); and the World Bank Group – including the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), and the International Finance Corporation (IFC). *United Nations funds and programmes:* UN Development Programme (UNDP), UN Environment Programme (UNEP), UN Population Fund (UNFPA), UN Human Settlements Programme (UN-HABITAT), UN Children's Fund (UNICEF), World Food Programme (WFP).

Memberships were verified as of May 2023 via each organization's website. Several OECD countries are no longer members of UNIDO; the United States and Israel withdrew funding to UNESCO in 2011 and withdrew their membership in 2019.

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1. https://www.ohchr.org/en/special-procedures/sr-unilateral-coercive-measures

Militarization and participation in conflicts: This indicator aims to capture countries' efforts to promote and preserve peace. It identifies countries' level of military build-up and access to weapons, as well as their participation in ongoing domestic and military conflicts. It builds on data provided in the *Global Peace Index 2022* (compiled by the Institute for Economics and Peace). The Ongoing Conflict Score builds on six indicators to investigate the extent to which countries are involved in internal and external conflicts, as well as their role and the duration of their Involvement. The Militarization Score reflects countries' level of military build-up and access to weapons, as well as their level of peacefulness, both domestically and internationally. Comparable data on military expenditure as a percentage of GDP and the number of armed service officers per capita are gauged, as are financial

contributions to United Nations peacekeeping missions. Overall, among G20, OECD and large countries, Czechia, Iceland, Ireland, Malaysia, New Zealand, and Portugal obtain the highest (best) scores, whereas Israel and the Russian Federation obtain the lowest (worst) scores.

International Solidarity and Financing: We present data compiled by the OECD on Official Development Assistance (ODA) as a headline indicator of international solidarity. In 2022, only five DAC members – Denmark, Germany, Luxembourg, Norway, and Sweden – had met or exceeded the 0.7 percent ODA target. When computing overall scores, we use the average ratio of ODA/GNI over the past five years (Figure 3.10). In 2022, ODA rose by 13.6 percent in real terms, driven primarily by the sharp increase of in-donor refugee costs (OECD, 2023b).

Figure 3.11

Conceptual Framework for Evaluating Government Efforts and Commitments to Implement the SDGs and Indicators Retained to Compute the Overall Score for 2023

Political Leadership & Institutional Coordination The SDGs are referenced & used in political speeches and institutional processes	SDG Integration into Sectoral Policies & Pathways Ambitious policy, regulatory and investment frameworks to achieve the Six SDG Transformations	Commitment to Multilateralism under the UN Charter Countries promote global cooperation for sustainable development
• Voluntary National Reviews • Official speeches by country leaders making reference to the SDGs • SDG coordination unit in government • National SDG strategy (or sustainable development strategy) • National SDG monitoring system • SDGs referenced in annual national budget	• Universal quality education and innovation-based economy • Universal health coverage • Zero-carbon energy systems • Sustainable ecosystems, sustainable agriculture, and climate resilience • Sustainable cities • Transformation to universal digital access and services	• Ratification of UN Treaties • Membership in major UN organizations • Promotion of demilitarization and global peace • Use of unilateral coercive measures • Official Development Assistance (for OECD/HICs)

Note: For Pillar 2, the indicators listed correspond to the overall score for each Transformation Scorecard. This year, we could not compute scores for Transformation 4 (Sustainable ecosystems, sustainable agriculture, and climate resilience) and Transformation 5 (Sustainable cities). Under pillar 3, the use of unilateral coercive measures correspond to measures adopted over the period 1950 to 2021 that are still in place in 2022. They exclude measures adopted since January, 1 2022 and measures supported by UN resolutions. Political leadership and institutional coordination is weighted 50% of the total score, SDG integration into sectoral policies and pathways is weighted 40%, and the pilot score for multilateralism counts for 10% (as this latter pillar remains a pilot this year). A Monte Carlo simulation is accessible online showing how scores would vary with different weighting systems. Other sensitivity tests are also provided, including various aggregation methods (geometric mean vs arithmetic mean). Further information is accessible on sdgindex.org.

Source: Authors analysis

3.4 Government effort and commitments for the SDGs: overall scores

Building on the Six Transformations scorecards, the SDSN survey of government efforts for the SDGs, and a subset of variables related to government support for multilateralism under the United Nations Charter, we present here overall scores rating government efforts and commitment to the SDGs. These scores range from 0 (very low SDG commitment) to 100 (very high SDG commitment) and cover all 74 countries in the 2023 SDG Policy Coordination Survey presented in section 3.1, including all G20 members and most OECD countries. Scores draw on 29 indicators of policy efforts and commitment. Since the 2022 pilot, we have added four new indicators on digitalization and five on engagement with multilateralism. We have also made some methodological changes: these are explained in greater detail in a technical annex available online, which also discusses the full list of indicators, the weighting scheme applied, and various sensitivity tests used in developing these scores. We welcome critical comments and feedback that may help to strengthen future iterations of this work.

At the midpoint of the 2030 Agenda, we draw five major conclusions from this comprehensive assessment of policy efforts and commitment to the SDGs (Table 3.6). *First*, government efforts and commitment to the SDGs remains far too low. The average score of the 74 countries assessed is 56 percent, with none even close to obtaining a perfect score. *Second*, there are major differences across countries. Four European countries stand out as being very committed to the SDGs (Finland, the Netherlands, Sweden, and Switzerland), but scores among the G20 countries range from 77 percent in Indonesia to less than 40 percent in the Russian Federation and the United States. *Third*, of the three pillars, scores are on average lowest for the second one, related to adopting and implementing SDG policies and pathways. This is driven in part by the moderate or low performance of LICs and LMICs on this pillar, as these countries may lack the financial resources needed to successfully adopt and implement SDG investments and pathways. The HICs' somewhat better performance on pillar 2 is largely due to their strong performance on the education, health and

digital scorecards. More ambitious policies and actions on climate and decarbonization are needed. (This year's edition does not track efforts on sustainable food and land-use transformation, which is an important research agenda at the SDSN.) *Fourth,* LICs and LMICs score more highly on political leadership and institutional leadership for the SDGs than HICs. *Fifth*, all countries can do more to promote multilateralism, in line with the United Nations Charter. Argentina, Barbados, Chile, Germany, Jamaica and Seychelles score highest for their efforts to promote multilateralism, yet no country obtains a perfect score.

Some countries perform significantly better on SDG government efforts and commitment than would be expected from their 2015 baseline level of SDG achievement and GDP. We assume that rich countries with high educational levels and good health and infrastructure systems would have greater access to capital to invest in SDG transformations. Yet government efforts for the SDGs in 2023 correlate only moderately to their 2015 SDG Index scores and per-capita GDP in 2015. Benin, Ghana, Indonesia, Nigeria, and Senegal are just some of the countries that are performing much better on the SDG government effort measure than would be predicted from their baseline SDG Index levels and 2015 per-capita GDP. In contrast, a few countries with very high per-capita GDPs (US\$50,000 and above) and SDG Index scores (75 percent and above), such as Australia and the United States, demonstrate only a limited commitment to the SDGs, with apparently limited efforts made. See additional material available online.

Note that this score focuses on federal or national government efforts for the SDGs and may not be representative of initiatives and policies adopted at subnational levels – in regions, provinces, metropolitan areas, and cities. It has been SDSN's privilege to also work with municipal and metropolitan area associations in the United States and Brazil (ICS and SDSN, 2021; Lynch et al., 2019).

At this midpoint of the 2030 Agenda, all countries, richer and poorer alike, should use the half-way momentum to critically review and revise their national strategies, taking the 2030 Agenda principles as a yardstick (transformative, integrated, inclusive, leaving no one behind). International financing flows should be aligned with countries' SDG needs as well as their commitments.

4

Lessons Learned and Next Steps

Ten Years of Work on SDG Data and Statistics by The SDSN, its Networks, and Partners

Part 4

Lessons Learned and Next Steps

Ten Years of Work on SDG Data and Statistics by
The SDSN, its Networks, and Partners

Despite the fact that we are halfway through to 2030, much still needs to be done to strengthen the data and methodologies underlying the SDG indicator framework. The Resolution adopted by the UN General Assembly on 25 September 2015, *Transforming Our World: The 2030 Agenda for Sustainable Development*, recognized from the start the importance of closely monitoring progress on the Goals. The section dedicated to SDG monitoring notes that "our governments have the primary responsibility for follow-up and review, at the national, regional and global levels, in relation to the progress made in implementing the Goals and targets over the coming 15 years" (United Nations, 2015). The resolution also calls for broader measures of progress to complement GDP.

Thanks to the work of the United Nations Inter-Agency and Expert Group on SDG Indicators (IAEG-SDG), countries have adopted a common monitoring framework comprising 231 indicators, for which 219 have data as of October 2022.[1] Gaps remain that limit our capacity to track SDG progress, and the IAEG-SDG continues to actively expand coverage where national data is missing, developing new methods, identifying new sources to disaggregate the indicators by key population groups (such as by gender), and creating indicators to measure progress in local areas. The *Cape Town Global Action Plan for Sustainable Development Data*, released in South Africa at the first United Nations World Data Forum in January 2017 and adopted by the UN Statistical Commission, provides a strategic vision to strengthen data systems for Agenda 2030 (HLG-PCCB 2017).[2]

Since its inception in 2012, the SDSN has incorporated a strong focus on data and scienced-based pathways for sustainable development. In 2015, the SDSN Leadership

Council released its report *Indicators and a Monitoring Framework for the Sustainable Development Goals: Launching a Data Revolution*, directed to the UN Secretary-General (SDSN 2015). Through its flagship initiatives, including the SDG Index and the Thematic Research Network on Data and Statistics (TReNDS), the SDSN works closely with many partners to support global, national, and local efforts to leverage the SDGs as a monitoring and accountability tool. The SDG Index is, by design, a measure that goes beyond GDP. Building on more than ten years of work, this chapter discusses lessons learned from SDSN's flagship initiatives on data and statistics, identifying key priorities for improving the availability, quality, and use of data for sustainable development.

4.1 The SDG Index: a tool for guiding SDG action and strengthening accountability

Measuring sustainable development: why the SDG Index?

Prior to the SDGs, there was already a vast body of literature on how to define and measure sustainable development (Brundtland 1987; Dasgupta and Mäler 2000; Stiglitz, Sen, and Fitoussi 2009; Arrow et al. 2013). The adoption of the SDGs and the Paris Climate Agreement in 2015 established a shared vocabulary for sustainable development, oriented towards Agenda 2030, with the Paris Agreement aiming for climate-neutrality by 2050. In comparison to previous international development agendas and goals, such as the Millennium Development Goals (MDGs), the SDGs incorporated from the start a strong focus on targets, indicators, and monitoring – notably via the annual Voluntary National Review (VNR) process. The IAEG-SDG, which has operated under the United Nations Statistical Commission (UNSC)

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1. https://unstats.un.org/sdgs/files/meetings/iaeg-sdgs-meeting-13/8_Data-availability-review.pdf
2. https://unstats.un.org/sdgs/hlg/Cape_Town_Global_Action_Plan_for_Sustainable_Development_Data.pdf

since 2015, was tasked to develop and implement the global indicator framework for the SDGs. The global indicator framework was adopted by the General Assembly on 6 July 2017 and is refined and reviewed annually. The framework currently includes 231 unique indicators (248 when including indicators that repeat under two or three different targets).

Indicators provide data in specific areas, but they do not give us an aggregate measure of a country's SDG performance (Schmidt-Traub et al. 2017). The SDGs include 169 targets and 240 indicators, which is complex to digest from an operational point of view. Composite indices, however, despite their well-known shortcomings, allow us to synthesize complex information and may be more effective in stimulating public debate than a large number of individual scores that could result in cherry picking (OECD and JRC 2008). Widely used composite indices include the *Human Development Index*, the *Environmental Performance Index* (Wolf and Emerson et al. 2022), and the *Better Life Index* (OECD 2022a). The SDSN and partners have argued since 2017 that a combination of composite SDG metrics and dashboards is needed at the global, regional, and subnational levels to inform policies towards achieving complex integrated goals (Schmidt-Traub et al. 2017; Lafortune and Schmidt-Traub 2019). These metrics and dashboards can be combined with other instruments (from forward-looking models to policy trackers towards deep decarbonization and sustainable food and land systems) to increase accountability and guide action on key SDG transformations.

The SDG Index: method and participative process

When it comes to integrated assessment models and tools like the SDG Index, the process often matters as much as the results. The soundness, relevance, and practical utility of such models and tools depend not only on scientific robustness, but also on their ability to generate participative exchanges, and to connect with policymakers and other stakeholders. In the context of SDG monitoring in the European Union, we proposed a framework and set of criteria in 2019, in collaboration with the Economic and Social Committee (EESC), to assess "the robustness and fitness of SDG monitoring tools" – so that they could serve

as conversation-openers and contribute, along with other tools, to co-creating solutions with policymakers and stakeholders (Lafortune and Schmidt-Traub 2019).

The SDG Index measures countries' performance on the 17 SDGs. It both tracks distance to pre-defined performance thresholds (at one point in time) and evaluates whether countries are on-track or off-track (based on past growth rates extrapolated to 2030). Building on recommendations made in *Launching a Data Revolution* back in 2015, the SDG Index includes around 100 indicators (this year's edition includes precisely 97 global indicators), clustered by SDGs and normalized on a 0–100 scale using a classic min-max function. Scores are calculated using the arithmetic mean of normalized indicators and presented for each indicator, for individual goals, and for the SDGs as a whole. Performance bounds to denote SDG achievement for individual indicators are based on a clear decision tree, similar to the one used by the OECD in its assessment of distance to SDG targets (Lafortune et al. 2020; OECD 2019a). The Dashboards address the well-known problem of "compensation" in the construction of composite indices, in which good performance on some indicators compensates for poor performance on others, by focusing on the two lowest-scoring indicators under each goal (Lafortune et al. 2018).

The SDG Index methodology is fully transparent – and available online. It has been peer-reviewed by *Nature Geoscience* (Schmidt-Traub et al. 2017) and by Cambridge University Press. The global edition was statistically audited by the European Commission in 2019, who recognized that, "All things considered, the SDG Index is a noteworthy effort of synthetizing the 17 adopted SDGs into a single figure. Overall, the ranks of the SDG Index are fairly robust. The index is anchored on the 2030 Agenda for Sustainable Development adopted by all UN Member States and rigorously follows the same structure of 17 goals" (Papadimitriou, Neves, and Becker 2019).

It also builds on an inclusive and participative process. The SDG Index relies on inputs from the SDSN network of experts – the largest global network of scientists and experts mobilized for the SDGs – and other partner organizations. Each year, an open online consultation is conducted using draft SDG Index results before

Box 4.1   GIS for the SDGs: Assessing pedestrian accessibility in urban areas

In the 2030 Agenda for Sustainable Development and the associated New Urban Agenda, countries agreed to take action to provide cities with more accessible, well-connected infrastructure that would bring people into public spaces, and to enhance walkability through pedestrian accessibility.

Pedestrian accessibility is the extent to which the built environment facilitates walking access to destinations of interest, or the ability of urban residents to access services and opportunities. This metric is particularly useful for assessing spatial justice in cities, usually represented by disadvantaged communities being compelled to live in deteriorated urban areas that receive only a small share of public investments, resulting in low levels of accessibility.

Two sources of geographically explicit data were used to calculate this indicator. OpenStreetMap was used to collect data on pedestrian infrastructure and geographically allocated places of interest (POI): hospitals, schools, supermarkets, restaurants, schools, etc. Data on population density for each city was retrieved from the European Commission's 2020 Global Human Settlement Layer (GHSL), covering functional urban areas across the entire world. The GHSL provides data in the form of a 100 meter by 100 meter grid, in which each cell has an associated population-density value.

Figure 4.1

Map of Lagos, Nigeria, showing the scale at which calculations are performed (100 m² grid).
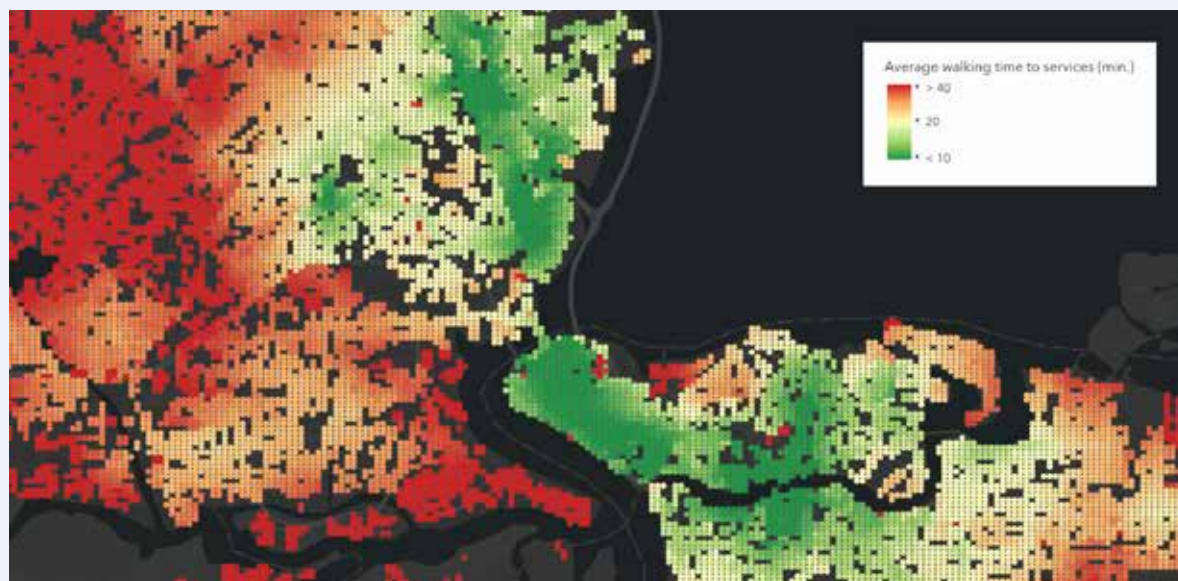
To assess accessibility to services for each urban area, we used **network analysis** to measure the distance separating each population cell grid from the closest amenities, divided by category, and considering the street network. This enabled us to quantify and map accessibility to urban infrastructure at the street intersection level. For each 100 m² cell in the population grid data, "walking time" reflects the time that a person residing inside that cell area would take to walk to the closest amenity from a given category of services, using existing pedestrian infrastructure.

The complete methodology, along with results and data visualizations, can be found on the SDG Transformation Centre website. Data processing used code written in Python: the code is publicly available on SDSN's Github page. The methodology for this indicator was adapted and expanded from Nicoletti et al. (2022), "Disadvantaged communities have lower access to urban infrastructure."

4. Lessons Learned and Next Steps

Box 4.2 GIS for the SDGs: Assessing accessibility to all-season roads in rural areas

SDG Indicator 9.1.1 considers the proportion of the rural population living within two kilometers of an all-season road: a road that is motorable throughout the year, although it may be temporarily unavailable during inclement weather.

To compute this indicator we used and expanded on the most recent official methodology put forward by the World Bank and the 2019 *Rural Access Index (RAI) Supplemental Guidelines* (Workman and McPherson, 2019). The *Sustainable Development Report 2023* represents, to date, the only publicly available application of this method at a global scale.

Calculating final country scores relies entirely on geospatial datasets and methods. The key steps of this calculation are: mapping all motorable roads, drawing a two-kilometer buffer around them, and determining the percentage of the rural population that resides within the buffer.
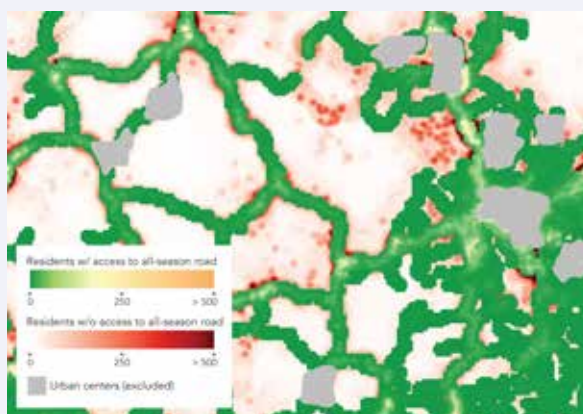
Figure 4.2

Diagram of a motorable road with the two-kilometer buffer applied, identifying rural populations living within and outside the buffer area
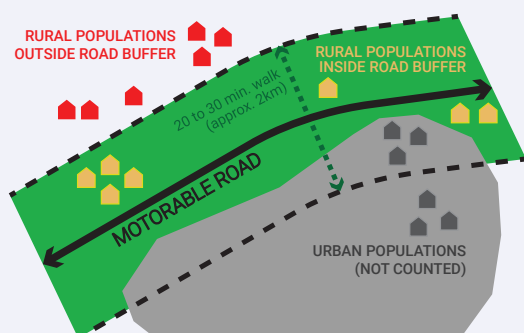
Figure 4.3

Example of the method as applied in rural Democratic Republic of the Congo

The particular challenge of this method lies in assessing whether or not a road provides all-season access. It is clear that simply discounting unpaved roads altogether is not realistic, as those often do provide all-year access to rural populations. Since no single, complete and timely road dataset is available to measure road access, several criteria were used to approximate a road's passability: road surface (paved or unpaved), accumulated precipitation, road slope, and data on the country's ability to keep roads motorable through infrastructure maintenance budgets (since the latter isn't available for all countries, GDP per capita was used as a proxy).

Rural areas within the unpaved roads' buffer zones are assessed on passability criteria, and their populations are scaled accordingly. For example, precipitation and slope criteria each represent a multiplying factor that ranges from 50% to 95%: if a buffer area is very steep, cliffed, and in a very wet climate, only 25% (50% x 50%) of the rural population accessing that road is considered to have access to it. GDP per capita is used as a correcting factor, as countries with the ability to invest in road infrastructure should be able to keep roads passable despite harsh terrain and adverse climate conditions.

The complete methodology, along with results and data visualizations, can be found on the SDG Transformation Centre website. Data processing used code written in Python and Javascript: the code is publicly available on SDSN's Github page. The methodology for this indicator was adapted and expanded from Workman and McPherson (2019), *Measuring Rural Access Using New Technologies: Supplemental Guidelines.*

Mr. Peter Schmidt
European Economic and Social Committee (EESC)
Agriculture, Rural Development and the Environment (NAT) Section, President

The European Economic and Social Committee (EESC) has been working together with SDSN for several years now, even before the launch of the first edition of the Europe Sustainable Development Report (ESDR) in 2019. The first ESDR report was based on earlier EESC work developed in cooperation with SDSN, on "Indicators better suited to evaluate the SDGs – the civil society contribution". The ESDR was intended to identify SDG policy gaps within the European Union. It was developed in response to the EESC's call for a monitoring report, to be produced in close collaboration with civil society organizations, that would complement Eurostat's annual SDG report.

Since 2019, the EESC has provided the SDSN with civil society perspectives and facilitated contacts and dialogues with stakeholders and EU policymakers, thus contributing to both the preparation and the dissemination of the ESDR. Several joint meetings and events have been organised in this context. The ESDR has served as a conversation-opener with business, trade unions, and NGOs to advance sustainable development policies and make recommendations to EU leadership, thereby promoting evidence-based discussions at the EU level. The ESDR has also provided a solid foundation of data and information for EU policy-making – it has been cited in landmark documents, such as the first EECS EU-level Voluntary Review of the implementation of the 2030 Agenda, and has inspired strong and meaningful policy proposals in the Committee's issued opinions. We look forward to continuing our cooperation with SDSN in the future.

the final report is presented. Indicator selection and performance thresholds are informed by several rounds of consultations with SDSN experts, scientists, and the general public. Around a third of the indicators come from outside official statistics (for example, from scientific papers or NGOs). This helps fill data gaps in official statistics, for instance, in the areas of international spillovers, sustainability of diets, or biodiversity. We are increasingly using space-based technologies to strengthen data availability and timeliness (boxes 4.1 and 4.2). While it takes several years to standardize international statistics, especially when methods need to be designed from scratch, our value-added is to fill existing gaps with third-party data where possible.

The SDG Index serves as a conversation opener within the research and policy community. As emphasized in the World Development Report 2021, "data alone cannot solve development problems: people … are the central actors transforming data into useful information that can improve livelihoods and lives" (World Bank 2021). We partner with regional and local organizations to prepare indices and

discuss results. As an illustration, the SDG Index for Europe is prepared with and discussed among the members of the European Economic and Social Committee (EESC) – a consultative body of the European Commission that gives representatives of Europe's socio-occupational interest groups (such as business associations, trade unions, and NGOs) and others a formal platform to express their points of view on EU issues (Lafortune et al. 2022). See Box 4.3 for additional information. Other data initiatives at SDSN, including the FABLE models for sustainable land-use systems, also rely on inclusive participatory processes, such as "scenathons" conducted by and with local country teams (FABLE 2021; Mosnier et al. 2022).

Frequent comments received on the SDG Index throughout the years

The SDG Index, including its regional and local editions, has been generally well received by the research and policy communities, and it has become the backbone of numerous collaborations with international institutions

and local organizations throughout the world. Comments submitted by governments, researchers, and practitioners either publicly or privately on the global SDG Index results and methodology tend to revolve around four main perceived issues: (1) The high SDG Index scores and ranks obtained by high-income countries, including European nations; (2) Data lags, gaps, and the treatment of national estimates; (3) Questions concerning the reliability of non-official statistics and their legitimacy in the context of the SDGs; and (4) The absence of a material footprint indicator.

On point (1), our results show that rich countries generally perform poorly and are not on track to achieving environmental goals (SDGs 12–15), and that poor countries need help to combat poverty. Rich European countries top the overall SDG Index. This reflects the nature of the SDGs, as European countries, particularly the Nordic economies, perform strongly on socioeconomic goals, relatively strongly on some local environmental priorities (for example, wastewater treatment, air pollution, or deforestation), and strongly on public institutions and the rule of law. Yet the SDG Dashboards rate rich countries, including Nordic countries, at "red" on several SDGs – particularly those related to responsible consumption and production, climate action, and biodiversity – meaning major challenges remain (Lafortune, Sachs, and Schmidt-Traub 2020). Many rich countries also face a significant challenge in achieving SDG 2 (Zero Hunger), which includes unsustainable agriculture, unsustainable diets, and obesity. The stringent grading method used for the SDG Dashboards highlights negative environmental spillovers that affect climate, biodiversity, or water scarcity in other countries. Compared with other SDG monitoring reports, however, the SDG Index generates far more negative scores for rich countries on SDGs 12–15 (Lafortune et al, 2020). The most recent European edition also highlights challenges related to the "leave-no-one-behind" principle in Europe, as trends on several indicators related to inclusion are not moving in the right direction.

Some commenters have recently pointed out that a country like Bhutan, which shows remarkable commitment to sustainable development and well-being (characterized notably by its use of the Gross National Happiness Index), performs less well on the SDG Index than, for example, Finland or other Nordic countries. The rate of extreme poverty at US$2.15/day is about 6 times higher in Bhutan than in Finland, while poverty at US$3.65/day is 15 times higher; Bhutan's maternal mortality rate (SDG target 3.1), at 60 in 100,000 live births, is more than 7 times that of Finland (8 in 100,000 live births), while its neonatal mortality rate is about 12 times that of Finland; and the incidence of tuberculosis in Bhutan is 47 times higher than in Finland. In Finland, 46 percent of parliamentarians are women, which is almost three times the rate in Bhutan, where only 17 percent of parliamentarians women. Overall, Bhutan performs lower than Finland on 14 of the 17 SDGs. The SDG Index acknowledges Bhutan's recent progress on many socioeconomic indicators, and calls for global partnerships to promote sustainable development progress and financing globally.

On point (2), national governments often argue that the SDG Index results are biased, due to missing data and lags in data reporting. It is true that the results often represent the performance of the previous governments. There are significant time lags in international statistics, that can exceed two or even three years, as well as persisting data gaps in certain countries and country groups. This is partly due to the chronic underfinancing of statistics in LICs and LMICs.

From a methodological standpoint, we do have techniques in our methodology to address missing-data bias and time lags. Countries are included in the SDG Index ranking only if they have data for at least 80 percent of the indicators (and one criterion for indicator inclusion is that data must be available for 80 percent of countries that have at least 1 million inhabitants). Some national authorities have in the past asked to incorporate their own national estimates in the SDG Index, to address time lags and gaps. However, national estimates cannot be included in the SDG Index unless they have been submitted, approved, and published by United Nations custodian agencies or other data providers. This is essential to ensure data quality and comparability. We do include some timelier, model-based estimates (for example, for poverty or health outcomes) and geospatial data. We also review our indicator selection annually and exclude particularly outdated data points and indicators that are not frequently updated.

Box 4.5 Cooperation between SDSN and the Government of the Republic of Benin in the context of the issuance of the first African SDG Bond

H.E. Minister Romuald Wadagni
Ministre d'Etat, Ministre de l'Economie et des Finances

In July 2021, to further the efforts it has made since 2016 to implement the SDGs, the Government of the Republic of Benin issued the first African SDG Bond, dedicated to financing projects that would have a significant positive impact on achieving the SDGs. Through this innovative financing instrument, Benin mobilized 500 million euros, with an average maturity of 12.5 years. Within this framework, the Ministry of Economics and Finance of the Government of the Republic of Benin has called upon SDSN to assist in monitoring and evaluating Benin's SDG progress and the efforts it has made towards the SDGs.

The *Benin Sustainable Development Report*, which was launched at the 2022 HLPF, includes detailed analyses of Benin's performance, progress, and gaps on the SDGs in comparison to neighboring ECOWAS countries, as well as looking at differences in SDG performance among Benin's twelve departments under the "leave-no-one-behind" paradigm. The SDG Index and SDSN's survey of government efforts are two of the tools used in this analysis. The 2023 edition of the Benin SDR will be released at the 2023 HLPF.

Furthering this technical partnership, the SDSN Benin network has been created, hence mobilizing the locally based expertise to assist the government's efforts towards sustainable development. The network is co-hosted by the University of Abomey-Calavi and the Research and Strategic Studies Directorate of the Ministry of Economy and Finance.

Strategically, the SDSN is very much committed to supporting global efforts to promote high-quality and timely data for the SDGs. Regional SDG Index editions (for Africa, Europe, and Latin America) and subnational editions (for provinces, states, regions, and municipalities) allow the indicator selection and policy discussion to be contextualized, and this data tends to be timelier (Box 4.4). In response to feedback, since 2018 we have supplemented the SDG Index with other qualitative instruments to gauge government efforts and commitment to the SDGs, in cooperation with SDSN's global network (Sachs et al. 2022; Lafortune, Woelm, and Valentiny 2022). Finally, TReNDS and its *Data For Now* initiative, along with other flagship initiatives at SDSN, such as *SDGs Today*, aim to foster partnerships across a variety of data providers and users to unlock the potential of new technologies.

On point (3), in an effort to accurately measure often overlooked issues, such as environmental challenges and international spillovers, the SDG Index includes high-quality official and unofficial metrics that fill gaps in the official SDG metrics. For example, the SDG Index has included carbon dioxide emissions since its inception in 2016, even though a measure of greenhouse gas emissions under SDG 13 (Climate Action) was only added to the official list in 2020 (Lafortune, Sachs, and Schmidt-Traub 2020). The SDG Index and Dashboards also include unofficial measures of unsustainable fishing practices and spillovers embodied in trade and aim to incorporate more geospatial data to improve timeliness and country coverage. In most cases, these indicators went through some form of peer-reviewed process and have been published in the literature which provides some guarantees about their quality and comparability. Others are widely recognized and used measures compiled by Transparency International, the World Justice Project, and Reporter Sans Frontières (among others).

On point (4), some advocate for greater use of material footprint indicators and indicators of natural resource use (Hickel 2020). While we agree that material resource use and consumption and their impacts on the environment are important policy issues, we stand by the decision not to include indicators of material footprint or "domestic material consumption" in the SDG Index. In their current form, these indicators present well-known weaknesses. In particular, they combine by weight vastly different materials that each have different environmental impacts. Moreover, they do not correlate material flows by weight with environmental impacts, which vary tremendously across countries. For example, one kilogram of biomass used in a humid tropical country has a different footprint from the same biomass consumption in a semi-arid country. As a result, it is very difficult to compare material consumption across countries or to define targets. We recommend instead using the spillover indicators included in the SDG Index and Dashboards to capture unsustainable consumption (Lafortune, Sachs, and Schmidt-Traub 2020).

Observed reuse and impact of the SDG Index

The SDG Index is a flagship instrument to promote awareness of the SDGs. The SDG Index ranking receives widespread attention from politicians and the media, which further helps to raise awareness about the SDGs and creates a "race to the top." Increasing awareness at all levels is critical to the success of the SDGs, and the global ranking draws attention to countries' challenges. As noted in the 2005 World Bank staff report, the main advantage of rankings is that "as in sports, once you start keeping score everyone wants to win." However, this also creates incentives to "game the system – or corrupt it," (*Washington Post* Editorial Board 2021), which is why the SDG Index is prepared by an independent group of experts and researchers, and its methodology and datasets are fully transparent.

The SDG Index is also an accountability tool that helps monitor progress and identify areas that need improvement. It is used extensively by national governments, civil society, and academia. We estimate that around 40 percent of the VNRs presented at the

United Nations by national governments in 2021 mentioned the SDG Index. It was also listed by the European Parliament among ten composite indicators useful for policy making (EPRS 2021) and was referenced in the Parliament's first SDG resolution in July 2022 (European Parliament 2022). Although it was not developed to be a standalone tool to inform investment decisions, the SDG Index is also increasingly used by public and private financial institutions (BPCE 2018). Alongside other data sources, it is notably being used to monitor the implementation of the first African SDG bond, issued by the government of Benin in July 2021 (SDSN 2022). See Box 4.5.

The Index also helps shed light on certain key topics, including international spillovers, and can serve as a basis to identify drivers of success and failure on SDG outcomes. For instance, our strong emphasis on quantifying domestic performance, as well as negative spillovers generated abroad via trade, has likely contributed (alongside many other initiatives) to raising awareness in the EU about such spillover effects. Our work has been referenced in policy briefs and in the literature (Arunima Malik et al. 2021; A Malik et al. 2021), a in parliament resolutions and government processes. In Europe, we partnered with Eurostat to improve the availability of data to track such spillovers, building on Multi-Regional Input-Output models, which is now a core chapter of Eurostat's SDG report (Eurostat 2022). In addition, Box 4.6 describes how the SDG Index has been used to explore linkages between structural vulnerabilities and SDG outcomes in SIDS (in cooperation with UN Resident Coordinators in SIDS, as well as other partners), and to promote ambitious policies and financing frameworks for SDG progress (See Box 4.6).

Finally, the SDG Index contributes to global efforts to improve data availability. Over the years, countries noted that certain key data points, notably on SDG10 (Reduced Inequalities), were missing in our report. This has led some of those countries to work with the World Bank and other UN custodian agencies to compile these data. In our experience, missing data in the SDG Index is often perceived by countries as a sign of weak data capacity.

Box 4.6 Partnership between SDSN and UN Resident Coordinators in SIDS

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At the request of the Alliance of Small Island States (AOSIS), the United Nations Resident Coordinators serving in Small Island Developing States (SIDS) launched an unprecedented cross-country and region joint project to develop the first Multidimensional Vulnerability Index (MVI) and to capture inherent vulnerabilities hindering SDG progress in SIDS. The MVI is intended to define special development contexts such as SIDS and to complement measures of per-capita gross national income (GNI) to enable vulnerable countries to access development financing beyond income graduation. The MVI project was coordinated by the UN Resident Coordinator in Samoa. To ensure consistency in measuring countries' development progress and to strengthen the robustness of the MVI, the UN Resident Coordinators in SIDS entered into a partnership with the SDSN team in Paris that expanded to include other analytical products for SIDS. The MVI was structured to capture sources of vulnerabilities that are non-self-inflicted and that generate human and economic losses and hinder development progress. The SDSN experts analyzed correlations between the value of a country's MVI and its SDG progress across the 17 SDGs as well as goal-specific results. The findings confirmed that the MVI designed in collaboration with SDSN captures with high precision the vulnerabilities that impede sustainable development progress as measured through the SDG Index, with the highest correlations in the areas of poverty, health and education outcomes, food insecurity, climate-change response, and biodiversity loss.

The partnership with SDSN continued with the creation of the first SDG financing gap measure to link the MVI to the actual financing needs of SIDS, and to the finance that must be made available to these countries if they are to be able to achieve sustainable development by 2030.

The triangle of the MVI, the SDG Index, and the SDG financing gap measure allows the United Nations Resident Coordinators in SIDS to identify policies and practices that have led to better SDG progress in countries with similar levels of multidimensional vulnerability. Furthermore, measuring SDG financing gaps of countries with similar MVI levels informs the analysis of a country's development finance model and the quality of the external financing it receives in terms of the areas targeted, the programme tools utilized, and the content of work.

The collaboration with SDSN is ongoing, with the first SIDS SDG Progress Report to be presented at the SDG Summit in September this year. Several iterations of a methodology being developed to measure losses and damages caused by climate change will also inform the upcoming Convention of Parties (COP28) in Dubai in December.

4.2 Have the SDGs increased data cooperation and innovation?

The SDGs' positive impact on fostering knowledge exchange and raising awareness

Although the SDGs have not yet completely transformed how policy is designed and implemented, as discussed in Part 3 and as is well-documented in the literature (Biermann et al. 2022; Kotzé et al. 2022; IGS 2023), they have helped to mobilize VNRs and peer learning, as well as spurring innovations in how progress is monitored, through the efforts of the IAEG-SDG. These indicators are now an important part of the evidence underpinning the more than 330 Voluntary National Reviews conducted to date to track countries' performance towards the SDGs.

The contribution of the SDGs towards a universally accepted framework for monitoring progress is critical.

Prior to the SDGs, countries lacked a standardized method of comparing their development performance with that of their peers across a broad array of development objectives (for example, health, education, climate, ending poverty, reducing inequalities, etc.). Nor did countries have a common language to discuss and share experiences when tackling these development issues. Furthermore, the SDGs have positively impacted discourse and knowledge exchange beyond government officials. Many civil-society and private-sector actors have become SDG-conversant, facilitating greater discourse within countries across government and non-government actors.

It is difficult to assess whether the adoption of the SDGs has in itself had a positive impact on the quantity and quality of international data available for sustainable development. According to the World Bank Statistical

Performance Indicators (SPI), the world progressed on average by 2.1 points over the period 2016–2022. The annual rate of progress for LICs and LMICs was faster than the world average and the HICs average, which denotes some degree of convergence. Using population-weighted averages, LMICs are now performing better than UMICs on the Statistical Performance Indicators. Progress in LMICs since 2016 has been driven by significant improvements in the SPI in some of the largest of these countries, including Bangladesh, Egypt, India, Indonesia, Nigeria, Pakistan, and the Philippines. Part of this progress might be due to investments in data capacities and statistics made during the MDG period. SIDS continue to be, by far, the group of countries with the greatest number of missing data points on the SDG Index – SIDS are missing 22 percent of SDG Index data on average, with some missing more than 50 percent.

Figure 4.4

Statistical Performance Indicators (SPI): Overall Score, 2016-2022
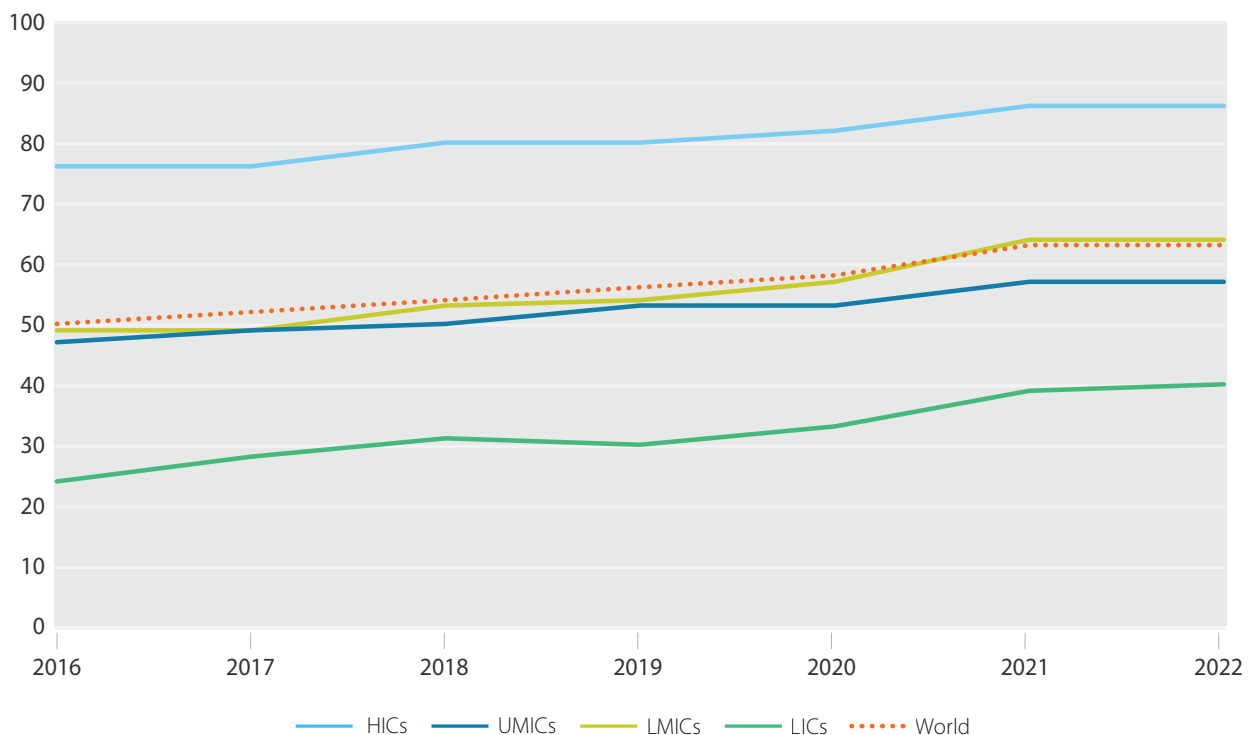
Note: From 0 (worst) to 100 (best).
Source: Authors' calculations, based on World Bank Statistical Performance Indicators (2023).

The impact of COVID-19 (and other crises?) on data innovation

One hypothesis, previously documented by TReNDS in the SDR 2022, is that the COVID-19 pandemic and possibly other crises may be important drivers of data innovation and collaboration. The pandemic triggered new intra-governmental collaborations to provide decision-makers with evidence to manage the crisis. Furthermore, having timely and high-quality data became a foundation for resilient and effective governments throughout the pandemic, forcing governments to adopt new processes to overcome the numerous obstacles that COVID-19 presented.

Across countries, pragmatic decisions have been made: to reprioritize staff and resources in order to modernize data capture methods and processes; to use non-traditional data sources to fill data gaps, including citizen science, social media, mobile, and satellite data; and to enhance data dissemination schemes to make it easier for policymakers and the general public to consume data. To achieve this feat, countries have embarked on a range of multi-disciplinary and cross-sector partnerships. In many countries, National Statistics Offices (NSOs), were innovators during the pandemic. They engaged in partnership activities that were previously few and far between – working with stakeholders across sectors, including civil society, the private sector, academia, and NGOs – to accelerate data innovations for policymaking and SDG attainment.

Policymakers responding to ongoing cascading crises are likely to continue the experimental and reactive approach to policy development that they adopted during the pandemic, including placing a premium on timelier and higher-quality data. As such, these crises are likely to be the primary driver of future innovations in data, to design and test public policies and programs moving forward. Thus, multilateralism and investments in global capacity-building and funding for statistics remain critical for short- and long-term improvements in information and data for sustainable development.

4.3. Conclusions and next steps

Building on the past ten years of work, including the SDG Index, TReNDS, and a number of SDSN's initiatives, we draw five major lessons, which can serve as priorities to inform SDG policies and financing.

1. **Science-based instruments are needed at all levels to guide SDG action and strengthen accountability.** There are no magic numbers, but rather a suite of tools – including indices, integrated assessment models, policy trackers, science panels, and geospatial tools – that when combined can strengthen government capacity to implement the SDGs and to target investments. SDSN's new flagship initiative – the SDG Transformation Center – aims precisely to provide a suite of science-based instruments and serve as a platform for peer-to-peer learning and exchange among scientists, practitioners, and investors on the next generation of SDG policy tools, analytics, and long-term pathways.

2. **Additional investments are needed in capacity-building for statistics.** The SDG Index and TReNDS' initiatives have, for some years now, highlighted the acute and persisting data gaps that prevail at the global level for the SDGs, as well as the need to accelerate partnerships and investments in statistical capacity (TReNDS 2019). Although the World Bank's Statistical Performance Indicators show signs of improvements in statistical systems since 2016, poor and vulnerable countries (including SIDS) still lack the necessary resources to implement the vision of the 2017 *Cape Town Global Action Plan for Sustainable Development Data* (HLG-PCCB, 2017). According to PARIS21, funding for data and statistics fell by almost US$100 million between 2019 and 2021, representing the most significant drop in funding since the start of the SDG era (OECD 2022b). And as highlighted at the UN World Data Forum in April 2023 and reiterated in the 27 April Hangzhou declaration: statistical capacity in the poorer and most vulnerable countries requires "an urgent and sustained increase in the level and scale of investments in data and statistics from domestic and international actors, from the public, private, and philanthropic sectors" (HLG-PCCB 2023).

3. **We need to invest in data and science literacy to strengthen the science-policy interface.** According to major international studies, few 15-year-old students can tell the difference between a fact and an opinion (OECD 2019b). In an information-rich and post-truth environment, citizens and decision-makers need knowledge and tools to transform data and science into evidence, actions, and long-term policies. Yet UNESCO estimates that there is a nearly US$100 billion finance gap for countries to reach their education targets (UNESCO 2023). The SDSN and its partners are increasingly collaborating with governments and parliaments – and also working closely with business associations, private financial institutions, trade unions, and academic organizations – to improve data literacy and support science-based policy discussions to advance the SDGs at the national and local levels. Strengthening the science-policy interface is key for implementing long-term pathways for sustainable development.

4. **Non-traditional statistics and science-based pathways help to address shortfalls in official statistics; they could be further leveraged to inform investment decisions.** Developing official international statistics takes time. Especially when no suitable methodologies or data-collection methods exist. Halfway into the SDGs, for instance, we lack a good-quality international metric, available to most countries, to track "mechanisms in place to enhance policy coherence of sustainable development" – indicator 17.14.1. Nevertheless, building on the improvements in the field of industrial ecology, the SDSN and its partners have included an evaluation of negative international spillovers (one component of sustainable development policy coherence) in the SDG Index since 2017. Non-official sources of statistics, such as citizen science, social media, earth observation data, artificial intelligence (AI), model-based estimates, and other pathways produced by academics and researchers, support greater accountability and can provide a forward-looking evaluation of efforts to implement the SDGs, complementing official statistics. Additionally, initiatives like the *Climate Action Tracker* help provide science-based and forward-looking

assessments of countries' ambitions and actions taken to further key SDG transformations. These types of assessments, as well as science-based decarbonization targets and food and land pathways, can be further leveraged in the design and assessment of public and private investment programs for the SDGs, including sustainability-themed bonds.

5. **Space-based technologies help address data gaps and timeliness, including supporting the "leave no one behind" principle; they can be further leveraged via global partnerships.** Time lags in international data reporting can exceed two to three years, including for key SDG indicators. With the elevated focus on and interest in data, COVID-19 has set the stage for new user expectations, with many users – especially the general public – now expecting to obtain data in real time (Sachs et al. 2022). The global community has mobilized space-based technologies to help provide more timely and granular information on the state of the global commons, or on access to key services (among others). In Europe, for instance, Copernicus, the EU's flagship Earth Observation and Monitoring program, was mobilized early on to improve SDG data availability, timeliness, and granularity. And the new SDGs-EYES program will establish "an integrated scientific, technological and user engagement framework, overcoming the knowledge and technical barriers that prevent the exploitation, combination and cross-feeding of data and tools" to support SDG action. At the global level, UN-GGIM and the Group on Earth Observations (GEO) aim to reduce the technical and legal barriers to using geospatial data and to strengthen multistakeholder partnerships. And TReNDS' Data for Now initiative is working to support countries' capacity to deliver robust and timely data to achieve the SDGs through user-centric approach, multistakeholder partnerships, and use of alternative data sources, including space-based technologies. The "TReNDS Data for Now" initiative draws on a user-centric approach, multistakeholder partnerships, and the use of alternative data sources such as space-based technologies to build countries' capacities to deliver accurate and timely data to achieve the SDGs.

Annex
Methods Summary and Data Tables

A.1 Interpreting the SDG Index and Dashboards results

The *Sustainable Development Report 2023* provides an assessment of progress made towards the SDGs by all UN Member States. The Report includes the SDG Index, in which scores are presented on a scale of 0 to 100 and can be interpreted as a percentage towards optimal SDG performance. Therefore, the difference between 100 and a country's SDG Index score is the distance, in percentage points, that must be overcome to reach optimum SDG performance. The same basket of indicators and similar performance thresholds are used for all countries, to generate comparable scores and rankings. To minimize missing-data bias, we do not calculate overall SDG Index scores or ranks for countries that are missing data on more than 20% of the indicators.

Substantial differences in rankings may result from small differences in aggregate SDG Index scores. This calls for caution when comparing country rankings. Differences of two or three positions between countries should not be interpreted as "significant", whereas a differences of 10 places may be ascribed to meaningful differences in performance. For further details, see the statistical audit by Papadimitriou et al. (2019) conducted on behalf of the EU Joint Research Centre (JRC).

The SDG Dashboards provide visual representations of countries' performance on the 17 SDGs. The "traffic light" color scheme (green, yellow, orange, and red) illustrates how far a country is from achieving a particular goal. The SDG Dashboards are presented for all countries where data permits, including those that are not included in the SDG Index. As in previous years, the SDG Dashboards and country profiles for OECD countries incorporate additional metrics that are not available for non-OECD members.

The SDG Trend Dashboards indicate whether a country is on track to achieve the goals by 2030, based on past performance. Trends are calculated for each indicator, building on annual growth rates since 2015 which are extrapolated to 2030. The country's resultant indicator trends are then aggregated at the goal level, to give an indication of how it is progressing towards each SDG.

This section provides a summary of the methods used to compute the SDG Index and Dashboards. More information can be found online in *SDG Index and Dashboards: Detailed Methodological Paper* (Lafortune et al., 2018). In 2019, the Joint Research Centre (JRC) of the European Commission conducted an independent statistical audit of the report's methodology and results, examining the conceptual and statistical coherence of the index's structure. Their audit report and additional data tables are available on our website: www.sdgindex.org

Due to time lags in international statistics, this year's edition does not capture most of the multiple impacts that the war in Ukraine has had on the SDGs, nor the impacts of other geopolitical and security crises that have emerged over the past 12–18 months. The data for Ukraine correspond to the situation before February 2022, as many data points have not been able to be updated since then. The inclusion of an indicator on exports of major conventional weapons should not be interpreted as a value judgment in the context of current conflicts, but rather as an effort to evaluate more generally the trend towards disarmament recognized by the United Nations and by civil society organizations as an important priority for peace, socio-economic stability, and sustainable development (UN Office for Disarmament Affairs, 2018; Amnesty International, 2008).

A.2 Changes to the 2023 edition and limitations

The 2023 SDG Index covers 166 countries. This year, the Report integrates further indicators that build on geographic information systems (GIS), to increase data availability and the timeliness of indicators related to access to road infrastructure and to key urban services. More information on these new geospatial indicators can be found in Part 3 of the report and in the online materials. This edition also incorporates one new spillover indicator – on modern slavery in international supply chains (Malik et al, 2022). Table A.1 summarizes these additions and identifies indicators that have been replaced or modified due to changes in the methodologies used and estimates produced by data providers. We have also introduced a refinement to the methodology used to evaluate trends for countries already exceeding SDG targets (explained in Section 3.A. below, the methodology overview).

For the first time, we present an overview of where the world as a whole stands on SDG progress, calculated using a population-weighted average for all UN Member States. Also included for the first time in this year's edition is an estimation of the percentage of SDG targets that are on track to be met by 2030 for all countries with sufficient data to be included in the SDG Index. More details on this calculation can be found in Section 3.A.

Limitations

Due to changes in the indicators and refinements in the methodology, SDG Index rankings and scores from one edition cannot be compared with the results from previous editions. However, Part 2 provides time series for the SDG Index, calculated retroactively using this year's indicators and methods, providing results that are comparable across time. The full time series for the SDG Index are available for download online.

Table A.1

New indicators and modifications

SDG	Indicator	Modification	Source
1	Poverty headcount ratio at $2.15/day (2017 PPP, %)	Modification: New global poverty line for low-income countries	World Data Lab
1	Poverty headcount ratio at $3.65/day (2017 PPP, %)	Modification: New global poverty line for lower-middle-income countries	World Data Lab
8	Victims of modern slavery embodied in imports (per 100,000 population)	New indicator	Malik et al (2022)
9	Rural population with access to all-season roads (%)	New indicator	SDSN (2023), based on Workman, R. & McPherson, K., TRL (2019)
11	Proportion of population with access to points of interest within a 15min walk (%)	New indicator	SDSN (2023), based on Nicoletti, L., Sirenko, M., & Verma, T. (2023)
12	Production-based nitrogen emissions (kg/capita)	Modification: now sourced from different Multi-regional input-output database, Gloria.	UNEP
12	Nitrogen emissions embodied in imports (kg/capita)	Modification: now sourced from different Multi-regional input-output database, Gloria.	UNEP
16	Expropriations are lawful and adequately compensated (worst 0 - 1 best)	Replaces "Property Rights (worst 1-7 best)"	World Justice Project
16	Property Rights (worst 1-7 best)	Removed due to suspension of future updates	World Economic Forum

Source: Authors' analysis

4. Lessons Learned and Next Steps

Despite our best efforts to identify data for the SDGs, several indicator and data gaps persist at the international level (Table A.2). Governments and the international community must increase investments in SDG data and monitoring systems, and build strong data partnerships to support informed SDG decisions and strategies.

To ensure the results are comparable across countries, we do not incorporate estimates received directly from national statistical offices. Data providers may adjust national data to ensure international comparability. As a result, some data points presented in this report may differ from data available from national sources. Moreover, the length of the validation processes of international organizations can lead to significant delays in publishing some data. National statistical offices may therefore have more recent data for some indicators than presented in this report.

Table A.2

Major indicator and data gaps for the SDGs

SDG	Issue	Desired metrics
2	Agriculture and nutrition	Food loss and food waste Global yield gap statistics
3	Health	Health care system resilience and preparedness to face global health risks Internationally comparable survey data on unmet care needs
4	Education	Internationally comparable measures of the quality of primary and secondary education Early childhood development (access and quality)
5	Women empowerment	Gender pay gap and other empowerment measures Violence against women
6	Water	Quality of drinking water and surface waters
8	Decent work	Decent work
10	Inequality	Wealth inequality Vertical mobility
12	Sustainable consumption	Environmental impact of transboundary physical flows (e.g. air pollution through wind, water pollution through rivers) Recycling and re-use (circular economy) Hazardous chemicals
13	Climate Action	Robust indicators of climate adaptation
14	Marine ecosystems	Maximum sustainable yields for fisheries Impact of high-sea and cross-border fishing
15	Terrestrial ecosystems	Leading indicators for ecosystem health Trade in endangered species
16	Peace and justice	Violence against children
17	Means of implementation	Climate finance Development impact of trade practices Lead international indicator to track Policy Coherence for Sustainable Development

Source: Authors' analysis

A.3 Methodology (overview)

The Sustainable Development Report provides a comprehensive assessment of distance from targets based on the most current data available covering all 193 UN Member States. This year's report includes 97 global indicators, with 27 additional indicators included specifically for OECD countries (due to better data coverage in these countries).

The following sections provide an overview of the methodology used to select, normalize and aggregate indicators, and to generate indications of trends over time. Additional information is available online, including raw data, additional data tables and sensitivity tests.

1. Data selection

Where possible, the *Sustainable Development Report* uses official SDG indicators endorsed by the UN Statistical Commission. Where there are data gaps or insufficient data for an official indicator, we include other metrics from official and unofficial providers. Five criteria for indicator selection were used to determine suitable metrics for inclusion in the report:

1. Global relevance and applicability to a broad range of country settings.

2. Statistical adequacy: The indicators selected represent valid and reliable measures.

3. Timeliness: The indicators selected are up-to-date and published on a reasonably prompt basis.

4. Coverage: There must be data available for at least 80% of UN Member States with a population greater than one million.[1]

5. Measurability of distance to targets: This must be able to be measured so that optimal performance can be determined.

Data sources

The data included in this report come from a mix of official and non-official sources. Most (around two-thirds) are drawn from the databanks of international organizations (FAO, ILO, OECD, UNICEF, WHO, World Bank, and other sources) which follow extensive and rigorous data-validation processes. Other data sources (around one-third) include less traditional statistics, such as household surveys (Gallup World Poll), civil society organizations and networks (including Oxfam, Tax Justice Network, World Justice Project, or Reporters sans Frontières), peer-reviewed journals (for example, to track international spillovers) and geographic information systems (GIS). These non-official sources complement other data sources and help increase data availability and timeliness for key SDG indicators and targets. The full list of indicators and data sources is available online. The data for this year's edition were extracted between February and April 2023.

2. Missing data and imputations

To minimize biases from missing data, the SDG Index only includes countries that have data for at least 80% of the indicators or that have been in previous editions of the SDG Index and have data for at least 75% of the indicators.[2] The list of countries not included in the SDG Index due to missing data is presented in Table A.3 below. We do, however, include all UN Member States in the SDG Dashboards and we feature country profiles for each one. These profiles also indicate any gaps in a country's available SDG data.

Due to the lack of widely accepted statistical models for imputing country-level data for many SDG priorities, we do not generally impute or model missing data apart from a few exceptional circumstances. The list of indicators where imputations have been performed is available online in the Codebook.

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1. There are two exceptions to this rule: (i) Exports of hazardous pesticides; (ii) Children involved in child labor.

2. This applies to Barbados, Cabo Verde, Comoros, the Maldives, and Sao Tome and Principe.

3. Method used to construct the SDG Index and Dashboards

The procedure for calculating the SDG Index comprises three steps: (i) establish performance thresholds and censor extreme values from the distribution of each indicator; (ii) rescale the data to ensure comparability across indicators (normalization); (iii) aggregate the indicators within and across SDGs.

Establishing performance thresholds

To make the data comparable across indicators, each variable was rescaled from 0 to 100 – with 0 denoting the worst performance and 100 describing the optimum. Rescaling is sensitive to the choice of limits, as extreme values (outliers) risk becoming unintended thresholds that can introduce spurious variability in the data. Consequently, the choice of upper and lower bounds can affect the relative ranking of countries in the index.

The upper bound for each indicator was determined using the following decision tree:

1. Use the absolute quantitative thresholds of the SDGs and targets: e.g., zero poverty, universal school completion, universal access to water and sanitation, full gender equality.

2. Where no explicit SDG target is available, apply the principle of "leave no one behind" to set the upper bound to universal access, or zero deprivation.

3. Where science-based targets exist that must be achieved by 2030 or later, use these to set the 100% upper bound (e.g., zero greenhouse gas emissions from CO_2 as required by no later than 2050 to limit global warming to 1.5°C, 100% sustainable management of fisheries).

4. For all other indicators, use the average of the top five performers.

These principles interpret the SDGs as "stretch targets" and focus attention on those indicators where a country is lagging behind. The lower bound was defined at the 2.5th percentile of the distribution. Each indicator distribution was censored, so that all values exceeding the upper bound scored 100, and values below the lower bound scored 0.

Normalization

After establishing the upper and lower bounds, variables were transformed linearly to a scale between 0 and 100 using the following rescaling formula for the range [0; 100]:

$$x' = \frac{x - min(x)}{max(x) - min(x)} \times 100$$

where x is the raw data value; max/min denote the upper and lower bounds, respectively; and x' is the normalized value after rescaling.

The rescaling equation ensured that all rescaled variables were expressed as ascending variables (i.e., higher values denoted better performance). In this way, the rescaled data became easy to interpret and compare across all indicators: a country that scores 50 on a variable is halfway towards achieving the optimum value, whereas a country with a score of 75 has covered three quarters of the distance from worst to best.

Weighting and aggregation

Several rounds of expert consultations on earlier drafts of the SDG Index made it clear that there is little consensus across different epistemic communities on assigning higher weights to some SDGs over others. As a normative assumption, we therefore opted to assign a fixed, equal weight to every SDG, to reflect policymakers' commitment to treat all SDGs equally and as an integrated and indivisible set of goals. This implies that countries need to pay attention to all goals to improve their SDG Index score, but focus particularly on those where they are furthest from achieving the SDGs and where incremental progress might therefore be expected to be fastest.

To compute SDG Index scores, we first estimate scores on each goal using the arithmetic mean of indicators for that goal. These goal scores are then averaged across all 17 SDGs to obtain the final Index score. Various sensitivity tests were carried out, with the results available online, including comparisons of arithmetic mean versus geometric mean and Monte-Carlo simulations at the Index and Goal level. Monte-Carlo simulations call for prudence in interpreting small differences between countries' Index scores and rankings, however, as these may be sensitive to the weighting scheme.

Dashboards

We introduced additional quantitative thresholds for each indicator to group countries in a "traffic light" table. Thresholds were established based on statistical techniques and through various rounds of consultations with experts conducted since 2016.

Averaging across all indicators for an SDG might hide areas of policy concern if a country performs well on most indicators but faces serious shortfalls on one or two metrics within one SDG (this is often referred to as the issue of "substitutability" or "compensation"). This applies particularly to high-income and upper-middle-income countries that have made significant progress on many SDG dimensions but may face serious shortfalls on individual variables, for example on the sustainability of diets and agriculture within SDG 2.

As a result, the SDG Dashboards focus exclusively on the two variables on which a country or region performs worst. To this end, the indicator values were first rescaled from 0 to 3 according to how they compared to the thresholds. Values worse than the red threshold were rescaled (using a min-max formula) from 0 to 1 where 0 corresponds to the lower bound and 1 to the value of the red threshold. Values better than the green threshold were rescaled from 2 to 3 where 2 corresponds to the value of the green threshold and 3 to the upper bound. The values between these two
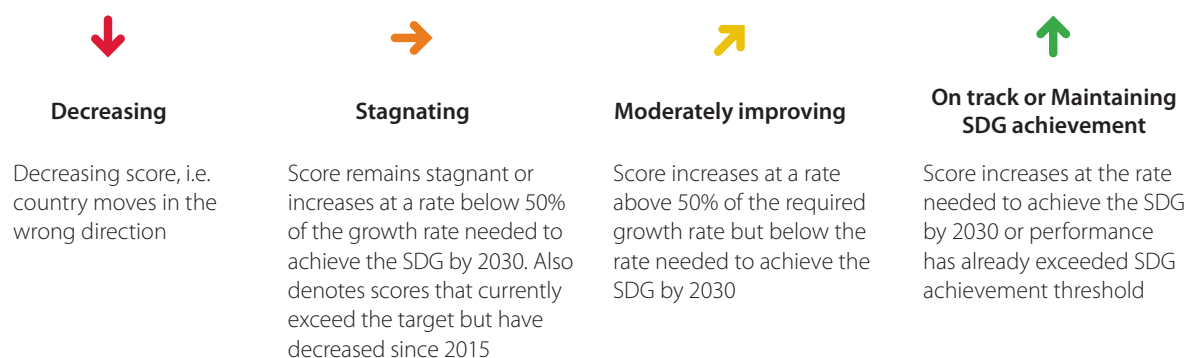
thresholds were similarly rescaled, and for all indicators the yellow/orange threshold was set as the value halfway between the red and green thresholds (1.5 after rescaling). Each interval between 0 and 3 is continuous. We then took the average of the two rescaled variables on which the country performed worst to identify the rating for the goal. We added the rule that a red rating is applied only if both the worst-performing indicators score red. Similarly, to score green, both of the best-performing indicators must be green. If the country has less than 50% of the indicators available under a goal the dashboard color for that goal is "grey". The quantitative thresholds used to generate the dashboards are available in Table A.5.

SDG Trends

Using historic data, we estimate how fast a country has been progressing towards an SDG and determine whether – if extrapolated into the future – this pace will be sufficient to achieve the SDG by 2030. For each indicator, SDG achievement is defined by the green threshold set for the SDG Dashboards. The difference in percentage points between the green threshold and the normalized country score denotes the gap that must be closed to meet that goal. To estimate trends at the indicator level, we calculated the linear annual growth rates (annual percentage improvements) needed to achieve the target by 2030 (growth from 2015 to 2030), which we compared to the
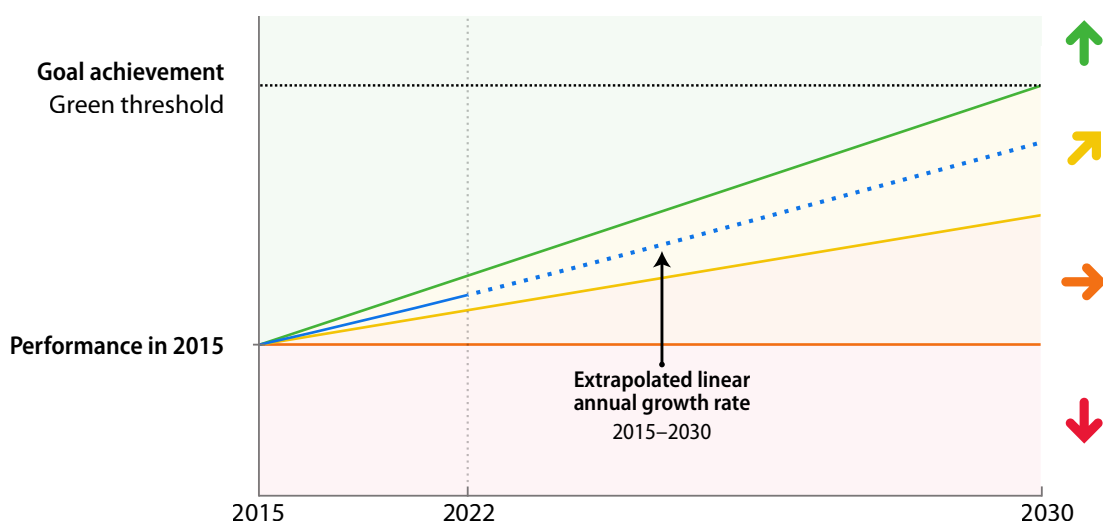
Figure A.1

The Four-arrow system for denoting SDG trends

Decreasing	**Stagnating**	**Moderately improving**	**On track or Maintaining SDG achievement**
Decreasing score, i.e. country moves in the wrong direction	Score remains stagnant or increases at a rate below 50% of the growth rate needed to achieve the SDG by 2030. Also denotes scores that currently exceed the target but have decreased since 2015	Score increases at a rate above 50% of the required growth rate but below the rate needed to achieve the SDG by 2030	Score increases at the rate needed to achieve the SDG by 2030 or performance has already exceeded SDG achievement threshold

Figure A.2

Graphic representation of the methodology for SDG trends

Source: Authors' analysis

average annual growth rate over the most recent period since the adoption of the SDGs in 2015 (2015–2022). Progress towards achievement on a particular indicator is described using a four-arrow system (Figure A.1). Figure A.2 illustrates the methodology graphically. Because time-series data is required for these calculations, indicators with only one or very few data points across time could not be used for these analyses. The list of indicators used to generate the trend indications is available in Table A.6.

To estimate the overall trend for an SDG, each indicator trend was assigned a value on a scale from 0 to 4 based on its growth rate. Indicators with decreasing growth rates were rescaled (using a min-max formula) from 0 to 1 where 0 corresponds to the worst decrease across countries on an indicator and 1 corresponds to an absolute stagnation over time (growth rate of 0). Increasing growth rates were similarly rescaled into intervals of 1 to 2, 2 to 3, and 3 to 4, where 2 corresponds to half the growth rate necessary to achieve the green threshold, 3 corresponds to exactly the growth rate needed to achieve the green threshold, and 4 to the highest growth rate among the countries on a given indicator. Each of the four intervals between 0 and 4

is continuous. The trend for an SDG was calculated as the arithmetic average of all the re-scaled values of the trend indicators for that goal. An average between 0 and 1 corresponds to a "decreasing" goal trend, between 1 and 2 to a "stagnating" goal trend, between 2 and 3 to a "moderately improving goal trend", and finally between 3 and 4 to an "on track" goal trend. Overall goal trends were not calculated for countries missing a goal-level dashboard.

Since the projections are based on past growth rates over several years, a country might have observed a decline in performance in the past year (for instance due to the impact of COVID-19) but still be considered as being on track. This methodology emphasizes long-term structural changes that have occurred since the adoption of the SDGs in 2015, rather than focusing on annual changes that may be temporary or cyclical. This year we introduced a refinement to the methodology whereby countries that currently exceed the target for an indicator but have seen a decrease since 2015 are assigned an orange arrow. This is because if the decreasing trend continues, the country may no longer meet the SDG target in the future.