WORLD POPULATION PROSPECTS: THE 2017 REVISION

SUMMARY AND KEY FINDINGS

People and therefore populations are at the centre of sustainable development and will be influential in the realization of the 2030 Agenda for Sustainable Development. The *2017 Revision* of the *World Population Prospects* is the twenty-fifth round of official United Nations population estimates and projections, which have been prepared since 1951 by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. The *2017 Revision* builds on previous revisions by incorporating additional results from the 2010 and 2020 rounds of national population censuses as well as findings from recent specialized sample surveys from around the world. The *2017 Revision* provides a comprehensive set of demographic data and indicators to assess population trends at the global, regional and national levels and to calculate many other key indicators commonly used by the United Nations system.

Snapshot of global population in 2017

According to the results of the *2017 Revision*, the world's population numbered nearly 7.6 billion as of mid-2017 (table 1), implying that the world has added approximately one billion inhabitants over the last twelve years. Sixty per cent of the world's people live in Asia (4.5 billion), 17 per cent in Africa (1.3 billion), 10 per cent in Europe (742 million), 9 per cent in Latin America and the Caribbean (646 million), and the remaining 6 per cent in Northern America (361 million) and Oceania (41 million). China (1.4 billion) and India (1.3 billion) remain the two most populous countries of the world, comprising 19 and 18 per cent of the global total, respectively.

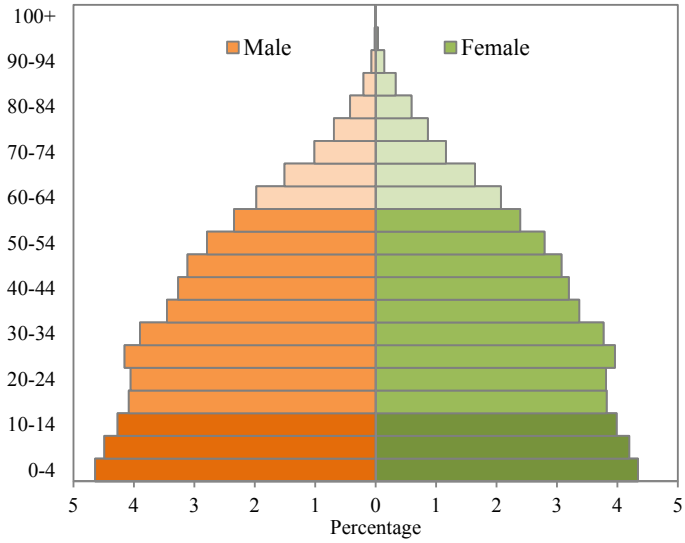
TABLE 1. POPULATION OF THE WORLD AND REGIONS, 2017, 2030, 2050 AND 2100, ACCORDING TO THE MEDIUM-VARIANT PROJECTION

Region	*Population (millions)*			
	2017	*2030*	*2050*	*2100*
World	7 550	8 551	9 772	11 184
Africa	1 256	1 704	2 528	4 468
Asia	4 504	4 947	5 257	4 780
Europe	742	739	716	653
Latin America and the Caribbean	646	718	780	712
Northern America	361	395	435	499
Oceania	41	48	57	72

Source: United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects: The 2017 Revision*. New York: United Nations.

At the global level, the numbers of men and women are roughly equal, with the male population being slightly larger than the female population. Currently, in 2017, there are 102 men for every 100 women. Thus, in a group of 1,000 people selected at random from the world's population, 504 would be male and 496 would be female on average (figure 1). Children under 15 years of age represent roughly one quarter of the world's inhabitants (26 per cent), while older persons aged 60 or over account for just over one eighth (13 per cent). More than half (61 per cent) are adults between 15 and 59 years of age. If the total number of people were split in half according to the age distribution of the world's population (at the median age), one group would bring together all persons younger than 30 years of age, while the other would include everyone aged 30 years or older.

Figure 1. Distribution of the world's population by age and sex, 2017

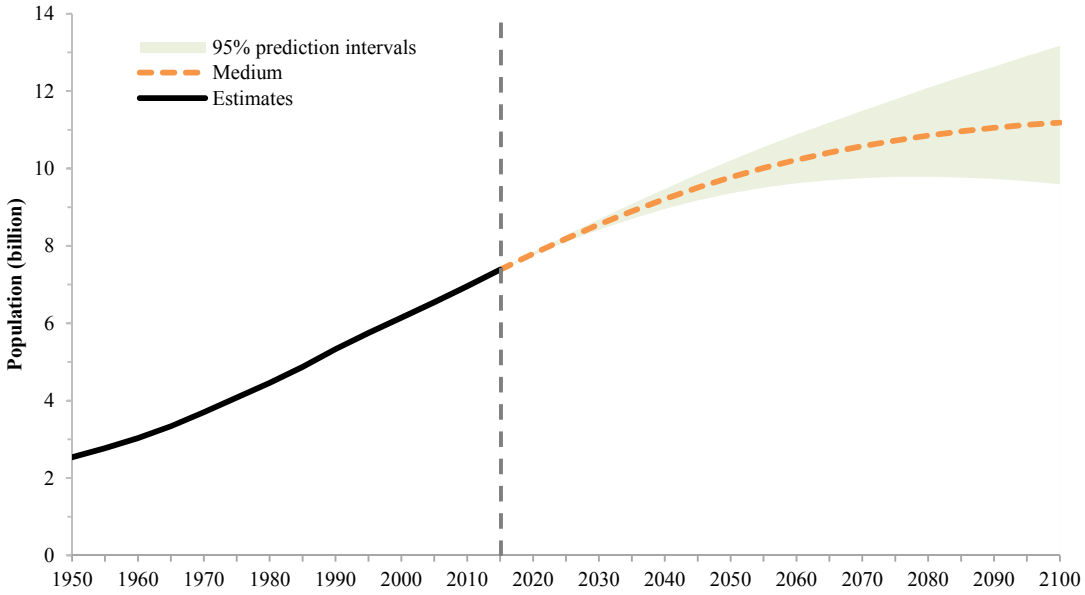


Source: United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects: The 2017 Revision*. New York: United Nations.

Projected growth of the global population

Today, the world's population continues to grow, albeit more slowly than in the recent past. Ten years ago, the global population was growing by 1.24 per cent per year. Today, it is growing by 1.10 per cent per year, yielding an additional 83 million people annually. The world's population is projected to increase by slightly more than one billion people over the next 13 years, reaching 8.6 billion in 2030, and to increase further to 9.8 billion in 2050 and 11.2 billion by 2100 (table 1).

Figure 2. Population of the world: estimates, 1950-2015, and medium-variant projection with 95 per cent prediction intervals, 2015-2100



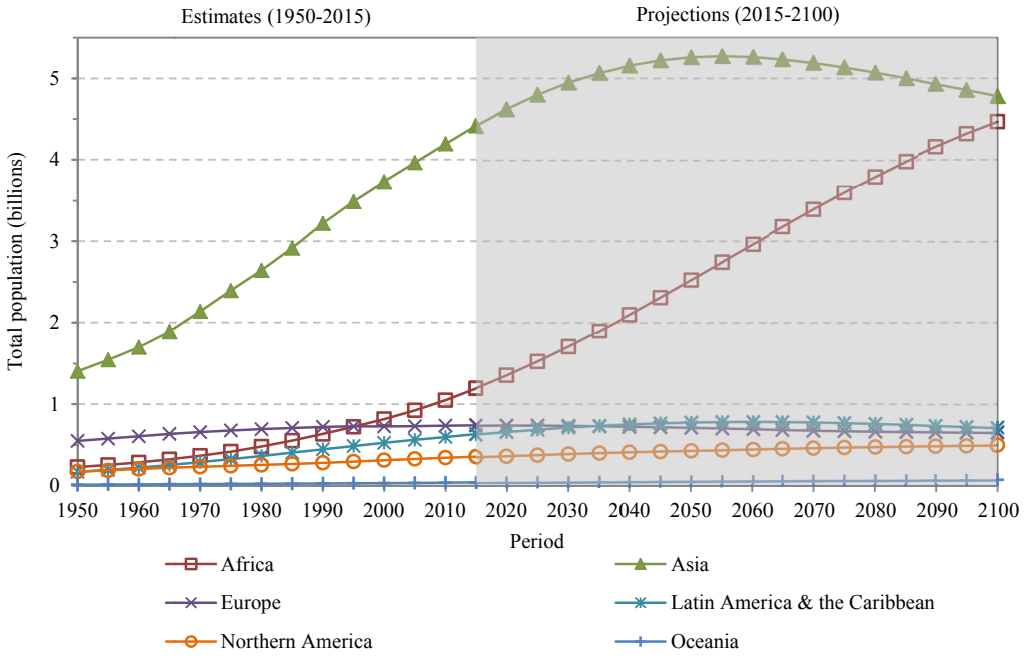
Source: United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects: The 2017 Revision*. New York: United Nations.

There is inherent uncertainty in population projections, which depend on assumptions about plausible future trends in specific demographic variables. The results presented above for future years are based on the medium-variant projection of the *2017 Revision*, which assumes a decline of fertility for countries where large families are still prevalent, as well as a slight increase of fertility in several countries where women have fewer than two live births on average over a lifetime. Survival rates are projected to increase in all countries as death rates continue to decline throughout the age range. The uncertainty surrounding the projected trends in fertility and mortality has been assessed using statistical methods that generate statements about a range of plausible outcomes. For example, the analysis has concluded that, with a certainty of 95 per cent, the size of the global population will stand between 8.4 and 8.7 billion in 2030, between 9.4 and 10.2 billion in 2050, and between 9.6 and 13.2 billion in 2100 (figure 2). Thus, the size of the world's population is virtually certain to rise over the next few decades. Later in the century, although a continued increase of the global population is considered the most likely outcome, there is roughly a 27 per cent chance that the world's population could stabilize or even begin to fall sometime before 2100.

Diversity in population growth rates across regions

More than half of the anticipated growth in global population between now and 2050 is expected to occur in Africa (figure 3). Of the additional 2.2 billion people who may be added between 2017 and 2050, 1.3 billion will be added in Africa. Asia is expected to be the second largest contributor to this future growth, adding just over 750 million people between 2017 and 2050. Africa and Asia will be followed by Latin America and the Caribbean, Northern America and Oceania, where growth is projected to be much more modest. In the medium-variant projection, Europe is the only region with a smaller population in 2050 than in 2017. Beyond 2050, Africa will be the main contributor to global population growth.

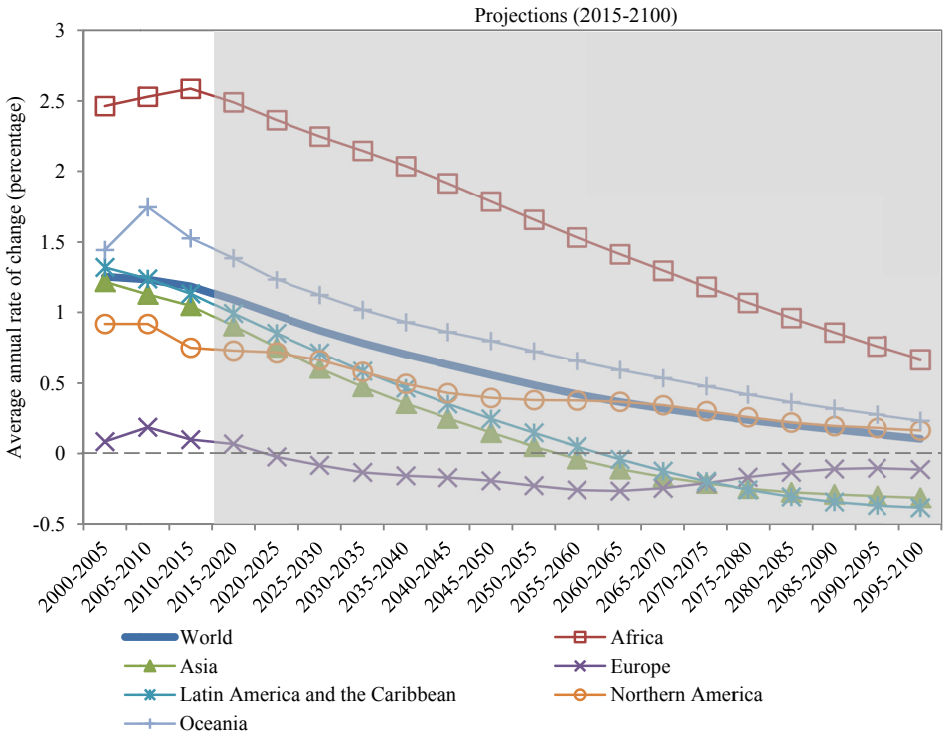
Figure 3. Population by region: estimates, 1950-2015, and medium-variant projection, 2015-2100



Source: United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects: The 2017 Revision*. New York: United Nations.

Although the world's population is expected to continue growing until the end of the 21st century, the rate at which this growth will occur is expected to continue to fall. In recent years, the population of Africa has had the fastest growth among all regions, increasing at a rate of 2.6 per cent annually in 2010-2015; however, this rate is beginning to fall and is projected to reach 1.8 in 2045-2050 and 0.66 in 2095-2100 (figure 4).

Figure 4. Average annual rate of population change for the world and by region, estimates, 2000-2015, and medium-variant projection, 2015-2100



Source: United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects: The 2017 Revision*. New York: United Nations.

Rapid population growth in Africa is anticipated even assuming that there will be a substantial reduction of fertility levels in the near future. The medium-variant projection assumes that fertility in Africa will fall from around 4.7 births per woman[1] in 2010-2015 to 3.1 in 2045-2050, reaching a level slightly above 2.1 in 2095-2100. After 2050, it is expected that Africa will be the only region still experiencing substantial population growth. As a result, Africa's share of global population, which is projected to grow from roughly 17 per cent in 2017 to around 26 per cent in 2050, could reach 40 per cent by 2100. At the same time, the share residing in Asia, currently estimated as 60 per cent, is expected to fall to around 54 per cent in 2050 and 43 per cent in 2100. It should be noted that the population of Africa will continue to increase in future decades even if the number of births per woman falls instantly to the level required for stabilization of population size in the long run, known also as "replacement-level fertility". Growth continues in that scenario thanks to the age structure of the population, which is currently quite youthful. The large numbers of children and youth in Africa today will reach adulthood in future decades. Because of their large numbers, their childbearing will contribute to a further increase of population even assuming that they will bear fewer children on average than their parents' generation. In all plausible scenarios of future trends, Africa will play a central role in shaping the size and distribution of the world's population over the next few decades.

[1] Throughout this report, when fertility is measured by the average number of births per woman, this refers to live births only.

Population growth remains especially high in the group of 47 countries designated by the United Nations as the least developed countries (LDCs), including 33 countries in Africa. [2] Although the growth of LDCs is projected to slow from its current annual rate of 2.4 per cent, the population of this group is projected to nearly double in size from 1 billion inhabitants in 2017 to 1.9 billion in 2050, and to increase further to 3.2 billion in 2100. Between 2017 and 2100, the populations of 33 countries, most of them LDCs, have a high probability of at least tripling in size. Among them, the populations of Angola, Burundi, Niger, Somalia, the United Republic of Tanzania and Zambia are projected to be at least five times as large in 2100 as they are today. The concentration of population growth in the poorest countries will make it harder for those governments to eradicate poverty, reduce inequality, combat hunger and malnutrition, expand and update education and health systems, improve the provision of basic services and ensure that no-one is left behind.

Continued low fertility to lead to shrinking population in some countries

In sharp contrast, the populations of another 51 countries or areas of the world are expected to decrease between 2017 and 2050. Several countries are expected to see their populations decline by more than 15 per cent by 2050, including Bulgaria, Croatia, Latvia, Lithuania, Poland, Republic of Moldova, Romania, Serbia, Ukraine and the United States Virgin Islands. Fertility in all European countries is now below the level required for replacement of the population in the long run (around 2.1 births per woman, on average) and, in most cases, has been below the replacement level for several decades. Fertility for Europe as a whole is projected to increase from 1.6 births per woman in 2010-2015 to nearly 1.8 in 2045-2050. Such an increase, however, will not prevent a likely contraction in the size of the total population.

Most of the increase in global population can be attributed to a small number of countries

Much of the overall increase in population between now and 2050 is projected to occur either in high-fertility countries, mostly in Africa, or in countries with large populations. From 2017 to 2050, it is expected that half of the world's population growth will be concentrated in just nine countries: India, Nigeria, Democratic Republic of the Congo, Pakistan, Ethiopia, the United Republic of Tanzania, the United States of America, Uganda and Indonesia (ordered by their expected contribution to total growth).

The new projections include some notable findings at the country level. For example, in roughly seven years, the population of India is expected to surpass that of China. Currently, the population of China is approximately 1.41 billion compared with 1.34 billion in India. In 2024, both countries are expected to have roughly 1.44 billion people. Thereafter, India's population is projected to continue growing for several decades to around 1.5 billion in 2030 and approaching 1.66 billion in 2050, while the population of China is expected to remain stable until the 2030s, after which it may begin a slow decline.

Among the ten largest countries of the world, one is in Africa (Nigeria), five are in Asia (Bangladesh, China, India, Indonesia, and Pakistan), two are in Latin America (Brazil and Mexico), one is in Northern America (United States of America), and one is in Europe (Russian Federation). Amongst these, Nigeria's population, currently the seventh largest in the world, is growing the most rapidly. Consequently, the population of Nigeria is projected to surpass that of the United States shortly before 2050, at which point it would become the third largest country in the world. In 2050, the populations in six of the ten largest countries are expected to exceed 300 million: China, India, Indonesia, Nigeria, Pakistan, and United States of America (in alphabetical order).

[2] The group of least developed countries, as defined by the United Nations General Assembly in its resolutions (59/209, 59/210, 60/33, 62/97, 64/L.55, 67/L.43, 64/295 and 68/18) included 47 countries as of 4 June 2017: 33 in Africa, 9 in Asia, 4 in Oceania and one in Latin America and the Caribbean.

Future population growth is highly dependent on the path that future fertility will take

The population trends projected as part of the medium variant are an outcome of substantial projected declines in fertility. According to the medium variant of the *2017 Revision*, global fertility is projected to fall from just over 2.5 births per woman in 2010-2015 to around 2.4 in 2025-2030 and 2.0 in 2095-2100. Steep reductions are projected for the group of least developed countries, which currently has a relatively high average level of fertility, estimated at 4.3 births per woman in 2010-2015, and projected to fall to around 3.5 in 2025-2030 and 2.1 in 2095-2100. However, for countries with high levels of fertility, there is significant uncertainty in projections of future trends, even within the 15-year horizon of the 2030 Agenda for Sustainable Development, and more so for the projections to 2100. Fertility declines that are slower than projected would result in higher population totals in all subsequent time periods. The potential effect on the global population of a slower decline in fertility is illustrated by the upper bound of the prediction interval in figure 2 (see above).

To achieve the substantial reductions in fertility projected in the medium variant, it will be essential to support continued improvements in access to reproductive health care services, including family planning, especially in the least developed countries, with a focus on enabling women and couples to achieve their desired family size.

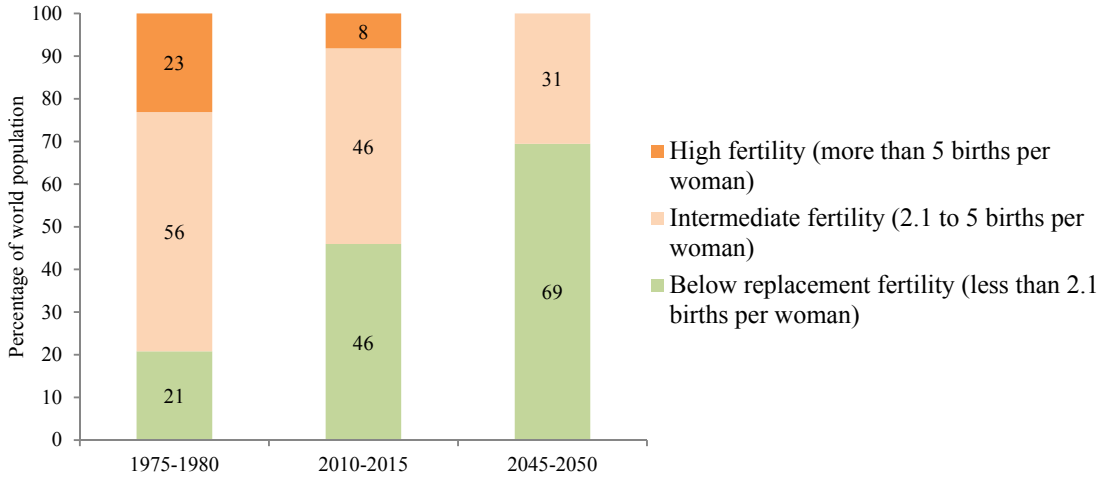
Large variations in fertility levels across countries and regions

In recent decades many countries have experienced major reductions in the average number of births per woman (figure 5). While in 1975-1980, close to a quarter of the world's population lived in countries where fertility was above five births per woman, in 2010-2015 only 8 per cent of the world's population lived in countries with fertility in this range. Of the 22 countries with relatively high levels of fertility in the most recent period, 20 are found in Africa and 2 in Asia. The largest are Nigeria, the Democratic Republic of Congo, the United Republic of Tanzania, Uganda and Afghanistan. In 2045-2050, it is expected that no country will experience a fertility level greater than five births per woman.

In 2010-2015, around 46 per cent of the world's population lived in intermediate-fertility countries, where women have on average between 2.1 and 5 births over a lifetime. Intermediate-fertility countries are found in many regions, with the largest being India, Indonesia, Pakistan, Bangladesh, Mexico and the Philippines. In 2045-2050, it is expected that slightly less than a third of the world's population will live in countries with fertility in this range. By that time, most of the world's population will be living in countries with relatively low levels of fertility, where women bear fewer than 2.1 children on average.

In 2010-2015, 46 per cent of the world's population lived in countries with a fertility level below 2.1 births per woman. Low-fertility countries now include all of Europe and Northern America, plus 19 countries of Asia, 15 in Latin America and the Caribbean, 3 in Oceania and 2 in Africa. The largest low-fertility countries are China, the United States of America, Brazil, the Russian Federation, Japan and Viet Nam (in order of population size). In 2045-2050, it is expected that 69 per cent of the world's population will live in countries where women give birth to fewer than 2.1 children on average.

Figure 5. Distribution of the world's population by level of total fertility, 1975-1980, 2010-2015 and 2045-2050



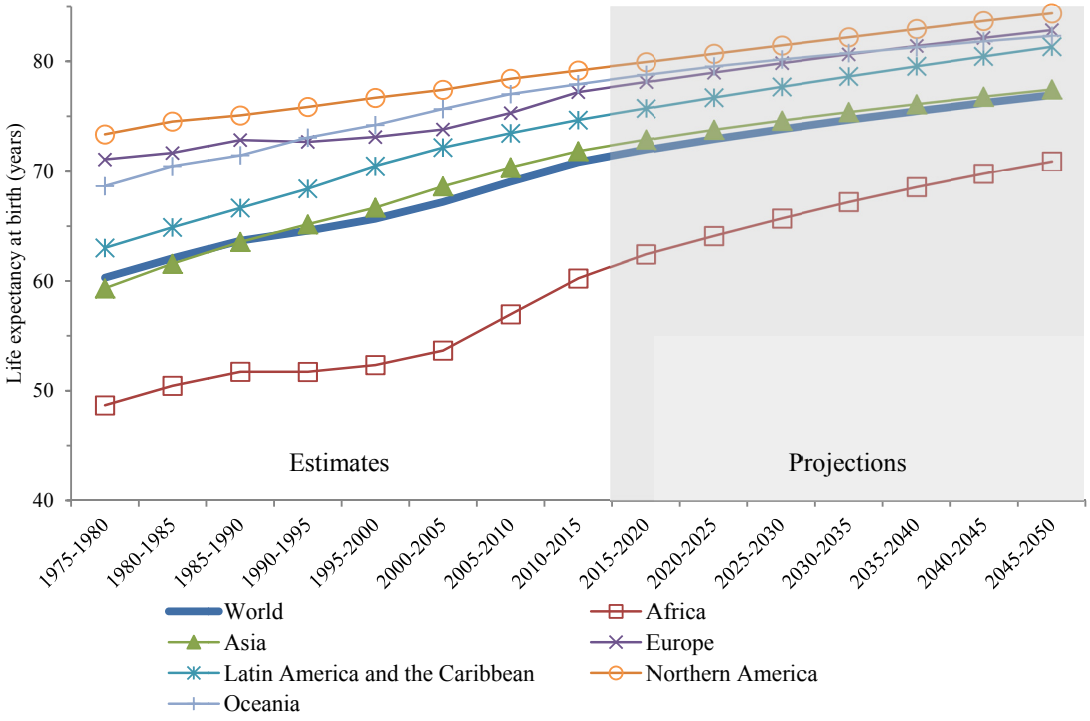
Source: United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects: The 2017 Revision*. New York: United Nations.

While women today bear fewer children on average over a lifetime, some regions of the world are still characterized by high levels of adolescent fertility (births to mothers aged 15-19 years). Since adolescent childbearing can have adverse health and social consequences both for the young mothers and for their children, it remains a topic of concern for many countries. Among regions of the world, the adolescent birth rate in 2010-2015 was highest in Africa at 99 per 1,000 women aged 15-19, followed by Latin America and the Caribbean at 67 per 1,000. The ratio of adolescent to total fertility was highest in Latin America and the Caribbean, where the birth rate at ages 15-19 years contributed 16 per cent of the total fertility of the average woman.

Increasing longevity around the world; progress against major challenges

The *2017 Revision* confirms that significant gains in life expectancy have been achieved in recent years. Globally, life expectancy at birth rose by 3.6 years between 2000-2005 and 2010-2015, or from 67.2 to 70.8 years. All regions shared in the rise of life expectancy over this period, but the greatest gains were in Africa, where life expectancy rose by 6.6 years between these two periods after rising by less than 2 years over the previous decade. Life expectancy in Africa in 2010-2015 stood at 60.2 years, compared to 71.8 in Asia, 74.6 in Latin America and the Caribbean, 77.2 in Europe, 77.9 in Oceania and 79.2 in Northern America (figure 6).

Figure 6. Life expectancy at birth (years) by region: estimates 1975-2015 and projections 2015-2050



Source: United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects: The 2017 Revision*. New York: United Nations.

The under-five mortality rate, equal to the probability of dying between birth and a child's fifth birthday, is an important indicator of development and children's well-being. The 2030 Agenda for Sustainable Development calls for ending preventable deaths of newborns and of all children under 5 years of age, with all countries aiming to reduce under-five mortality to no more than 25 deaths per 1,000 live births by 2030. Globally, deaths among children under age 5 fell from an estimated 70 per 1,000 live births in 2000-2005 to 48 per 1,000 in 2010-2015. Absolute declines were especially large in Sub-Saharan Africa (from 141 to 95 per 1,000) and in the least developed countries (from 123 to 83 per 1,000). The reduction of under-five mortality, which has received intensive global scrutiny as part of Millennium Development Goal 4 and Sustainable Development Goal 3, has proceeded swiftly in many countries in recent years. In most countries of Sub-Saharan Africa and in LDCs, the annual pace of decline in under-five mortality accelerated after 2000.

Globally, life expectancy at birth is projected to rise from 71 years in 2010-2015 to 77 years in 2045-2050 (figure 6). Africa is projected to gain nearly 11 years of life expectancy by mid-century, reaching 71 years in 2045-2050. Such increases are contingent on further reductions in HIV/AIDS, and combating successfully other infectious as well as non-communicable diseases. Asia, Europe, and Latin America and the Caribbean are projected to gain around 6 or 7 years of life expectancy by 2045-2050, while Northern America and Oceania are projected to gain around 4 or 5 years.

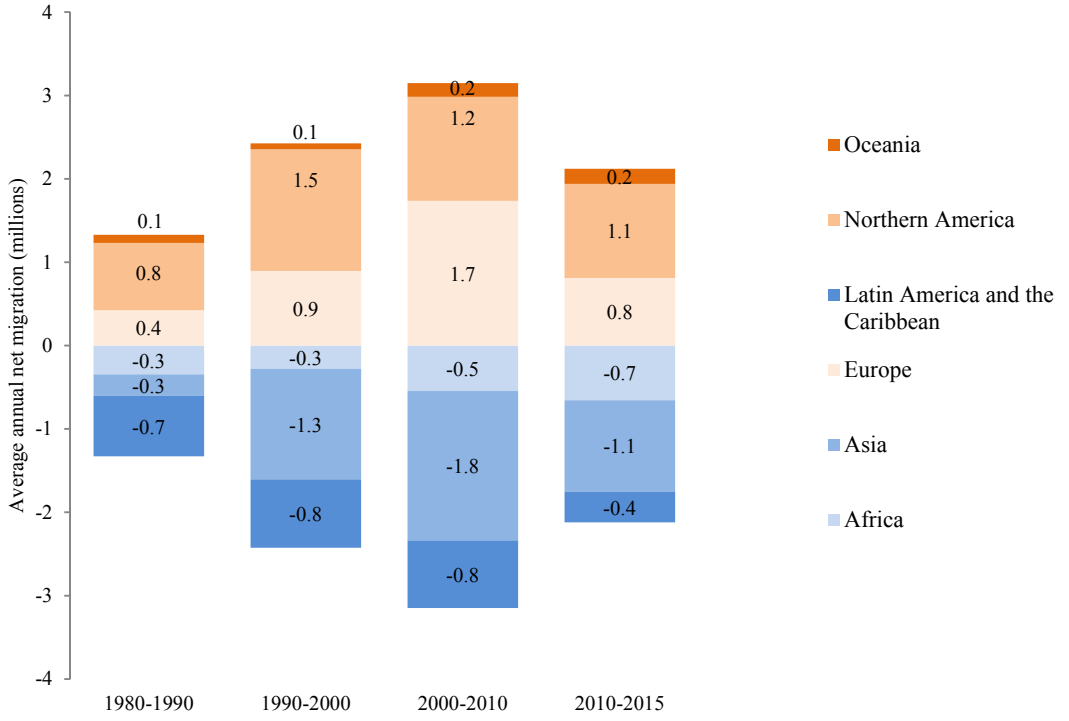
Due to the increased accessibility and effectiveness of treatment, and based on the evaluation of data not previously available, the estimated and projected impact on mortality from the HIV/AIDS epidemic has been reduced in the *2017 Revision* compared to earlier assessments, resulting in a faster increase of population size in several countries affected by the epidemic.

Europe, Northern America and Oceania are net receivers of international migrants; Africa, Asia, and Latin America and the Caribbean are net senders

The 2030 Agenda for Sustainable Development recognizes that international migration can be a positive force for economic and social development, offering a mechanism to rebalance labour markets between areas of origin and destination and thereby increase the global productivity of labour. Migration across international borders can also help to promote investment and higher standards of living in countries of origin through remittances sent by migrants to families and communities back home, and to accelerate the global diffusion of new ideas and technologies. From a demographic perspective, migration is a much smaller component of population change than births and deaths in most countries and regions of the world. However, in some situations the contribution of international migration to the change in population size or distribution is quite significant, in particular for countries and regions where the number of migrants who depart or arrive, including refugees, is relatively large compared to the size of the sending or receiving population.

The migration estimates of the *2017 Revision* refer to net migration, which is the difference between the number of immigrants and the number of emigrants for a given country or group of countries. Overall, between 1950 and 2015, the regions of Europe, Northern America and Oceania were net receivers of international migrants, while Africa, Asia and Latin America and the Caribbean were net senders, with the volume of net migration generally increasing over time. Figure 7 shows average annual net migration by world region from 1980 to 2015. The overall volume of net migration across regions of the world increased steadily until 2010. In the decade from 2000 to 2010, the net inflow to Europe, Northern America and Oceania combined reached a level of 3.1 million migrants per annum. In the period from 2010 to 2015, such inflows showed signs of contraction, especially for Europe, while net outflows from Asia and from Latin America and the Caribbean demonstrated a corresponding decrease in magnitude.

Figure 7. Average annual net migration by region, 1980-2015



Source: United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects: The 2017 Revision*. New York: United Nations.

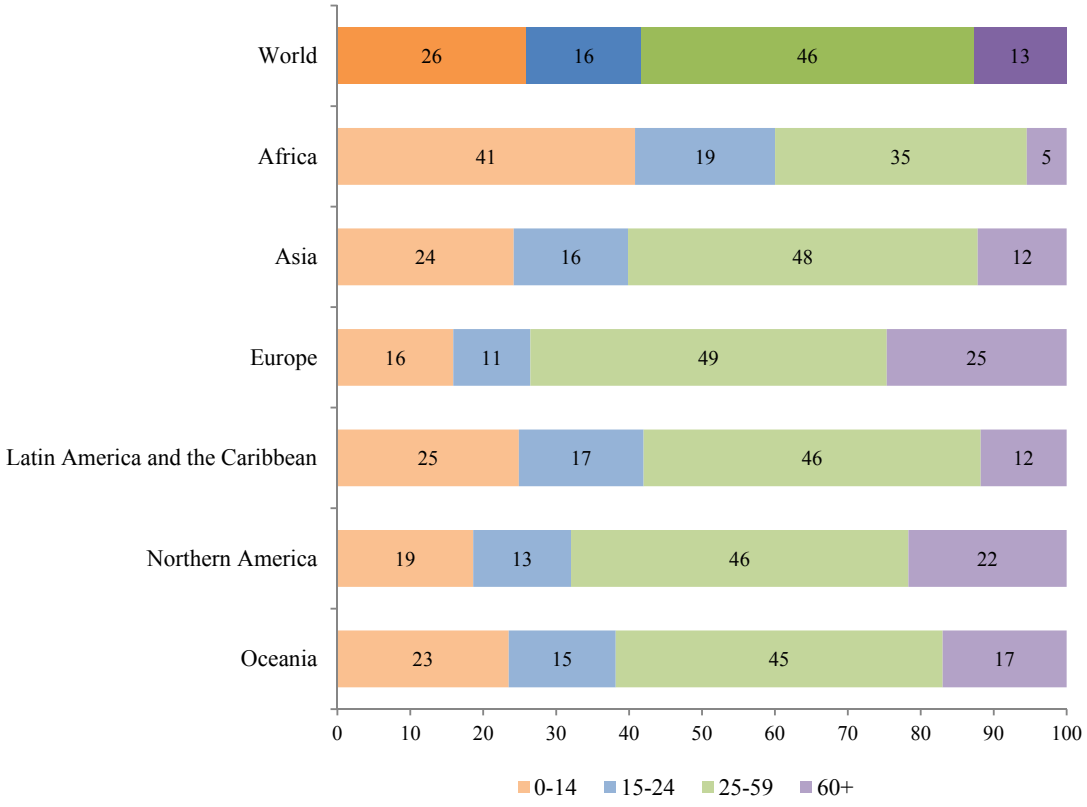
While movements of people from Asia, Africa, and Latin America and the Caribbean toward Europe, Northern America and Oceania have been a key feature of global migration patterns for almost half a century, migration flows within regions have also been important. Some high-income and middle-income countries located in Africa, Asia, or Latin America and the Caribbean have also been attracting migrants in large numbers for several years.

Large and persistent economic and demographic asymmetries between countries are likely to remain key drivers of international migration for the foreseeable future. Between 2015 and 2050, the top net receivers of international migrants (more than 100,000 annually) are projected to be the United States of America, Germany, Canada, the United Kingdom, Australia and the Russian Federation. The countries projected to be net senders of more than 100,000 migrants annually include India, Bangladesh, China, Pakistan, and Indonesia.

Populations in many parts of the world are still young; opportunity for demographic dividend

Populations in many regions are still comparatively young. In Africa, children under age 15 account for 41 per cent of the population in 2017 and young persons aged 15 to 24 account for an additional 19 per cent (figure 8). Latin America and the Caribbean, and Asia, which have experienced greater declines in fertility, have smaller percentages of children (25 and 24 per cent, respectively) but similar percentages of youth (17 and 16 per cent, respectively). In total, these three regions are home to 1.8 billion children and 1.1 billion young persons in 2017. Providing these generations of children and youth with health care, education, and employment opportunities, including in the poorest countries and groups, will be critical for the successful implementation of the 2030 Agenda for Sustainable Development.

Figure 8. Percentage of population in broad age groups for the world and by region, 2017



Source: United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects: The 2017 Revision*. New York: United Nations.

Proportions of children in these regions are projected to decline further in the near future, while numbers and proportions in the prime working ages can be expected to grow. Countries with relatively high ratios of working to dependent populations have the possibility of benefitting from a "demographic dividend," provided that there are sufficient opportunities for productive engagement in the labour force by the expanded working-age population. Success in this regard requires sufficient investment in the human capital of children and youth through universal access to education and health care. In Africa, the proportion of the population aged 25-59 is projected to continue to grow for many decades, from 35 per cent in 2017 to 45 per cent by 2090. In Latin America and the Caribbean, the window of time for an increasing proportion of the population at working ages will be shorter, with a peak around 2030, while in Asia the proportion aged 25-59 will peak sooner around 2020.

Globally, population aged 60 or over is growing faster than all younger age groups

As fertility declines and life expectancy rises, the proportion of the population above a certain age rises as well. This phenomenon, known as population ageing, is occurring throughout the world.

In 2017, there are an estimated 962 million people aged 60 or over in the world, comprising 13 per cent of the global population. The population aged 60 or above is growing at a rate of about 3 per cent per year. Currently, Europe has the greatest percentage of population aged 60 or over (25 per cent). Rapid ageing will occur in other parts of the world as well, so that by 2050 all regions of the world except Africa will have nearly a quarter or more of their populations at ages 60 and above. The number of older persons in the world is projected to be 1.4 billion in 2030 and 2.1 billion in 2050, and could rise to 3.1 billion in 2100. Over the next few decades, a further increase in the population of older persons is almost inevitable, given the size of the cohorts born in recent decades.

Population ageing is projected to have a profound effect on the support ratio, defined as the number of workers per retiree. Although it is difficult to know the actual number of workers per retiree, a useful proxy is the ratio of the numbers of persons who are likely to be workers or retirees by virtue of their age. Thus, a potential support ratio can be defined as the number of persons aged 20 to 64 divided by the number aged 65 or over. In 2017, Africa has 12.9 persons aged 20 to 64 for each person aged 65 or above. This ratio is 7.4 for Asia, 7.3 for Latin America and the Caribbean, 4.6 for Oceania, 3.8 for Northern America and 3.3 for Europe. At 2.1, Japan in 2017 has the lowest potential support ratio in the world, while those of nine European countries and the United States Virgin Islands are also below 3. By 2050, seven countries in Asia, 24 in Europe, and five in Latin America and the Caribbean are expected to have potential support ratios below 2. These low values underscore the fiscal and political pressures that many countries are likely to face in the coming decades in relation to public systems of health care, pensions and social protections for a growing older population.

Key Findings

1. According to the results of the *2017 Revision*, the world's population reached nearly 7.6 billion in mid-2017. The world has added one billion people since 2005 and two billion since 1993. In 2017, an estimated 50.4 per cent of the world's population was male and 49.6 per cent female. In 2017, 9 per cent of the global population was under age 5, 26 per cent was under age 15, 13 per cent was aged 60 or over and 2 per cent was aged 80 or over.

2. Current estimates indicate that roughly 83 million people are being added to the world's population every year. Even assuming that fertility levels will continue to decline, the global population is expected to reach 8.6 billion in 2030, 9.8 billion in 2050 and 11.2 billion in 2100, according to the medium-variant projection.

3. In fact, continued growth of the world's population is expected at least until 2050, even if the decline of fertility would accelerate. The projections of the *2017 Revision* indicate that there is a 95 per cent probability that the global population will be between 8.4 and 8.7 billion in 2030, between 9.4 and 10.2 billion in 2050 and between 9.6 and 13.2 billion in 2100.

4. Future population growth is highly dependent on the path that future fertility will take, as relatively small changes in the frequency of childbearing, when projected over several decades, can generate large differences in total population. In the medium-variant projection, it is assumed that the global fertility level will decline from 2.5 births per woman in 2010-2015 to 2.2 in 2045-2050, and then fall to 2.0 by 2095-2100. In an illustrative example where the future fertility level of each country is consistently half a child above the levels assumed for the medium-variant projection, the global population would reach 10.8 billion in 2050 and 16.5 billion in 2100. Conversely, fertility levels consistently half a child below the assumption used for the medium variant would lead to a global population of 8.8 billion at mid-century, declining to 7.3 billion in 2100 (data not shown in tables).

5. Future growth will be influenced not only by future levels of fertility, mortality, and migration but also by the current age distribution of the world's population. Thanks to "population momentum", a relatively youthful age distribution promotes a more rapid pace of population growth, whereas a relatively older age distribution contributes to a slower rate of growth or even population decline. The magnitude of population growth or decline attributable to this momentum can be found by projecting the population forward assuming that: (a) mortality remains constant, (b) fertility instantly reaches the replacement level, and (c) the population is closed to migration. To illustrate the importance of population momentum, a new 'Momentum' variant was included in projections of the *2017 Revision*.

6. In recent years, fertility has declined in virtually all regions of the world. In Africa, where fertility levels are the highest of any region, total fertility has fallen from 5.1 births per woman in 2000-2005 to 4.7 in 2010-2015. Over the same period, fertility levels also fell in Asia (from 2.4 to 2.2), Latin America and the Caribbean (from 2.5 to 2.1), and Northern America (from 2.0 to 1.85). Europe has been an exception to this trend in recent years, with total fertility increasing from 1.4 births per woman in 2000-2005 to 1.6 in 2010-2015. Total fertility in Oceania has changed little since 2000, at roughly 2.4 births per woman in both 2000-2005 and 2010-2015.

7. The 47 least developed countries (LDCs) as a group continue to have a relatively high level of fertility, at 4.3 births per woman in 2010-2015, and rapid population growth, at 2.4 per cent per year. Although this rate of increase is expected to slow significantly over the next decades, the combined population of the LDCs, roughly one billion in 2017, is projected to increase by 33 per cent between 2017 and 2030, and then to reach 1.9 billion persons in 2050.

8. A reduction in the fertility level results not only in a slower pace of population growth but also in a more aged population; for the population of the world and of many countries and regions, as the population growth rate has fallen over time, the proportion of older persons has increased while that of younger persons has decreased. In 2017, there are more than twice as many children under the age of 15 in the world as there are older persons aged 60 or above. In 2050, however, the number of persons aged 60 or above will be roughly equal to the number of children under the age of 15, with about 2.1 billion in each group.

9. In Europe, 25 per cent of the population is already aged 60 years or over and that proportion is projected to reach 35 per cent in 2050 and 36 per cent in 2100. Populations in other regions are also projected to age significantly over the next several decades. For Latin America and the Caribbean, the population will go from having just 12 per cent of the total at ages 60 and above in 2017 to having 25 per cent at these ages in 2050. Similarly, the population aged 60 or over in Asia is expected to shift from being 12 per cent of the total in 2017 to 24 per cent in 2050, while in Northern America it will move from 22 to 28 per cent, and in Oceania, from 17 to 23 per cent over the same period. Africa, which has the youngest age distribution of any region, is also projected to experience a rapid ageing of its population over the coming decades, with the percentage of its population aged 60 or over rising from 5 per cent in 2017 to around 9 per cent in 2050.

10. Compared to 2017, the number of persons aged 60 or above is expected to more than double by 2050 and more than triple by 2100, rising from 962 million in 2017 to 2.1 billion in 2050 and 3.1 billion in 2100. For this age range, 65 per cent of the global increase between 2017 and 2050 will occur in Asia, 14 per cent in Africa, 11 per cent in Latin America and the Caribbean, and the remaining 10 per cent in other areas.

11. The number of persons aged 80 or over is projected to triple by 2050, and by 2100 to increase to nearly seven times its value in 2017. Globally, the number of persons aged 80 or over is projected to increase from 137 million in 2017 to 425 million in 2050, and further to 909 million in 2100. In 2017, 27 per cent of all persons aged 80 or over reside in Europe, but that share is expected to decline to 17 per cent in 2050 and to 10 per cent in 2100 as the populations of other regions continue to increase in size and to grow older themselves.

12. Although the populations of all countries are expected to grow older within the foreseeable future, populations will remain relatively young, at least for the short-term, in regions where fertility is still high. In Africa, for example, 60 per cent of the population is below age 25 in 2017. This percentage will fall slightly to 57 per cent in 2030 and will decline further to around 50 per cent in 2050, but that remains a higher percentage of young people than observed in the other world regions in 2017.

13. Africa continues to experience very high rates of population growth. Between 2017 and 2050, the populations of 26 African countries are projected to reach at least double their current size. For six African countries, the populations are projected to increase by 2100 to more than five times their current size: Angola, Burundi, Niger, Somalia, the United Republic of Tanzania and Zambia.

14. Fifty-one countries or areas are projected to undergo a reduction in population size between 2017 and 2050. For ten countries or areas, populations are expected to decrease by more than 15 per cent by 2050: Bulgaria, Croatia, Latvia, Lithuania, Poland, the Republic of Moldova, Romania, Serbia, Ukraine and the United States Virgin Islands.

15. Ten countries are expected to account collectively for more than half of the world's projected population increase over the period 2017-2050: India, Nigeria, the Democratic Republic of Congo, Pakistan, Ethiopia, the United Republic of Tanzania, the United States of America, Uganda, Indonesia and Egypt (ordered by their expected contribution to global growth).

16. The *2017 Revision* confirms that fertility has continued to fall in almost countries where it was recently at high levels. Among 201 countries or areas with at least 90,000 inhabitants in 2017, the number with high levels of fertility (5 children or more per woman) has been reduced roughly by half, from 41 countries in 2000-2005 to 22 in 2010-2015. Afghanistan and Timor-Leste were the only two countries outside of Africa where total fertility was above 5 births per woman during 2010-2015. Among 125 countries where total fertility was above the replacement level (2.1 births per woman) in 2005-2010, fertility fell in 117 of them between 2005-2010 and 2010-2015.

17. More and more countries now have fertility rates that lie below the replacement level, and several have been in this situation for several decades. Eighty-three countries had below-replacement-level fertility during 2010-2015, and for 26 of them, fertility was below 1.5 births per woman. In several countries, fertility rates have fluctuated slightly in the recent past. Fifty-nine countries with below-replacement-level fertility in 2010-2015 recorded a slight increase in fertility at some point between 2000-2005 and 2010-2015, although for 21 of these countries an increase from 2000-2005 to 2005-2010 was followed by a downturn from 2005-2010 to 2010-2015. Only four European countries have had fertility rates above the replacement level during any 5-year period since 1990-1995.

18. In 2010-2015, the 83 countries with below-replacement-level fertility accounted for 46 per cent of the world's population. The ten most populous countries with below replacement fertility are China, the United States of America, Brazil, the Russian Federation, Japan, Viet Nam, Germany, the Islamic Republic of Iran, Thailand, and the United Kingdom (in order of population size).

19. Globally, total fertility is expected to fall from 2.5 births per woman in 2010-2015 to 2.2 in 2045-2050 and to 2.0 in 2095-2100, according to the medium-variant projection. However, in Europe and Northern America, total fertility is projected to increase between 2010-2015 and 2045-2050 from 1.60 to 1.78 in Europe and from 1.85 to 1.89 in Northern America. In Africa, Asia, Latin America and the Caribbean, and Oceania, fertility is expected to fall between 2010-2015 and 2045-2050, with the largest reductions projected to occur in Africa. In all regions of the world, fertility levels are projected to converge to levels around or below the replacement level by 2095-2100.

20. Levels of adolescent childbearing, which can have adverse health and social consequences both for the young mothers and for the children they bear, has fallen in most countries. Nevertheless, high adolescent fertility remains a concern in some parts of the world. Among regions, the adolescent birth rate (births per 1,000 women aged 15-19) in 2010-2015 was highest in Africa, at 99 per 1,000 women, followed by Latin America and the Caribbean at 67 per 1,000. The ratio of adolescent to total fertility was highest in Latin America and the Caribbean, where the birth rate at ages 15-19 years contributed 16 per cent of total fertility.

21. The *2017 Revision* confirms that substantial improvements in life expectancy have occurred in recent years. Globally, life expectancy at birth has risen from 65 years for men and 69 years for women in 2000-2005 to 69 years for men and 73 years for women in 2010-2015. However, large disparities between countries remain. At one extreme, countries or areas with a life expectancy of 82 years or more for both sexes combined include Australia, Hong Kong SAR (China), Iceland, Italy, Japan, Macao SAR (China), Singapore, Spain and Switzerland. At the other

extreme, countries with a life expectancy below 55 years include the Central African Republic, Chad, Côte d'Ivoire, Lesotho, Nigeria, Sierra Leone, Somalia and Swaziland. Globally, life expectancy for both sexes combined is projected to rise from 71 years in 2010-2015 to 77 years in 2045-2050 and eventually to 83 years in 2095-2100.

22. Life expectancy at birth has increased significantly in the least developed countries in recent years. The gain in life expectancy made by these countries, around 6 years between 2000-2005 and 2010-2015, is roughly double the increase achieved by the rest of the world. Nonetheless, the least developed countries still lag behind other developing countries, where the average level of life expectancy was 70 years in 2010-2015. The gap in life expectancy at birth between the least developed countries and other developing countries narrowed from 11 years in 2000-2005 to 8 years in 2010-2015. Although differences in life expectancy across regions and income groups are projected to persist in future years, such differences are expected to diminish significantly by 2045-2050.

23. The under-five mortality rate, equal to the probability of dying between birth and age 5, is an important indicator of development and children's well-being. Progress in reducing under-five mortality has been substantial and far-reaching in recent years. Between 2000-2005 and 2010-2015, under-five mortality decreased by more than 20 per cent in 163 countries, including countries in Africa (47 out of 57 countries), Asia (46 out of 51 countries), Europe (38 out of 40 countries), Latin America and the Caribbean (24 out of 38 countries), and Oceania (8 out of 13 countries). Over this period, under-five mortality fell by more than 30 per cent in 89 countries, with 10 countries seeing a decline of more than 50 per cent.

24. Although the HIV/AIDS epidemic continues to be a major public health concern, HIV/AIDS-related mortality among adults appears to have reached a peak over the past decade in most countries that have been highly affected by the epidemic, thanks mostly to the increasing availability of antiretroviral treatments. Nevertheless, in countries where HIV prevalence has been high, the impact of the epidemic in terms of morbidity, mortality and slower population growth continues to be evident. Thus, in Southern Africa, the sub-region with the highest prevalence of the disease, life expectancy at birth fell from 62 years in 1990-1995 to 53 years in 2000-2005 and 2005-2010, and then increased to 59 years in 2010-2015. While life expectancy in Southern Africa is expected to return to the level where it was in the early 1990s by 2015-2020, this represents a loss of two decades of potential improvements in survival rates.

25. Several Eastern European countries experienced reductions in life expectancy at birth in the late 1980s and 1990s. By 2010-2015 life expectancy in the sub-region had recovered substantially. Nevertheless, with an average level of 72 years, life expectancy in Eastern European countries lags far behind the levels found in Western Europe. At about 70 or 71 years, the Republic of Moldova, the Russian Federation and Ukraine have the lowest levels of life expectancy at birth in Europe.

26. Since 1990, 61 countries have experienced a decline in life expectancy at birth between consecutive five-year periods at least once. These included countries heavily affected by the HIV/AIDS epidemic, countries in conflict, and countries experiencing increased mortality following the breakup of the Soviet Union. The number of countries experiencing a decrease in life expectancy compared to the previous five-year period has fallen dramatically, from a high of 39 in 1990-1995, to 15 in 2000-2005 and just 2 in 2010-2015.

27. There continue to be large movements of migrants between regions, often from low- and middle-income countries toward high-income countries. The volume of the net inflow of migrants to high-income countries in 2010-2015 (3.2 million per year) represented a decline from a peak

attained in 2005-2010 (4.5 million per year). High-income countries with a net inflow of more than 100 thousand migrants per year in 2010-2015 included the United States of America, Germany, Saudi Arabia, Canada, the United Kingdom, Australia, Oman, Kuwait and Qatar (ordered by size of the net inflow). Among upper-middle-income countries, excluding those experiencing a large influx of refugees, the Russian Federation, South Africa and Malaysia also had a net inflow of more than 100 thousand migrants per year in 2010-2015. The countries with a net outflow of more than 100 thousand migrants per year in 2010-2015, excluding those dominated by refugee movements, were India, Bangladesh, China, Pakistan, the Philippines and Spain.

28. The Syrian refugee crisis has had a major impact on levels and patterns of international migration in recent years, affecting several countries. The estimated net outflow from the Syrian Arab Republic was 4.2 million persons in 2010-2015. Most of these refugees went to Syria's neighbouring countries, contributing to an unusually large influx of migrants to Turkey (net inflow of 1.6 million over five years), Lebanon (1.25 million) and Jordan (975 thousand).

29. In countries or areas where fertility is already below the replacement level, the population is expected to decline in size unless the loss due to the excess of deaths over births is counterbalanced by a gain due to positive net migration. However, international migration at or around current levels will be unable to compensate fully for the expected loss of population tied to low levels of fertility, especially in the European region. Between 2015 and 2050, the excess of deaths over births in Europe is projected to total 57 million, whereas the net inflow of international migrants is expected to be around 32 million, implying an overall reduction of Europe's population by about 25 million.