Food and Agriculture Organization of the United Nations

Tracking progress on food and agriculture-related SDG indicators 2023

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Contents

Executive summary

At the midpoint of the implementation of the 2030 Agenda for Sustainable Development (2030 Agenda), the latest data indicate that most of the food- and agriculture-related SDG targets are still far from being achieved. The lingering effects of the COVID-19 pandemic, along with other crises such as climate change and armed conflicts, are having widespread impacts on all dimensions under the 2030 Agenda, including poverty, food security and nutrition, health and the environment. Progress made in the past two decades has stagnated, and in some cases even reversed, compounding the challenges in eradicating poverty and hunger, improving health and nutrition, and combating climate change.

The latest estimates by the Food and Agriculture Organization of the United Nations (FAO) put the global hunger figure for 2022 between 691 million and 783 million people. These estimates imply that, since 2015, the increase in the number of undernourished people in the world has eroded practically all progress that had been made during the preceding decade. Furthermore, food insecurity has increased significantly from 25.3 percent of the global population in 2019 to 29.6 percent in 2022. While the prevalence of severe food insecurity at the global level showed a marginal decline from 11.7 percent in 2021 to 11.3 percent in 2022, it remains far above pre-pandemic levels – equivalent to 180 million more people, compared to 2019.

Indicators focused on malnutrition present a mixed picture. Although stunting has declined from 26.3 percent in 2012 to 22.3 percent in 2022, the rate of reduction is not nearly close enough to meet the global target. In 2022, 6.8 percent children under 5 years of age were affected by wasting, while the prevalence of overweight children, measured at 5.6 percent, has stagnated in the past decade, requiring greater efforts towards the 2030 target. Similarly, the prevalence of anaemia in women – a risk factor for adverse maternal and perinatal outcomes – has not improved between 2015 and 2019, the latest year with available data.

While government spending on agriculture, one of main sources of investment in the sector, has increased in nominal terms, the agricultural orientation index has declined between 2015 and 2021. On the other hand, agricultural export subsidies, a source of market distortions, have been declined consistently in the past two decades down to negligible levels in 2021. There have been some improvements with respect to food prices globally. In 2021, the share of countries facing moderately to abnormally high food prices was 21.5 percent, down from the record high of 48 percent in 2020. However, this figure is still above the 2015–2019 average (15.2 percent), reflecting continued increases in food prices, mainly supported by elevated production and transport costs on account of costlier fertilizers and energy.

The world's smallholder farmers produce around one-third of the world's food, contributing substantially to agrifood systems and economies worldwide. However, their labour productivity continues to lag behind that of larger-scale producers, with more pronounced differences in higher-income countries. In 90 percent of reporting countries, small-scale food producers also show an average annual income of less than half that of large-scale food producers. Disparities also persist in the domain of land ownership. In one-third of assessed countries, fewer than 50 percent of women and men involved in agricultural production have ownership and/or secure tenure rights over the

agricultural land. Among landowners, the share of men having ownership is at least twice that of women in almost half of the countries. Of the 71 countries that reported on the level of legal protection of women's rights to land (not limited to agricultural land), close to 60 percent have no, very low or low levels of protection for women's land rights in the law.

Turning towards the indicators that measure environmental dimension of food and agriculture, progress remains slow and uneven across geographic regions. Currently, the world remains far from maintaining the genetic diversity of plant and animal genetic resources for food and agriculture, either in the field or in genebanks. Similarly, despite their contribution to global food security and nutrition, global fish stocks are threatened by overfishing, pollution, poor management and other factors, including illegal fishing, with more than one-third (35.4 percent) of global stocks overfished in 2019. The proportion of sustainable fisheries' contribution to global gross domestic product (GDP) declined to below 0.1 percent in 2019. On the other hand, there is evidence from many countries that the implementation of effective fisheries management measures is having a positive impact on fish stocks and, as a result, the share of landings from biologically sustainable stocks is on the rise. By the end of 2022, the Agreement on Port State Measures targeting illegal, unreported and unregulated (IUU) fishing reached 74 Parties (including the European Union) or, effectively, 100 states.

Agricultural losses directly attributed to natural disasters, which are increasing both in frequency and intensity, amounted to USD 19.3 billion in 2021 based on data from 22 countries. The percentage of food lost after harvesting on farms and at transport, storage, wholesale and processing levels is estimated at 13.2 percent globally in 2021, compared to 13 percent in 2016. These percentages mask improvements and deteriorations at regional and subregional levels, as estimates vary greatly across (sub)regions. Similarly, while the level of global water stress remained at a safe 18.2 percent in 2020, this figure hides large regional variations, with certain regions experiencing high or even critical levels of water stress. Meanwhile, water use efficiency stood at USD 18.9/m^3 in 2020 worldwide, denoting an increase compared to 2015 but a slight drop as compared with an efficiency of USD 19.4/m^3 achieved in 2019.

Forests provide vital goods and ecosystem services and are crucial to mitigating climate change. While the world's forest area continues to decrease, the rate of decline has slowed compared to previous decades, falling from 31.9 percent in 2000 to 31.2 percent in 2020. At the same time, the world continues to progress towards sustainable forest management. Between 2010 and 2020, the share of forests under certification schemes, the proportion of forest within protected areas and the proportion of forests under a long-term management plan increased globally. However, land degradation remains a major concern, with the world having lost at least 100 million hectares of healthy and productive land every year between 2015 and 2019.

Mountain ecosystems are crucial biodiversity centres that are affected easily by both natural and anthropogenic factors. While vegetation cover of the world's mountains remains roughly stable at approximately 78 percent, with a slight decrease since 2015, detrimental changes in land cover during the 2000–2018 period represents approximately 1.6 percent of the world's total mountain area.

To ensure progress across the social, economic and environmental dimensions discussed above, it is crucial to improve data capabilities. Despite extensive efforts towards building stronger data and statistical systems for Sustainable Development Goal monitoring, significant data gaps still exist. Without comprehensive, disaggregated, timely and reliable data, it is difficult to effectively measure the pace of progress across different regions and socioeconomic groups, and direct efforts and investments where needed. Robust data systems are essential for formulating evidence-based policy, anticipating future needs and designing the urgent actions needed to realize the 2030 Agenda.

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The Sustainable Development Goal indicator framework at the midpoint of the 2030 Agenda for Sustainable Development

The Sustainable Development Goal (SDG) indicator framework is often referred to as the bedrock of the mutual accountability framework of the 2030 Agenda for Sustainable Development (2030 Agenda). As a voluntary commitment – rather than a legally binding treaty – the 2030 Agenda relies on a complex follow-up and review process spearheaded by the high-level political forum on sustainable development (HLPF), which meets annually at ministerial level and every four years at head-of-state and government level. Deliberations of the HLPF, in turn, are meant to be informed by annual progress reports based on the global indicator framework, as agreed by the UN Statistical Commission.

Compared to its predecessor framework – the Millennium Development Goal (MDG) indicators – the SDG indicator framework has several added strengths. Its implementation is fully country-led, being governed by an Interagency and Expert Group on SDG indicators (IAEG-SDG) comprising 28 countries which represent their respective regions. In addition, SDG indicators are explicitly universal, meant to track the progress of all countries towards achieving the SDGs, whereas MDG indicators effectively only applied to developing countries.

Despite these strengths, the SDG indicator framework also has certain limitations. One key limitation is that SDG indicators usually cannot measure the entire breadth of their corresponding SDG target – indeed, they were never truly intended to do so. SDG targets – a result of lengthy political negotiations in the lead-up to the adoption of the 2030 Agenda in September 2015 – are generally multifaceted, encapsulating many dimensions. These multidimensional targets, in turn, are usually monitored by only one or two SDG indicators, which aim to measure the main thrust of the target, but cannot – by any stretch – measure all aspects. It is for this reason that the UN Resolution on the 2030 Agenda for Sustainable Development clearly maintained that the global SDG indicators would have to be "complemented by indicators at the regional and national levels" (Paragraph 75).

Readers of this report are encouraged to reflect on this aspect as they examine the progress made by countries, regions and the world as a whole across the different SDG indicators. Often, a statistical progress assessment will flag to readers whether we are "close to" or "far from" a target, or even that the target is "already met". However, these are statistical assessments based only on trends in the data of the corresponding SDG indicator – they are not axiomatic statements about the level of achievement of the relevant SDG target in its full scope.

Paradoxically, even if SDG indicators generally cannot conceptually measure all aspects of the SDG targets, many SDG indicators are still struggling with substantial data gaps. In other words, even measuring one or two main aspects of a target can be a huge challenge for countries – and the main preoccupation of the UN Statistical Commission and its subsidiary bodies. With four times more SDG indicators than there were MDG indicators, the SDG indicator framework walks a delicate tightrope between being insufficient to measure the SDG targets yet being excessive with respect to the statistical capacities of countries. Moreover, many SDG indicators are relatively new for countries,

having been developed specifically to measure the new SDG targets and hence not benefiting from established data collection mechanisms.

Closing these data gaps is also a key priority of statistical capacity development programmes of custodian agencies – international organizations such as the Food and Agriculture Organization of the United Nations (FAO) that are responsible for collecting and compiling data from countries. These statistical capacity development programmes aim to help countries put in place the necessary measures and processes to monitor the SDG indicators. Capacity development support can be provided in numerous different ways and target one or more stages of the data value chain. Organizing training workshops (virtual or face-to-face), providing hands-on technical assistance or developing e-learning courses are all key elements in the capacity development toolbox. Traditionally, statistical capacity development support has focused on the data production stages of the data value chain, working with national statistical offices (NSOs) and other national data providers. More recently, however, custodian agencies such as FAO are increasingly investing also in supporting the data use stage, by fostering the analytical capacities of NSOs, removing impediments to data dissemination, and improving data literacy of data users.

The statistical capacity support provided by FAO to countries on SDG indicators has contributed to a steady rise in the country coverage of the 21 indicators under FAO custodianship. In 2015, the average country was able to report less than one-third of these indicators. By 2023, the corresponding number is close to two-thirds. As such, the share of indicators for which country coverage is over 50 percent has also grown substantially – a crucial achievement, given that only a sufficient country coverage can allow monitoring global and regional trends, rather than progress only by individual countries. Tier I indicators – indicators with over 50 percent country coverage – comprise two-thirds of the SDG indicators under FAO custodianship.

As the availability and quality of data rises, data can increasingly fulfil their ultimate purpose – guiding evidence-based policy- and decision-making and hence catalysing the transformative actions needed to achieve the SDGs and related targets. Improving data availability and quality is not an end in itself; rather, it is a means to an end – in this case, the end is the 2030 Agenda's vision of a world freed from poverty and hunger and on path towards sustainable development in its economic, social and environmental dimensions. So critical are data to telling us where we are and where we should go, that recent analysis has shown that every USD 1 invested in data systems creates an average of USD 32 in economic benefits (Global Partnership for Sustainable Development Data, 2022). No wonder, data have also been described as the "new oil" – a catchy yet incomplete motto bearing in mind that data, by contrast to fossil fuels, are effectively an inextinguishable resource.

In the following pages, this report will draw on all the available country data to describe progress across the 21 SDG indicators under FAO custodianship, plus another 10 SDG indicators with a strong bearing on the food and agriculture sphere. These additional indicators, under the custodianship of partner international agencies, provide valuable insights on agricultural losses resulting from disasters, the distribution of land tenure rights, progress towards ending all forms of malnutrition and combating land degradation, as well as the impact of international trade policies and regulations on agricultural trade, especially in developing and least developed countries.

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SUSTAINABLE DEVELOPMENT GOAL 1

No Poverty

End poverty in all its forms everywhere.

INDICATORS
1.4.2 1.5.2

Overview

Even before the COVID-19 pandemic, global poverty reduction was slowing down because of subdued global economic growth. The pandemic has reversed three decades of steady progress in poverty reduction. Recovery from the pandemic has been slow and uneven, as the world is presently facing multiple geopolitical, socioeconomic, and climatic risks. Given current trends, 575 million people (almost 7 percent of the world's population) will still be living in extreme poverty in 2030. In 2021, 53 countries reported direct economic losses of USD 113.5 billion due to disasters, as both an increased occurrence and intensity of disasters is becoming the new normal.

Despite the emphasis on equal rights to economic resources for all in Agenda 2030, the available data suggest that the proportion of women with legally recognized documentation of their land tenure rights is significantly below the average for the adult population in most countries.

SDG INDICATOR 1.4.2

Proportion of total adult population with secure tenure rights to land, (a) with legally recognized documentation, and (b) who perceive their rights to land as secure, by sex and type of tenure.[1]

Target 1.4

By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.

Land (whether agricultural land or urban land) is a key asset for poverty reduction. However, systemic discrimination has tended to reproduce prevailing inequalities in land access, ownership and control between men and women, and continues to do so. The legislation framework regarding land tenure is therefore a crucial element in determining if and how people and communities acquire rights to use and control land and natural resources. Indicator 1.4.2 measures disparities in tenure security among the adult population, disaggregated by sex and type of tenure, assessed based on "legally recognized documentation" and "perception of tenure security". Together, these two sub-indicators determine the prevalence of secure tenure rights to land in a population.

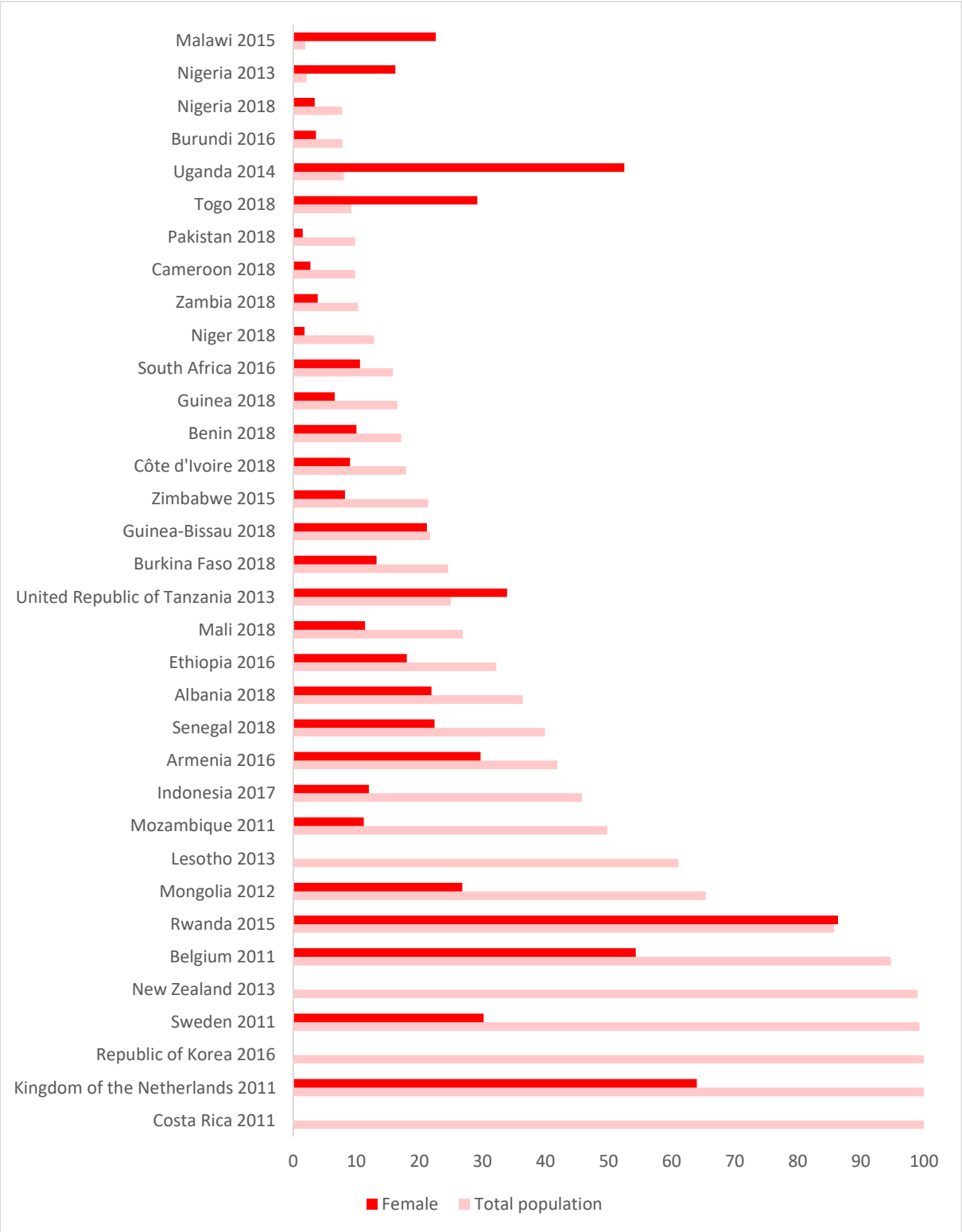
While the share of the population with legally recognized documentation of their rights to land is 100 percent in three countries (Costa Rica, Kingdom of the Netherlands, Republic of Korea), for the majority of the 33 countries, that share lies below 50 percent, with shares below 10 percent for eight countries. Sex-disaggregated data regarding tenure rights to land are available for all 33 countries for the sub-indicator that measures legally documented tenure rights to land; data regarding the share of people who perceive their rights to be secure (available for 22 countries) are not yet available on a sex-disaggregated basis. The available data suggest that the proportion of women with legally recognized documentation of their land tenure rights is significantly below the average for the adult population in most surveyed countries, with the exception of Malawi, Rwanda, Togo, Uganda and the United Republic of Tanzania (Figure 1). This finding corroborates the figures for SDG Indicators 5.a.1 (which deals more specifically with agricultural land, and provides a measure of the share of women among agricultural land owners) and 5.a.2 (which captures the strength of legal frameworks guaranteeing women's and girls' equal rights to land ownership and/or control) (see the section on Goal 5 of this report). On the other hand, the share of people who perceive their rights to land as secure ranges from 69.7 percent to 98.5 percent in the 22 assessed countries, reflecting the massive differences between people's perceptions and the legal rights they hold.

SDG Indicator 1.4.2 is under the co-custodianship of the United Nations Human Settlements Programme (UN-Habitat) and the World Bank. These two organizations, together with FAO (the custodian for SDG Indicator 5.a.1), the Global Land Indicators Initiative and the Global Land Tool Network, have developed a joint module for measuring individual land rights, in order to generate

[1] SDG Indicator 1.4.2 is under the co-custodianship of the United Nations Human Settlements Programme (UN-Habitat) and the World Bank.

consistent data on Indicators 1.4.2 and 5.a.1. (FAO, UN-Habitat and World Bank, 2019). The joint module, now available in five official United Nations (UN) languages, provides national statistical organizations with a customizable tool to collect data on the two indicators in an efficient and cost-effective way. The custodian agencies continue to work together to disseminate the joint module and provide technical support to national statistical institutions to fast-track data collection and report on the indicators. Currently, for all countries with the exception of Nigeria, there is only one data point between 2011 and 2018 to measure the proportion of people with secure tenure rights, limiting an analysis of progress over time. Moreover, the data are not timely enough to effect meaningful policy reform that can bring the target of gender equality in land ownership closer. This calls for UN Member States to prioritize and devolve more resources to ensure regular reporting on this indicator, and then use the indicator as a tool for policy decisions.

Figure 1. Proportion of people with legally recognized documentation of their rights to land, by sex (percent) (latest year reported)



Source: United Nations. 2023. SDG Indicators Database — Statistics. In: *Department of Economic and Social Affairs*. New York. [Cited 8 June 2023]. https://unstats.un.org/sdgs/dataportal/database

SDG INDICATOR 1.5.2

Direct economic loss attributed to disasters in relation to global gross domestic product (GDP)[2]

Target 1.5

By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.

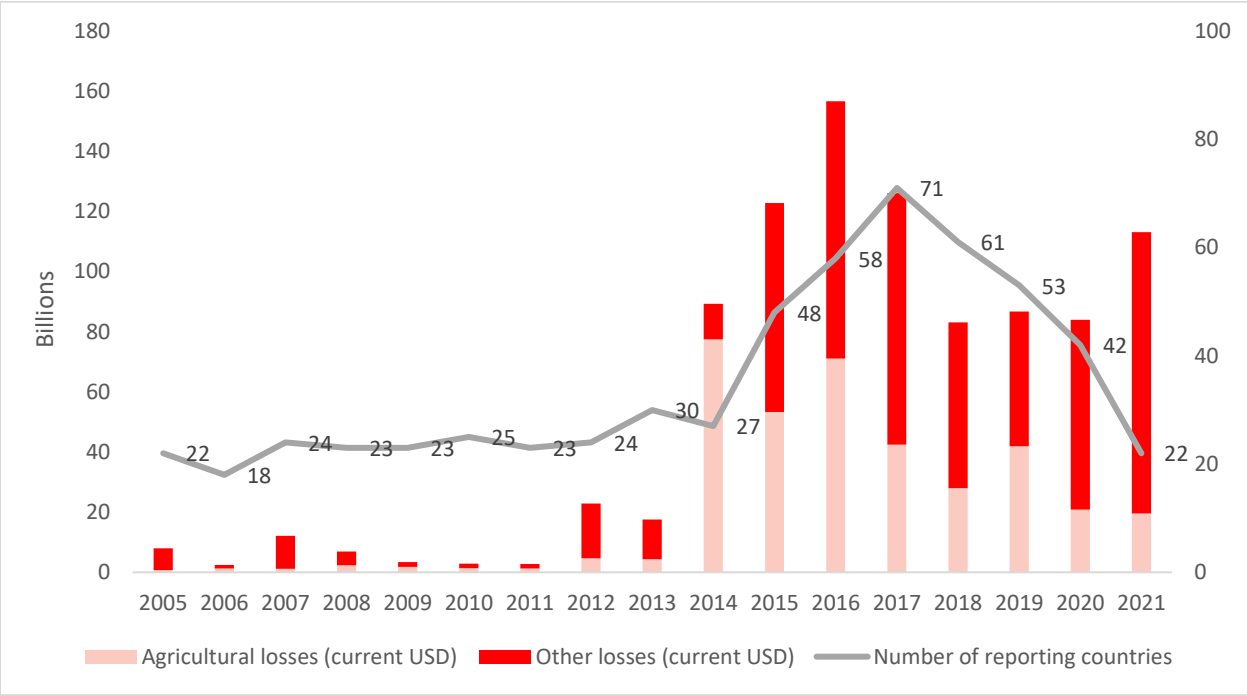
Vulnerable populations, including smallholder and subsistence farmers, pastoralists, fisherfolk and wage labourers, bear the brunt of increasingly frequent disasters and the resulting economic losses.

The adverse impacts of disasters on societies and economies pose a major obstacle to poverty and hunger reduction in several countries, exacerbated by increasingly frequent climate-related extreme events. Individuals and communities engaged in the agricultural sector bear the effects of these shocks more than any other productive sector. Furthermore, with its cascading and devastating impacts across entire economies, COVID-19 has demonstrated the interconnected nature of risk today, and thus the urgent need for a concerted global effort to accelerate risk reduction activities through collective commitments.

Data from 22 countries on both direct economic losses attributed to disasters and losses in the agricultural sector is available for 2021. During this year, agricultural losses constituted USD 19.6 billion of the total direct economic losses, amounting to USD 113 billion in these countries (United Nations, 2023). Wide variations exist in disaster loss data across time and regions, as they are greatly influenced by large-scale catastrophic events. Furthermore, the number of countries that report data on both economic and agricultural losses from disasters varies significantly across the years, as is evident in Figure 2, and may be one factor affecting the values of the losses reported overall. These data gaps on the impact of natural hazards and disasters, especially in developing countries, must be addressed to inform appropriate risk reduction policies and investments that build the resilience of the agricultural sector.

[2] SDG Indicator 1.5.2 is under the custodianship of the United Nations Office for Disaster Risk Reduction (UNDRR).

Figure 2. Agriculture loss in total economic loss attributable to disasters across reporting countries, current USD (2005–2021)



Note: The figure refers to data for countries that report on both direct economic losses and agricultural losses in a given year.

Source: United Nations. 2023. SDG Indicators Database — Statistics. In: *Department of Economic and Social Affairs*. New York. [Cited 8 June 2023]. https://unstats.un.org/sdgs/dataportal/database

Reference

United Nations. 2023. SDG Indicators Database – Statistics. In: *Department of Economic and Social Affairs*. New York. [Cited 8 June 2023]. https://unstats.un.org/sdgs/dataportal/database

SUSTAINABLE DEVELOPMENT GOAL 2

Zero Hunger

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

INDICATORS

2.1.1 2.1.2 2.2.1 2.2.2 2.2.3 2.3.1 2.3.2 2.5.1.a 2.5.1.b 2.5.2 2.a.1 2.b.1 2.c.1

GOAL LEVEL ASSESSMENT: THE FIRST STATISTICAL ASSESSMENT OF PROGRESS ON SDG 2

Overview

At the midpoint of the implementation of the 2030 Agenda, the world is off track in achieving Zero Hunger by 2030. The sharp rise in the number of people experiencing hunger and food insecurity since the pandemic has not yet abated to pre-pandemic levels. Latest estimates suggest that between 691 and 783 million people suffered from hunger in 2022. The increase in the number of undernourished people in the world since 2015 has eroded practically all progress that had been made during the preceding decade, bringing the world back to the hunger level of 2005.

The proportion of the world population facing chronic hunger in 2022 was about 9.2 percent, compared with 7.9 percent in 2019. In addition, an estimated 2.4 billion people were moderately or severely food insecure in 2022. This is still 391 million more people than in 2019, before the pandemic, and 745 million more compared to 2015, when the 2030 Agenda was launched.

The labour productivity of small-scale food producers continues to lag behind those of larger-scale producers. Furthermore, in 90 percent of the reported countries, small-scale food producers show an average annual income less than half that of large-scale food producers, and the income of male-headed production units is systematically larger than the income of those headed by women.

Although 71 percent of local livestock breeds with a known status are at risk of extinction, progress has been made in *ex situ* cryopreservation. At the end of 2021, an estimated 5.8 million accessions of plant genetic resources for food and agriculture were conserved under medium- or long-term conditions in 846 gene banks in 115 countries and 17 regional and international research centres, representing a 1.1 percent year-on-year increase in 2021.

Government expenditure on agriculture relative to the agriculture sector's contribution to GDP has declined from 0.50 in 2015 to 0.45 in 2021 in all regions except Northern America and Europe, driven mostly by the COVID-19 pandemic response and the unprecedented scale of fiscal stimulus packages implemented by those countries. In line with the 2015 Ministerial Decision on Export Competition adopted by Members of the World Trade Organization (WTO), agricultural export subsidies have declined to practically negligible levels in 2021. The share of countries facing moderately to abnormally high food prices declined significantly from the record high of 48 percent in 2020, when

the easing of COVID-19-related restrictive measures prompted strong demand, while supply chains continued to experience constraints, to 21.5 percent in 2021.

GOAL LEVEL ASSESSMENT: THE FIRST STATISTICAL ASSESSMENT OF PROGRESS ON SDG 2

The year 2023 marks the midpoint of the 2030 Agenda. Worldwide, challenges have arisen in the path towards achieving the SDGs that were unforeseen at the onset of the 2030 Agenda. The COVID-19 pandemic has transformed the world in the past four years, threatening health and economies, and exacerbating existing inequalities. Against this backdrop, it is necessary to make a reinvigorated commitment to the 2030 Agenda to accelerate progress towards sustainable development.

Beyond the social, economic and environmental challenges the world collectively faces, lies the issue of measuring progress made towards the expansive 2030 Agenda. To make effective and inclusive policy recommendations, a clear assessment of progress is necessary not only for specific indicators, but also for overall SDGs and SDG targets. Currently, there is no agreed method for producing such a goal-level assessment, given the complexity of the task.

As custodian of several targets under SDG 2: Zero Hunger, and with a mandate to support the 2030 Agenda through the transformation of agrifood systems to be more efficient, inclusive, resilient and sustainable, FAO is particularly dedicated to measuring the progress made overall towards SDG 2. To expand beyond the indicator- and target-level progress assessments that are the norm, FAO has developed a simple method for producing a goal-level assessment. While various approaches have been proposed by different organizations, such as the Organization of Islamic Cooperation, UN Economic and Social Commission for Asia and the Pacific, the Organization for Economic Co-operation and Development, the Statistical Office of the European Union (Eurostat), and the Sustainable Development Solutions Network, these may be limited in scope with respect to geographic areas, or the coverage of the universally adopted SDG indicators and targets. The new approach developed by FAO, detailed in the statistical annex, allows for a comprehensive assessment at indicator and target levels, as well as assessment at the level of SDG 2.

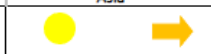
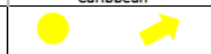
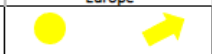
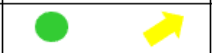
The methodology followed is detailed in the statistical annex, with the assessment categories established as follows:

Score current status	Interpretation for goal level and for targets with numerical yardstick	Interpretation for targets without numerical yardstick	
4	Goal/target achieved	Best performers	
[3–4)	Close to achieving the goal/target	Above-median performers	
[2–3)	Moderate distance to achieving the goal/target	Median performers	
[1–2)	Far from achieving the goal/target	Below-median performers	
[0–1)	Very far from achieving the goal/target	Worst performers	

Score trend	Interpretation for goal level and for targets with numerical yardstick	Interpretation for targets without numerical yardstick	
4	Goal/target achieved	Improvement	
[3–4)	Improvement towards the goal/target	Improvement	
[2–3)	Slight improvement towards the goal/target	Slight improvement	
[1–2)	No improvement towards the goal/target	No improvement	
[0–1)	Deterioration away from the goal/target	Deterioration	

Source: Authors' own elaboration.

Table 1. Goal and target level assessment of progress on SDG 2

	World	Central Asia and Southern Asia	Eastern Asia and South-eastern Asia	Latin America and the Caribbean	Northern America and Europe	Western Asia and Northern Africa	Sub-Saharan Africa	Oceania
Goal 2								
Target 2.1								
Target 2.2								
Target 2.3								
Target 2.4								
Target 2.5								
Target 2.a								
Target 2.b								
Target 2.c								

Source: Authors' own elaboration.

By applying the methodology thus described, it is possible to arrive at an SDG-level statistical assessment for SDG 2. With regard to SDG 2, the world as a whole is "at a moderate distance to achieving the Goal", yet having registered "no improvement" toward the Goal since the baseline year (2015, the year the 2030 Agenda was inaugurated). These two findings should give policymakers and the international community pause for thought. The vision of a world with zero hunger and malnutrition, and with sustainable agriculture, is still within reach. At the same time, progress has effectively stalled since the 2030 Agenda was launched. While many challenges remain, and armed conflict between major food-producing countries continues, a major milestone was reached earlier this year when the World Health Organization (WHO) declared the COVID-19 pandemic officially over. Countries must now quickly work to address the lingering aftershocks of the pandemic and take all necessary measures to get back on track towards achieving SDG 2.

SDG INDICATOR 2.1.1

Prevalence of undernourishment

Target 2.1

By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.

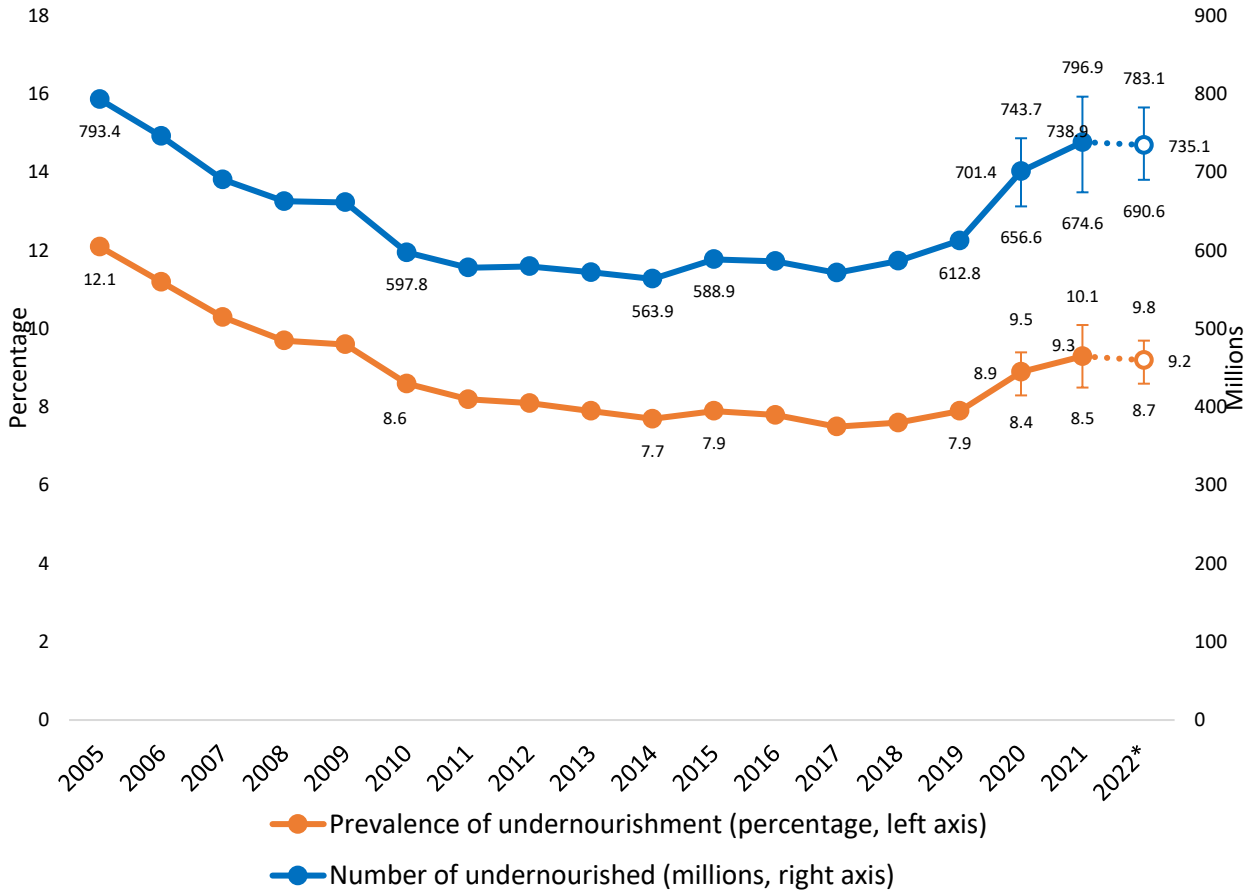
Global status assessment: moderate distance to the target.
Global trend assessment: deterioration.

Global hunger remained relatively unchanged from 2021 to 2022 but is still far above the levels prior to the COVID-19 pandemic, affecting around 9.2 percent of the world population in 2022 compared to 7.9 percent in 2019. Between 691 and 783 million people in the world faced hunger in 2022.

Global hunger remained relatively unchanged from 2021 to 2022, although it remains far above levels before the COVID-19 pandemic, which caused a tremendous setback in the progress towards Zero Hunger. After increasing sharply in 2020 in the midst of the pandemic, and rising more slowly in 2021 to 9.3 percent, the prevalence of undernourishment ceased to increase from 2021 to 2022 (FAO, IFAD, UNICEF, WFP and WHO, 2023).

The proportion of the world population facing chronic hunger in 2022 was about 9.2 percent, compared to 7.9 percent in 2019 (see Figure 3). It is estimated that hunger affected between 691 and 783 million people in the world in 2022. Considering the projected mid-range (about 735 million people in 2022), 122 million more people faced hunger in 2022 than in 2019, before the pandemic.

Figure 3. Number and percentage of undernourished people in the world (2005–2022)

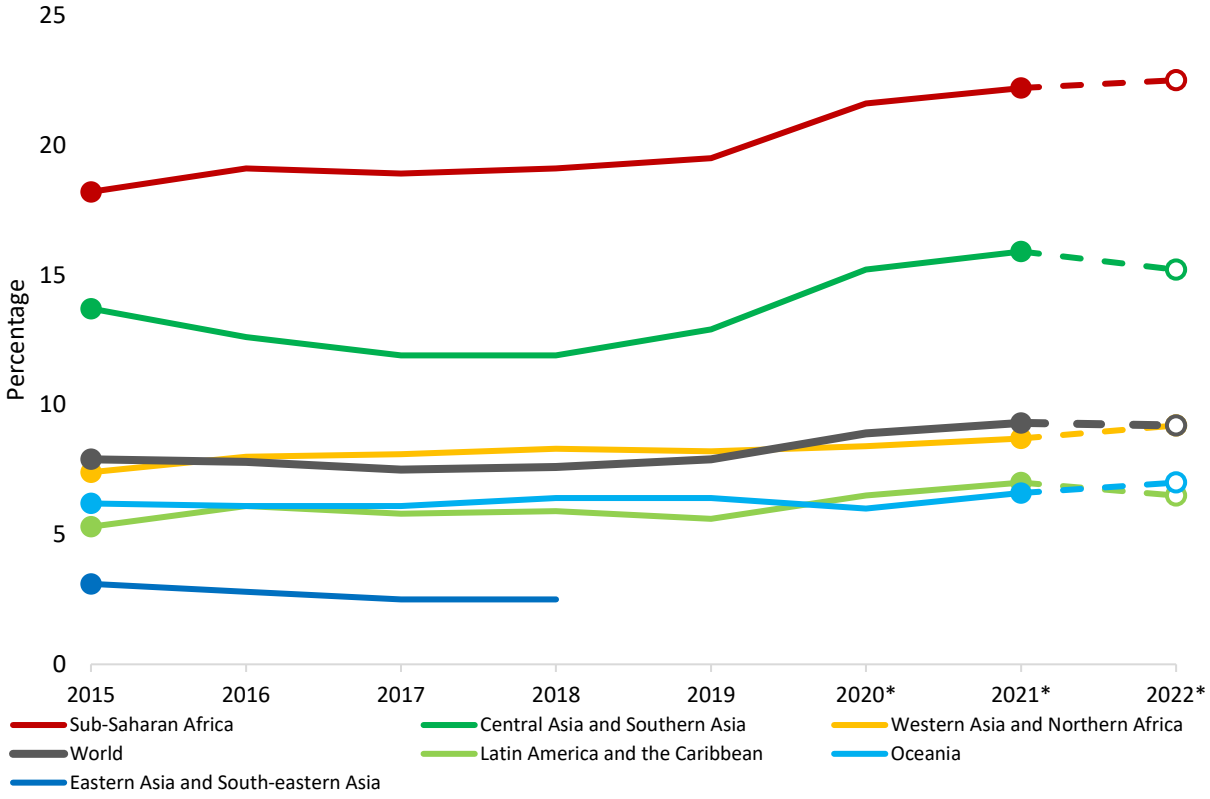


Note: * Projections based on nowcasts for 2022 are illustrated by dotted lines. Bars show lower and upper bounds of the estimated range.
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 12 July 2023].
https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig03

The economic rebound from the pandemic produced a positive effect, helping to stem the rising tide of hunger at the global level. However, food and energy prices, conflicts, weather-related events, and deeply entrenched inequalities prevented the situation from improving globally.

The relative lack of change in hunger at the global level from 2021 to 2022 hides substantial differences at the regional level. Many places in the world are still facing serious food crises. While progress was made towards reducing hunger in Central Asia and Southern Asia, and in Latin America and the Caribbean, hunger was still on the rise in Western Asia and Northern Africa, sub-Saharan Africa and Oceania (Figure 4).

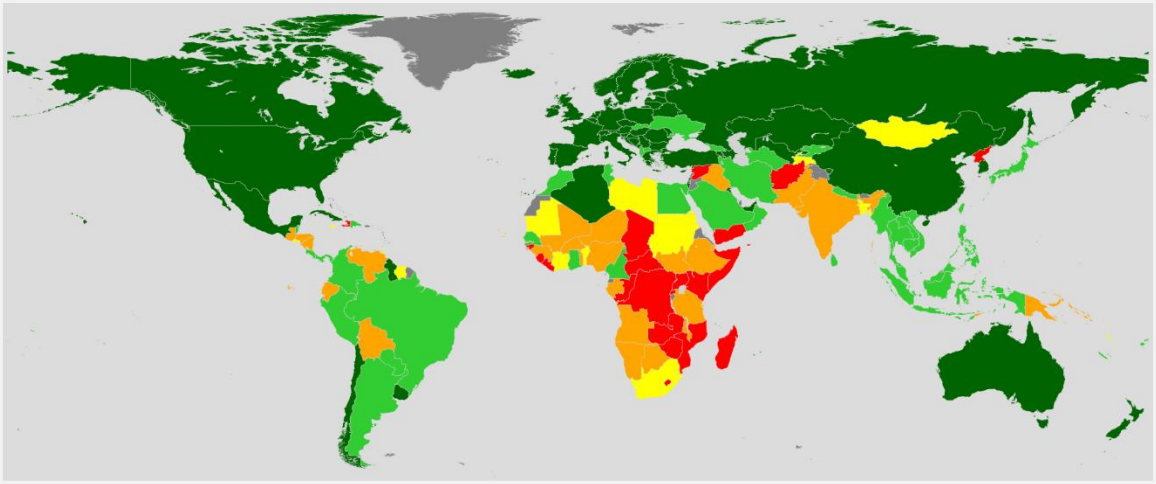
Figure 4. Prevalence of undernourishment by region (2015–2022)



Note: * Projected values based on the projected mid-ranges. Values for Northern America and Europe, and for Eastern and South-eastern Asia after 2018, are not shown as the prevalence is less than 2.5 percent.
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 12 July 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

Sub-Saharan Africa is the region with the largest proportion of the population affected by hunger in 2022 (22.5 percent), and where it has increased the most since the launch of the 2030 Agenda in 2015 (+4.3 percentage points). The proportion of people suffering from hunger is 15.2 percent in Central Asia and Southern Asia, 9.2 percent in Western Asia and Northern Africa, 7 percent in Oceania, and 6.5 percent in Latin America and the Caribbean. It remains below 2.5 percent (i.e. the lowest value that can be reliably reported with current estimation methods) for Eastern Asia and South-eastern Asia and for Northern America and Europe.

Figure 5. Current status of prevalence of undernourishment at national level (2021)

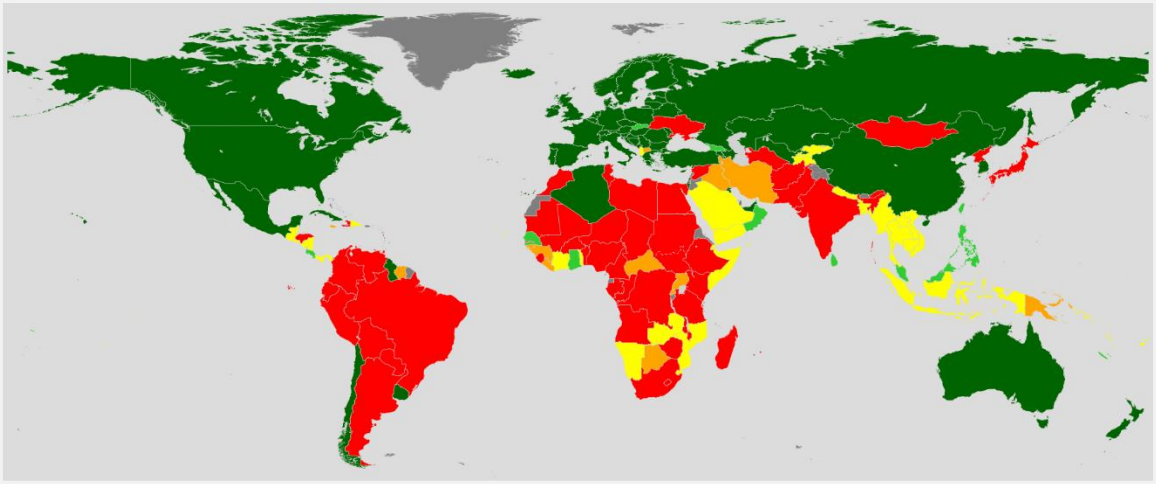


	PoU ≤ 2.5 percent
	Close to the target
	Moderate distance to the target
	Far from the target
	Very far from the target
	Insufficient data

Notes: Due to the probabilistic nature of the indicator and the margins of uncertainty associated with the estimates of each parameter in the model, FAO does not publish estimates of prevalence of undernourishment lower than 2.5 percent. This impedes assessment of whether or not a country has already met the SDG target. The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 12 July 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with UN Geospatial Information Section, 2023).

Figure 6. Trend in prevalence of undernourishment at national level (2015–2021)



	PoU ≤ 2.5 percent
	On track to achieve the target
	On path but too slow to achieve the target
	No improvement
	Deterioration
	Insufficient data

Notes: Due to the probabilistic nature of the indicator and the margins of uncertainty associated with the estimates of each parameter in the model, FAO does not publish estimates of prevalence of undernourishment lower than 2.5 percent. This impedes assessment of whether or not a country has already met the SDG target. The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 12 July 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

SDG INDICATOR 2.1.2

Prevalence of moderate or severe food insecurity in the population, based on the food insecurity experience scale (FIES)

Target 2.1

By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.

Global status assessment: far from the target.
Global trend assessment: deterioration.

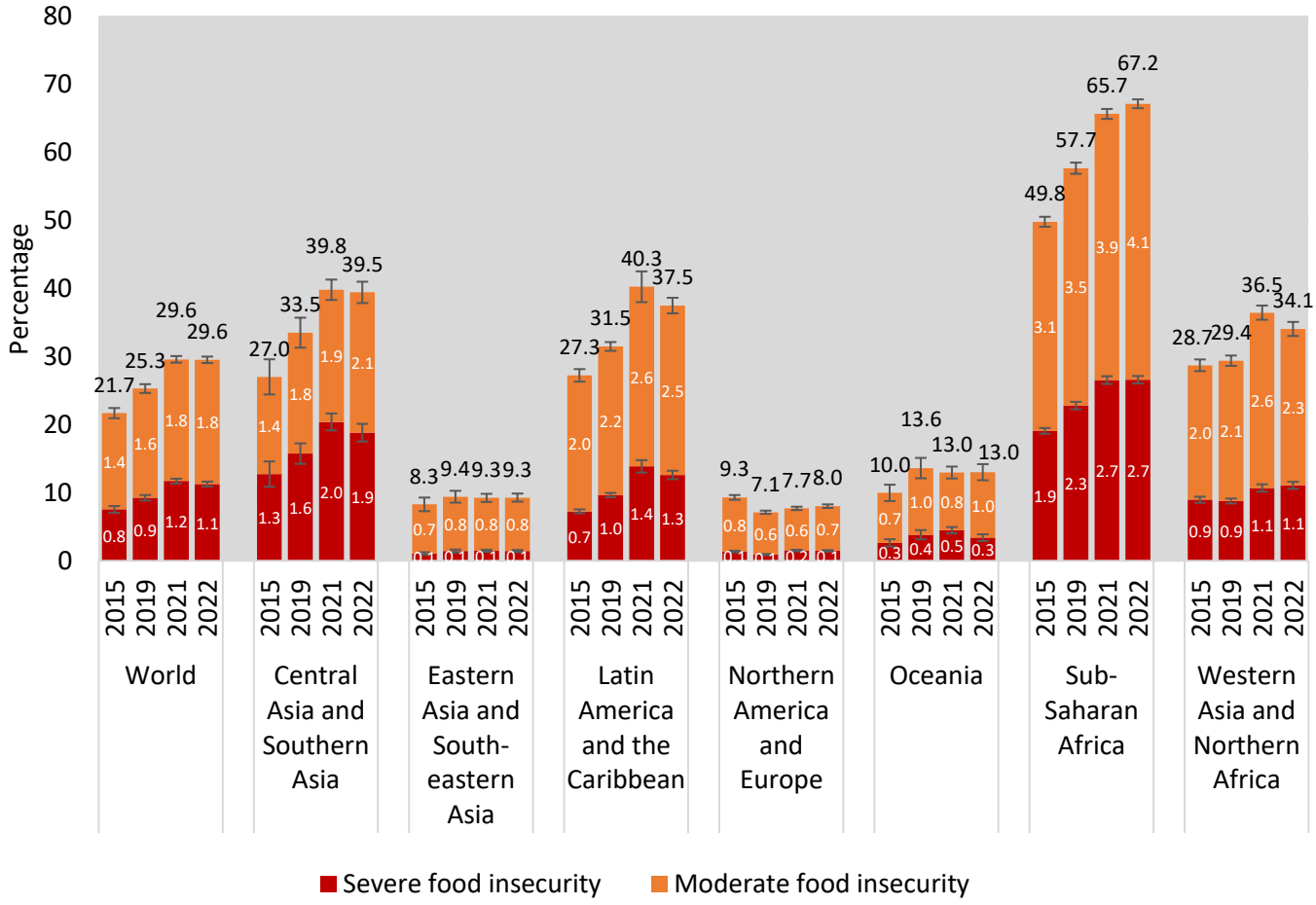
Global food insecurity remained unchanged for the second year in a row, but was still far above the levels before the COVID-19 pandemic. About 29.6 percent of the global population – 2.4 billion people – were moderately or severely food insecure in 2022.

SDG Target 2.1 challenges the world not only to end hunger, but also to ensure access for all people to safe, nutritious and sufficient food all year round. SDG Indicator 2.1.2 – the prevalence of moderate or severe food insecurity in a population, based on the food insecurity experience scale (FIES) – tracks progress towards this ambitious goal. The prevalence of food insecurity at severe levels provides an additional lens to examine hunger, complementarily to SDG Indicator 2.1.1.

New estimates of the prevalence of food insecurity for 2022 show no progress on food insecurity at the global level. Following a sharp increase from 2019 to 2020, the global prevalence of moderate or severe food insecurity remained unchanged for the second year in a row, far above levels before the COVID-19 pandemic (Figure 7). In 2022, an estimated 29.6 percent of the global population – 2.4 billion people – were moderately or severely food insecure, meaning they did not have access to adequate food. This is still 391 million more people than in 2019, before the pandemic, and 745 million more people compared to 2015 when the 2030 Agenda was launched.

More than one-third (38 percent) of people facing moderate or severe food insecurity in the world in 2022 – over 900 million – were severely food insecure, indicating that they had run out of food at times during the year and, at worst, gone an entire day or more without eating. The prevalence of severe food insecurity at the global level showed a marginal decline from 11.7 percent in 2021 to 11.3 percent in 2022, but remains far above pre-pandemic levels – equivalent to 180 million more people compared to 2019.

Figure 7. Prevalence of moderate or severe food insecurity in the world and by region (2015, 2019, 2021 and 2022)



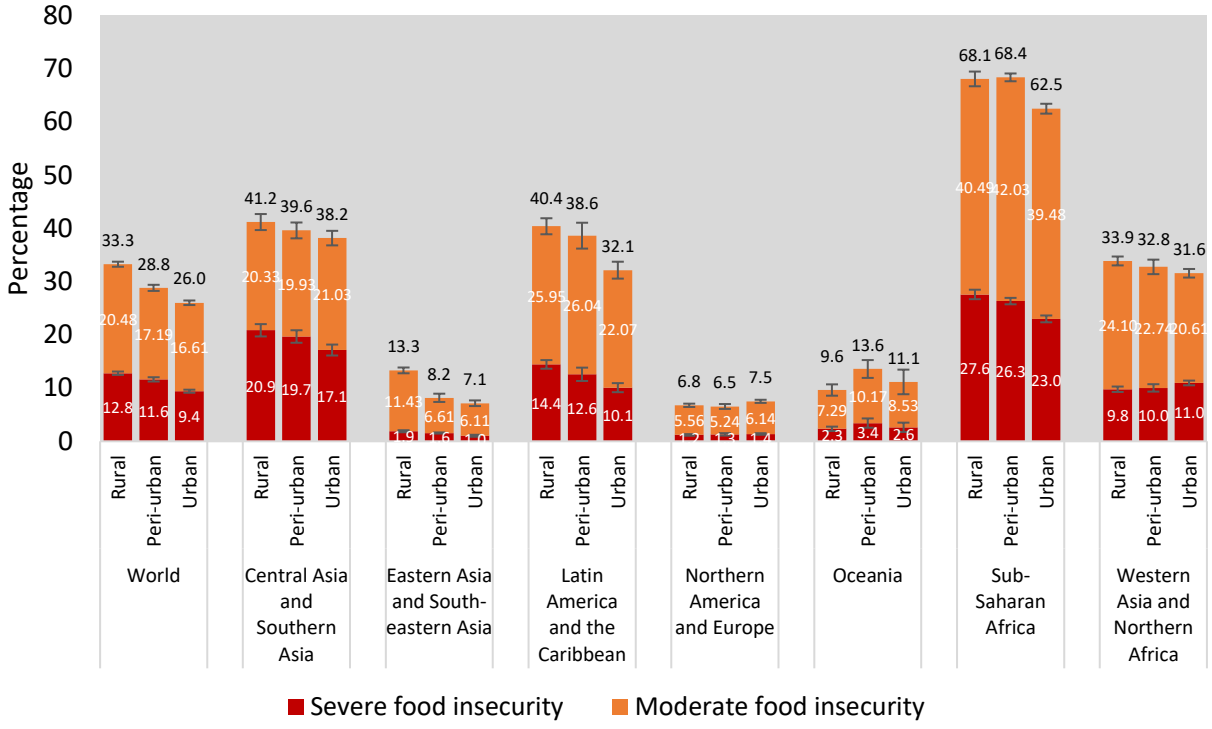
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 12 July 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig07

The food security situation differs markedly across regions. Sub-Saharan Africa is the only region where food insecurity deteriorated in 2022 and also the region with the largest proportion of the population – more than two-thirds – facing moderate or severe food insecurity. More than one-fourth of the population was severely food insecure. The prevalence of moderate or severe food insecurity in 2022 was much lower compared to sub-Saharan Africa and similar in Central and Southern Asia (39.5 percent), Latin America and the Caribbean (37.5 percent), and Western Asia and Northern Africa (34.1 percent), with some improvement seen in the latter two regions compared to 2021. The prevalence of severe food insecurity was higher in Central and Southern Asia compared with the other two regions – almost 19 percent, compared with 12.6 percent in Latin America and the Caribbean and 11.1 percent in Western Asia and Northern Africa, where severe food insecurity increased slightly from 2021 to 2022 even as moderate or severe food insecurity declined.

The percent of the population affected by moderate or severe food insecurity in 2022 was much lower in Oceania, Eastern and South-eastern Asia, and Northern America and Europe – 13 percent, 9.3 percent and 8 percent, respectively, with little change over the past three years. The prevalence of severe food insecurity was relatively low in these regions: about 1.5 percent in Eastern and South-eastern Asia, and Northern America and Europe, and 3.4 percent in Oceania.

A comparison of food insecurity in rural, peri-urban and urban populations at the global and regional levels using the degree of urbanization (DEGURBA) classification (European Union, FAO, OECD, UN-Habitat, and World Bank, 2021), a new international standard, shows that at the global level, food security improves as the degree of urbanization increases (Figure 8). Moderate or severe food insecurity affected 33.3 percent of adults living in rural areas in 2022 compared to 28.8 percent in peri-urban areas and 26 percent in urban areas (Figure 8). Food insecurity was more prevalent in rural areas than in urban areas in all regions except Oceania and Northern America and Europe.

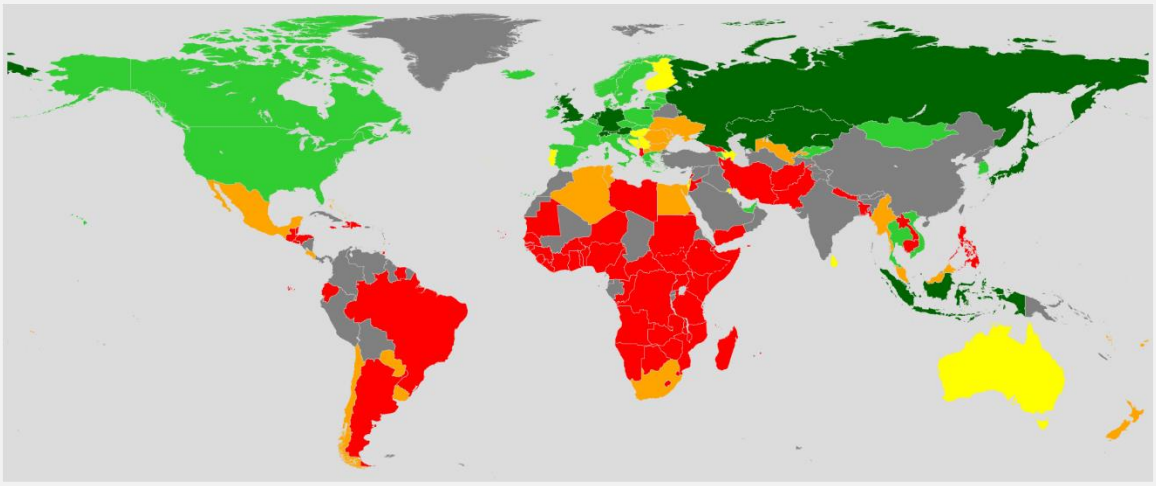
Figure 8. Prevalence of moderate or severe food insecurity in urban, peri-urban and rural areas in the world and regions (2022)



Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 12 July 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

Persistent gender inequalities are also revealed by the new FIES data. Globally, food insecurity is more prevalent among adult women than men. In 2022, 27.8 percent of adult women were moderately or severely food insecure, compared with 25.4 percent of men, and the proportion of women facing severe food insecurity was 10.6 percent compared with 9.5 percent of men. However, the gap narrowed considerably at the global level compared to 2021, from 3.8 percentage points in 2021 to 2.4 percentage points in 2022 for moderate or severe food insecurity, and from 2.4 to 1.1 percentage points for severe food insecurity.

Figure 9. Current status of prevalence of food insecurity (2021)

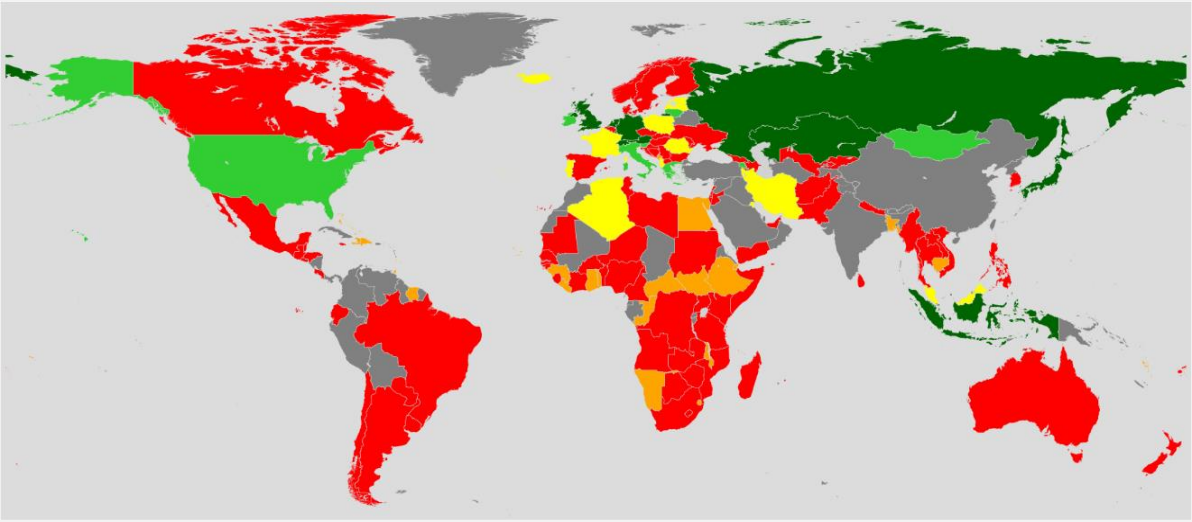


	Target already met
	Close to the target
	Moderate distance to the target
	Far from the target
	Very far from the target
	Insufficient data

Note: Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 12 July 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 10. Trend in prevalence of food insecurity (2015–2021)



	Target already met
	On track
	On path but too slow
	No improvement
	Deterioration
	Insufficient data

Note: Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 12 July 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

SDG INDICATOR 2.2.1

Prevalence of stunting (height for age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age[3]

Target 2.2

By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.

Global status assessment: far from the target.
Global trend assessment: on path but too slow to achieve the target.

Current efforts need to be more than doubled if the 2030 global stunting target is to be achieved.

Stunting has been declining steadily over the last decade, with 148.1 million, or 22.3 percent, of children under 5 years of age worldwide suffering from stunting in 2022. This represents a reduction of 17 percent compared to the 177.9 million stunted children under 5 years of in 2012. The number of countries with a very high stunting prevalence (greater than or equal to 30 percent) has decreased by two-fifths over the last decade, from 47 countries in 2012 to 28 countries in 2022. However, faster progress is needed to achieve the 2030 target of a 50-percent reduction in the number of stunted children. To achieve this target, global efforts must more than double the annual rate of decline, from the current value of 1.65 percent per year to 3.64 percent per year.

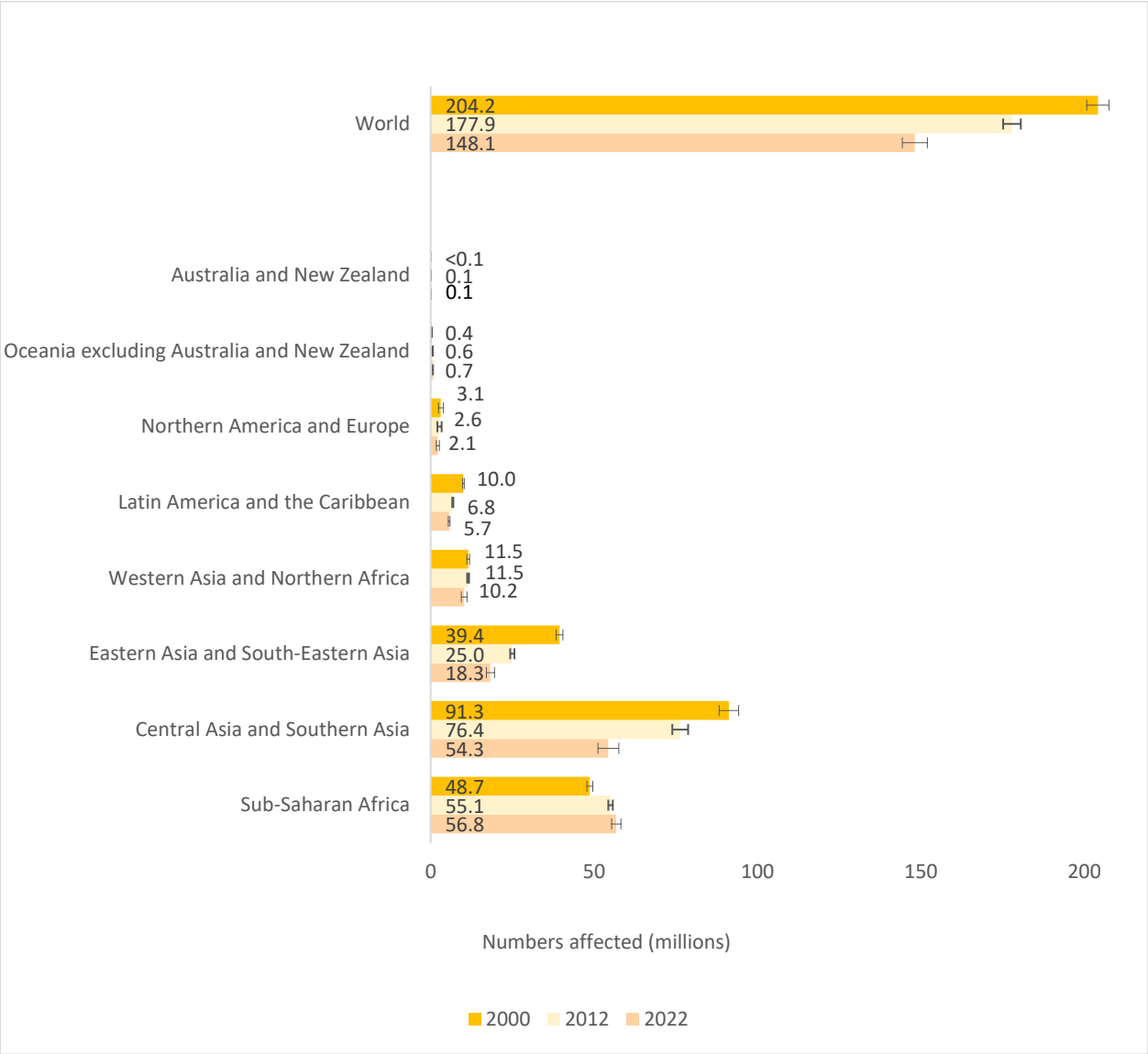
Although stunting is declining in almost every region, no region is currently on track to achieve the 2030 Agenda target and progress varies considerably among them. While not on track to meet the target if current trends continue, Northern America and Europe and Australia and New Zealand are the only regions that will be very close to the target prevalence of less than 3 percent in 2030; all other regions are projected to have prevalence above 10 percent. Since 2012, Central Asia and Southern Asia have shown the greatest progress in reducing stunting, with an annual rate of reduction of 2.88 percent per year. Progress has been slower in Latin America and the Caribbean and sub-Saharan Africa, with an annual rate of reduction of 0.85 and 1.41 percent per year, respectively. Oceania – excluding Australia and New Zealand – is the only region to exhibit an increase in stunting prevalence, with an annual rate of reduction of −0.77 percent per year. The constraints in accessing nutritious diets and essential nutrition services because the global food and nutrition crisis, which is being fuelled by conflict, climate change and the enduring secondary impacts of the COVID-19 pandemic, may deepen existing inequalities between regions in the years to come.

Of the estimated 148.1 million children under age 5 affected by stunting in 2022, three-quarters lived in only two regions: Central and Southern Asia (37 percent) and sub-Saharan Africa (38 percent). More intensive efforts are required to achieve the global target of reducing the number of stunted children to 88.9 million by 2030 (a 50-percent reduction from the baseline of 2012). Particular

[3] SDG Indicator 2.2.1 is under the custodianship of UNICEF, WHO and the World Bank.

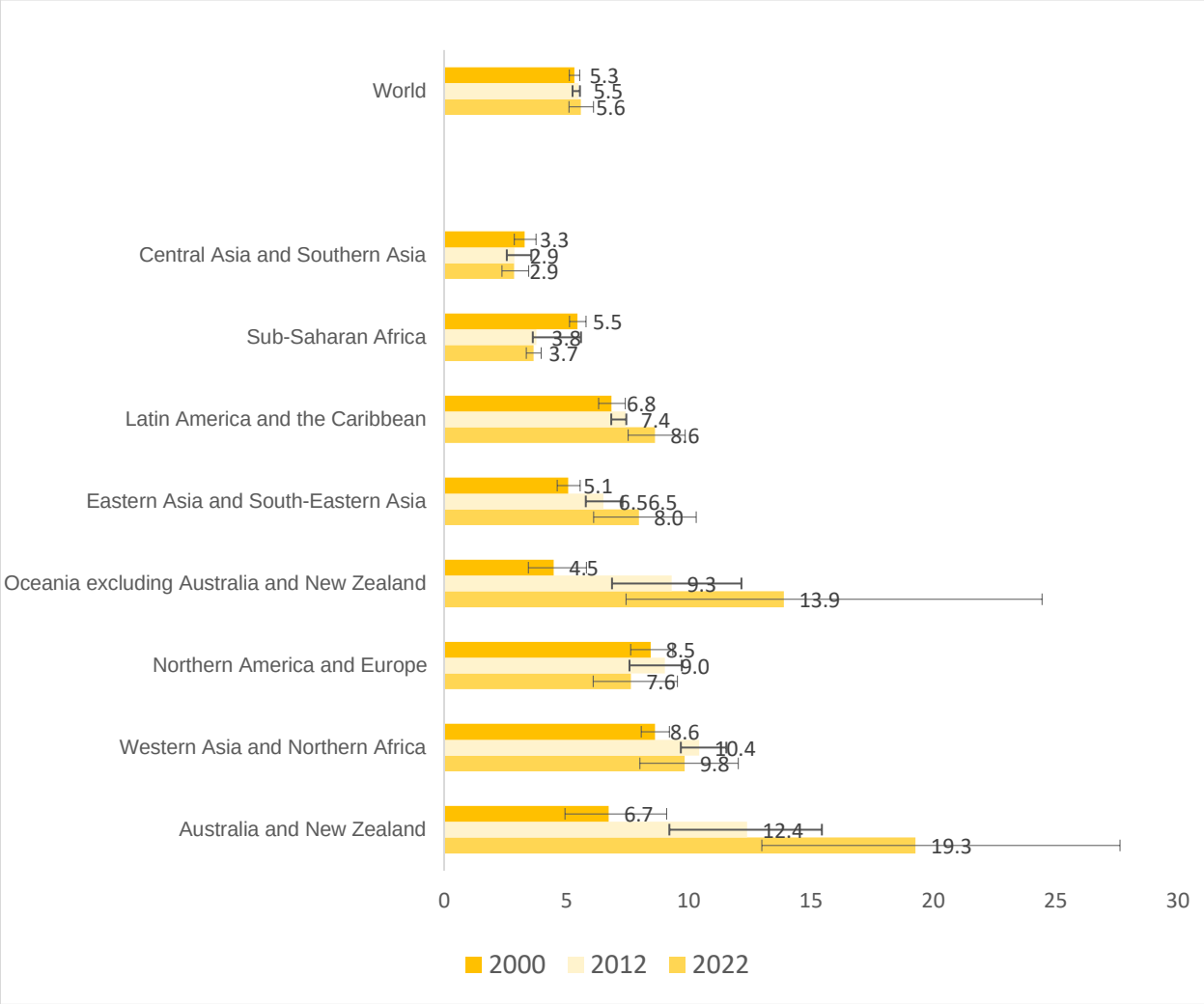
attention should be paid to the regions and subregions with high prevalence or showing the slowest progress. Indeed, the children in these regions are at higher risk of poor growth and development during the global food and nutrition crisis, which can push already vulnerable children into unprecedented levels of food poverty and nutrition vulnerability.

Figure 11. Stunting among children under 5 years of age by region and world, millions affected (2000, 2012 and 2022)



Source: United Nations. 2023. SDG Indicators Database. In: *UN Statistics Division*. New York. [Cited 8 June 2023]. https://unstats.un.org/sdgs/dataportal/database

Figure 12. Overweight among children under 5 years of age by region and world, percentage (2000, 2012 and 2022)



Source: United Nations. 2023. SDG Indicators Database. In: *UN Statistics Division*. New York. [Cited 8 June 2023]. https://unstats.un.org/sdgs/dataportal/database

SDG INDICATOR 2.2.2

Prevalence of malnutrition (weight for height >+2 or <−2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight)[4]

Target 2.2

By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.

Prevalence of wasting

Global status assessment: close to the target.

Global trend assessment: not possible due to insufficient data.

Prevalence of overweight

Global status assessment: close to the target.

Global trend assessment: no improvement.

Forty-five million children under the age of 5 years are wasted globally; meanwhile, the current levels of overweight have stagnated over the last two decades.

Wasting because of nutrient poor diets, scarcity and disease causes children to become thin, have weakened immunity, be at risk of developmental delays, and face an increased risk of death in the immediate term. Children with wasting are vulnerable to crises that have an impact on livelihoods and food security. In 2022, 6.8 percent (or 45 million) children under 5 years of age were affected by wasting. The current global prevalence demands urgent action. This is most critical for wasted children, as they are exposed to life-threatening stresses in the wake of the COVID-19 pandemic and rising food prices.

While data collection on nutrition has been delayed because of the measures put in place during the COVID-19 pandemic, the available estimates for 2022 show that two regions were disproportionately affected by wasting. In 2022, over half of all wasted children lived in Central and Southern Asia, and almost one-quarter of wasted children lived in sub-Saharan Africa. Wasting can be seasonal and change significantly from cooler to hotter months and during rainy seasons. This creates difficulties in assessing trends from data that not collected from the same season. Greater efforts are needed to bring wasting down to the global target of 3 percent for 2030. Three regions (Eastern and South-eastern Asia, Latin America and the Caribbean, and Western Asia and Northern Africa) are projected to have a wasting prevalence below 3 percent by 2030. The remaining regions where wasting is an issue have not progressed to achieve this goal, nor the 2030 Agenda SDG targets.

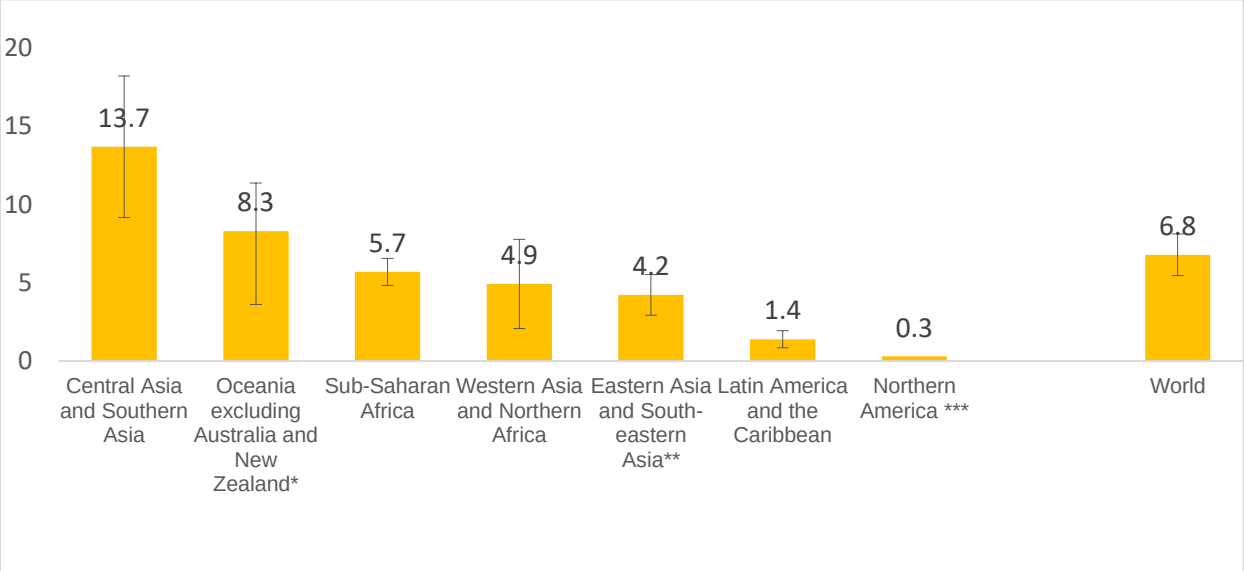
Childhood overweight is a condition found to increase the risk of diet-related non-communicable diseases later in life. It has been prompted by industry marketing and greater access to processed foods, along with inadequate levels of physical activity. Globally, overweight prevalence has

[4] SDG indicator 2.2.2 is under the custodianship of UNICEF, WHO and the World Bank.

stagnated from 5.5 percent in 2012 to 5.6 percent in 2022. Thirty-seven million children under 5 years old were affected by overweight in 2022. More progress is necessary to achieve the global target of 3 percent for 2030. At the regional and country level, in many areas, overweight prevalence is on the rise. Four out of the eight SDG regions have an increasing overweight trend from 2012 to 2022; the three with the lowest annual average rate of reduction are Australia and New Zealand (−4.6 percent per year), Oceania excluding Australia and New Zealand (−4.1 percent per year), and Eastern Asia and South-Eastern Asia (−2 percent per year). Only one region, Central Asia and Southern Asia, is on track to achieve the global target. The regions of sub-Saharan Africa, Western Asia and Northern Africa and Northern America and Europe are off track, with some progress.

Prevention of all forms of malnutrition (including wasting and overweight) is achieved through ensuring adequate maternal nutrition before and during pregnancy and lactation; optimal breastfeeding in the first two years of life; nutritious, diverse and safe foods in early childhood; and a healthy environment, including access to basic health, water, hygiene and sanitation services, and opportunities for safe physical activity. All these necessary inputs for good nutrition are vulnerable because of the changes wrought by conflict, climate change and the lingering effects of the COVID-19 pandemic. Coordinated actions are needed across nutrition, health, and social protection sectors – especially in the regions most affected – to reduce child malnutrition.

Figure 13. Prevalence of wasting among children under 5 years of age by region and world (2022)



Notes:
* Consecutive low population coverage, interpret with caution.
** Excluding Japan.
*** Regional average is based only on United States of America data, hence confidence intervals are not provided.
Source: United Nations. 2023. SDG Indicators Database. In: *UN Statistics Division*. New York. [Cited 8 June 2023]. https://unstats.un.org/sdgs/dataportal/database

SDG INDICATOR 2.2.3

Prevalence of anaemia in women aged 15 to 49 years, by pregnancy status (percentage)[5]

Target 2.2

By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.

Global status assessment: very far from the target.
Global trend assessment: no improvement.

The prevalence of anaemia in women aged 15 to 49 years continues to be alarming, stagnating at around 30 percent since 2000.

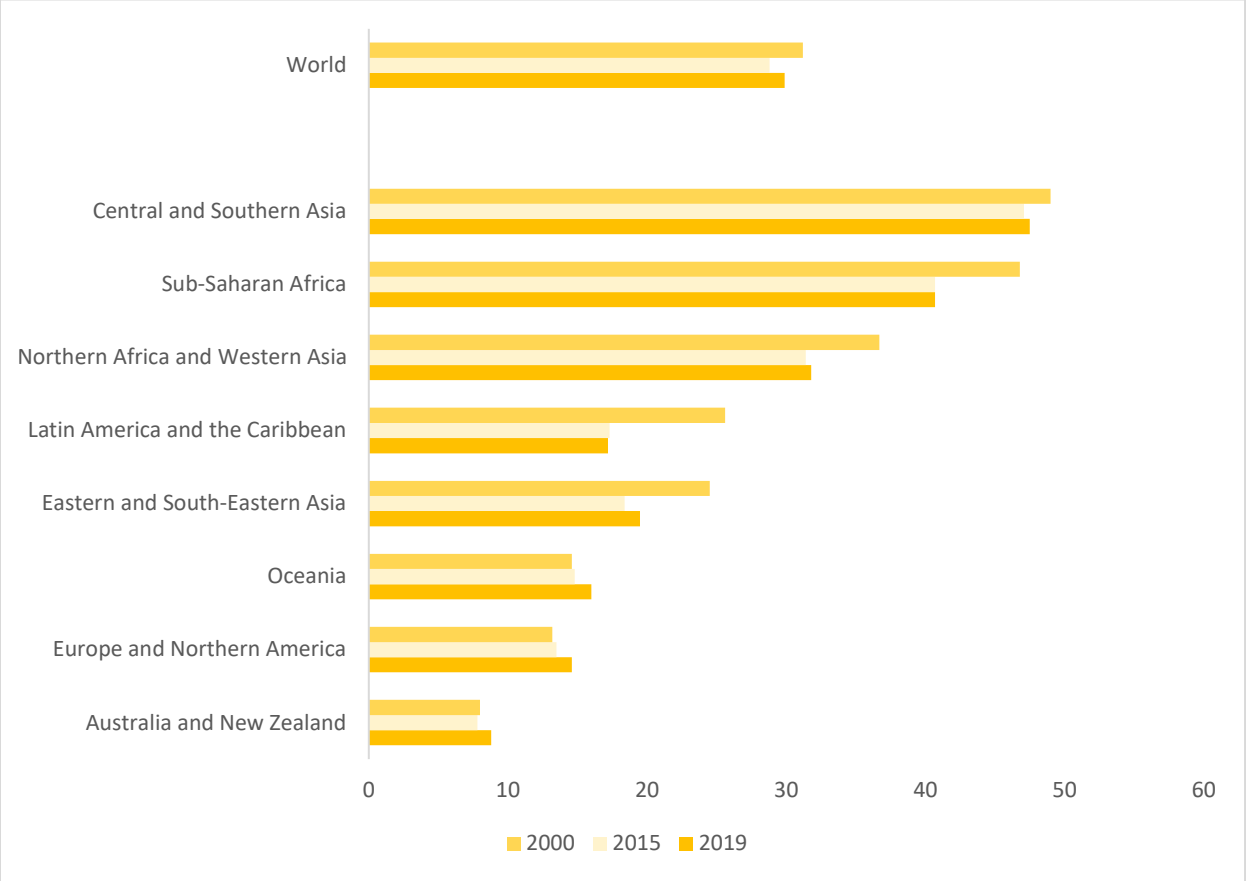
Anaemia is the most common blood disorder in the world, mostly affecting children under 5 years of age and women of reproductive age. Anaemia can negatively impact child growth and development, and leads to decreased work productivity and increased morbidity and mortality in women. Anaemia during pregnancy is a key contributor to maternal mortality and poor birth outcomes in both low- and high-income countries. Anaemia can also be an independent risk for severe illness of COVID-19.

In 2019, there were over half a billion women aged 15 to 49 years with anaemia, with a prevalence of 29.9 percent. Global anaemia prevalence was 29.6 percent in non-pregnant women and 36.5 percent in pregnant women. Although several regions and the world as a whole made some progress between 2000 and 2015, the situation has reversed in recent years. Since 2015, the prevalence of anaemia in women from 15 to 49 years of age has not decreased in any region nor globally. When comparing percentages, there was an increase in most of the regions between 2015 and 2019.

Anaemia in women is a risk factor for adverse maternal and perinatal outcomes, highlighting the importance of addressing this issue for both women and child health and nutrition. Nutrition, infectious disease and genetic haemoglobin disorders are the three main contributors to anaemia, which are mostly related to poverty. To effectively address anaemia at the country or regional level, an assessment of determinants of anaemia is needed. Interventions should address these context-specific determinants and consider a multisectoral approach (e.g. tackling nutrition, health, water sanitation and hygiene, poverty alleviation, agriculture, industry and education), involving comprehensive programmes that include evidence-based interventions delivered with quality care and coverage.

[5] SDG Indicator 2.2.3 is under the custodianship of the WHO.

Figure 14. Proportion of women aged 15 to 49 years with anaemia, percentage (2000, 2015, 2019)



Note: Anaemia is defined as the prevalence of haemoglobin concentrations below 110 g/L for pregnant women and 120 g/L for non-pregnant women,

Source: United Nations. 2023. SDG Indicators Database. In: *UN Statistics Division*. New York. [Cited 8 June 2023]. https://unstats.un.org/sdgs/dataportal/database

Box 1. Progress monitoring towards SDG 2 is missing a key component: healthy diets

Ensuring healthy diets is key to SDG 2. Healthy diets are necessary for preventing all forms of malnutrition and for promoting a variety of nutrition and health outcomes. However, healthy diets are not directly captured by any of the current set of SDG indicators, which track the prevalence of undernourishment (hunger), food insecurity (according to the food insecurity experience scale [FIES]), and nutritional status (child stunting and wasting and women's anaemia).

While hunger, food insecurity, healthy diets and nutrition status are inextricably linked, they are not synonymous or interchangeable in terms of what they measure and reflect. Food insecurity can affect diet quality in many ways, potentially contributing to several forms of undernutrition but also to overweight and obesity (FAO, IFAD, UNICEF, WFP and WHO, 2020). Likewise, sufficient calories available for consumption at national level, measured through the prevalence of undernourishment (PoU), does not provide evidence of adequate availability of essential nutrients, nor can it be used to assess the question of equity as it does not provide insight into what is consumed by individuals. Nutritional status outcomes (stunting, wasting, anaemia) are complex, and their eradication requires improvements in healthy diets to occur in tandem with advances in health, poverty reduction and many other areas.

Some of these limitations can be illustrated by comparing country estimates for PoU, FIES, anaemia in women and the Minimum dietary diversity for women (MDD-W) indicator. The MDD-W indicator measures minimally adequate dietary diversity (consumption of at least 5 out of 10 food groups), which is one of several core components of healthy diets. In 2017 and 2018, PoU estimates for Tajikistan and Nigeria were relatively similar (11.6 percent and 10.4 percent, respectively). However, MDD-W collected in the same years through the Demographic and health survey (DHS) revealed that while 80 percent of women of reproductive age were reaching MDD-W in Tajikistan, only 56 percent of women achieved MDD-W in Nigeria. That is, with the same availability of dietary energy (calories), women in Tajikistan were achieving far better dietary diversity than women in Nigeria.

The reverse phenomenon can also be observed. Worrying levels of moderate or severe food insecurity and hunger in Sierra Leone (FIES: 85.3 percent in 2018–2020; PoU: 27.9 percent in 2019) were experienced on a much lesser scale in Nepal (FIES: 31.2 percent in 2015–2017; PoU: 4.5 percent in 2016). However, MDD-W collected by DHS in 2016 and 2019, respectively, revealed a similar, if not lower prevalence of MDD-W in Nepal (50 percent), compared to 56 percent in Sierra Leone. In other words, women were consuming similarly diverse diets in two markedly different contexts in terms of hunger and food insecurity. In an analogous situation, in 2016 and 2017, the prevalence of anaemia was similar in Nepal (35.3 percent) and Tajikistan (33.8 percent), respectively. However, MDD-W estimates were markedly different (50 percent versus 80 percent, respectively).

Box 1. **(Continued)**

These examples appear counterintuitive, but reveal some of the limitations of current SDG 2 indicators. They demonstrate how hunger, food insecurity and nutritional status may not directly reflect aspects of healthy diets. Serious issues related to the healthfulness of diets in countries that have known implications for nutritional outcomes may be missed by focusing solely on PoU, FIES or indicators of nutritional status. This similarly implies that progress on PoU, FIES and anaemia cannot serve as proxies for progress towards healthy diets among adults.

Achieving healthy diets for all is a prerequisite that goes beyond the eradication of hunger to realizing the ambition of SDG 2 for *improved nutrition*, to ensure the health, growth and human capital on which all SDGs rely. The current indicator framework for SDG 2 does not directly capture this fundamental link and therefore should be complemented by other indicators (including the MDD-W) to better inform actions for realizing healthy diets and ultimately eradicating all forms of malnutrition.

Source: Authors' own elaboration.

Table A. Country-level prevalence estimates of Minimum dietary diversity score for women, the prevalence of undernourishment, and the Food Insecurity Experience Scale

Country	Minimum dietary diversity score for women (MDD-W) % Demographic and health survey (year)	Prevalence of undernourish-ment % FAO (year) (*)	Severe food insecurity % FAO (years) (*)	Moderate or severe food insecurity % FAO (years) (*)	Anaemia % World Health Organization (WHO) (year) (**)
Nepal	50 (2016) (***)	4.5 (2016)	9.6 (Confidence interval (CI): 7.9–11.3) (2015–2017)	31.2 (CI: 28–34.3) (2015–2017)	35.3 (CI: 27.3–43) (2016)
Nigeria	56 (2018) (***)	10.4 (2018)	15.1 (CI: 12.9–17.3) (2017–2019)	47.1 (CI: 43.5–50.7) (2017–2019)	55 (CI: 43.7–65) (2018)
Sierra Leone	56 (2019) (****)	27.9 (2019)	32.2 (CI: 30.7–33.7) (2018–2020)	85.3 (CI: 84.2–86.3) (2018–2020)	48.4 (40.4–56.4) (2019)
Tajikistan	80.0 (2017) (***)	11.6 (2017)	Not applicable	Not applicable	33.8 (26.6–41.6) (2017)

Notes: DHS = demographic and health survey; PoU = prevalence of undernourishment; WHO = World Health Organization; and CI = confidence interval.

Sources:

*FAO. 2023. Indicators. In: *Sustainable Development Goals*. Rome. [Cited 12 June 2023]. https://www.fao.org/sustainable-development-goals/indicators/211/en/

**World Health Organization (WHO). 2023. Prevalence of anaemia in women of reproductive age (aged 15-49) (%). In: *Global Health Observatory*. Geneva. [Cited 14 June 2023]. https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-anaemia-in-women-of-reproductive-age-(-)

***FAO, IFAD, UNICEF, WFP and WHO. *The State of Food Security and Nutrition in the World 2020. Transforming food systems for affordable healthy diets*. Rome, FAO. https://doi.org/10.4060/ca9692en

**** Statistics Sierra Leone, ICF International. 2019. *Sierra Leone Demographic and Health Survey*. Vol. 16. Freetown, Sierra Leone and Rockville, Maryland, USA. Also available at: https://dhsprogram.com/pubs/pdf/FR365/FR365.pdf

SDG INDICATOR 2.3.1

Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size

Target 2.3

By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.

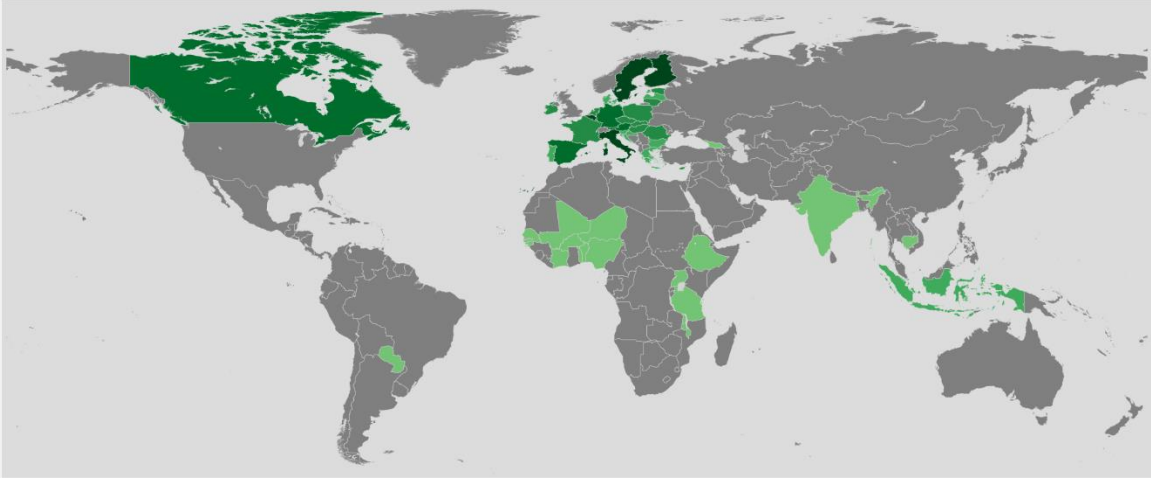
Global status assessment: not possible due to insufficient data.
Global trend assessment: not possible due to insufficient data.

The productivity of small-scale food producers continues to lag behind that of larger-scale producers, with more pronounced differences in higher-income countries. Among small-scale food producers, the labour productivity of production units headed by men and women are similar.

Small-scale food producers provide key contributions to the resilience of agricultural and food production systems, which is important to combat hunger. While they account for significant shares of food production in several countries, they are often among the most vulnerable groups in rural areas and within the agrifood system.

According to the latest available country figures, small-scale food producers' labour productivity is less than USD 25 per day (at constant 2017 purchasing power parity [PPP]), in some low- and middle-income countries (Figure 15). In addition, the labour productivity of small-scale food producers continue to lag behind those of larger-scale producers, with more pronounced differences in higher income countries. In most European countries reported and Canada, the labour productivity of small-scale producers is less than one quarter that of larger-scale producers (Figure 16).

Figure 15. Average labour productivity for small-scale food producers, 2017 purchasing power parity (United States dollars) (latest year reported)

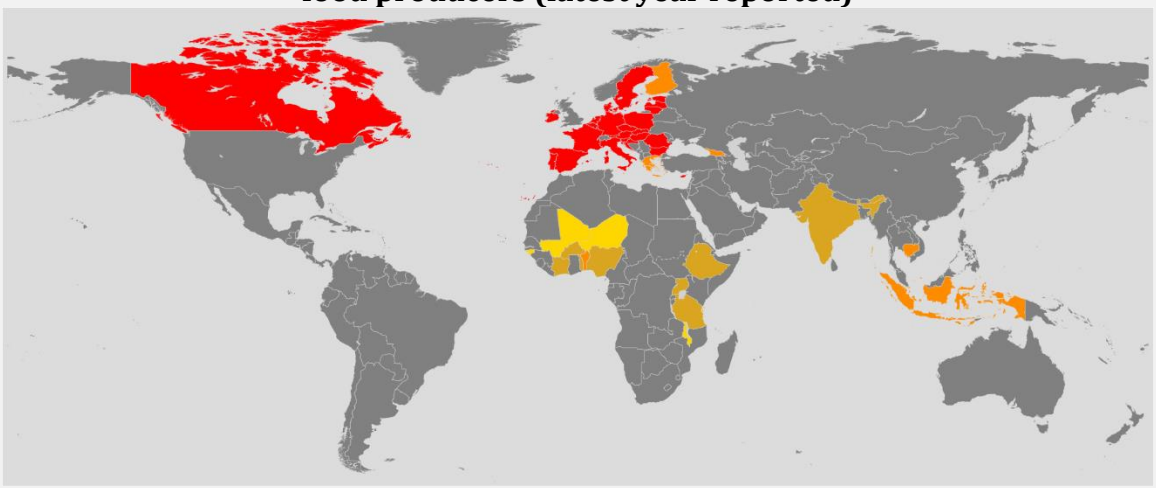


	[0–25]
	(25–50]
	(50–75]
	(75–100]
	>100
	No data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 16. Ratio of average labour productivity for small-scale over non-small-scale food producers (latest year reported)



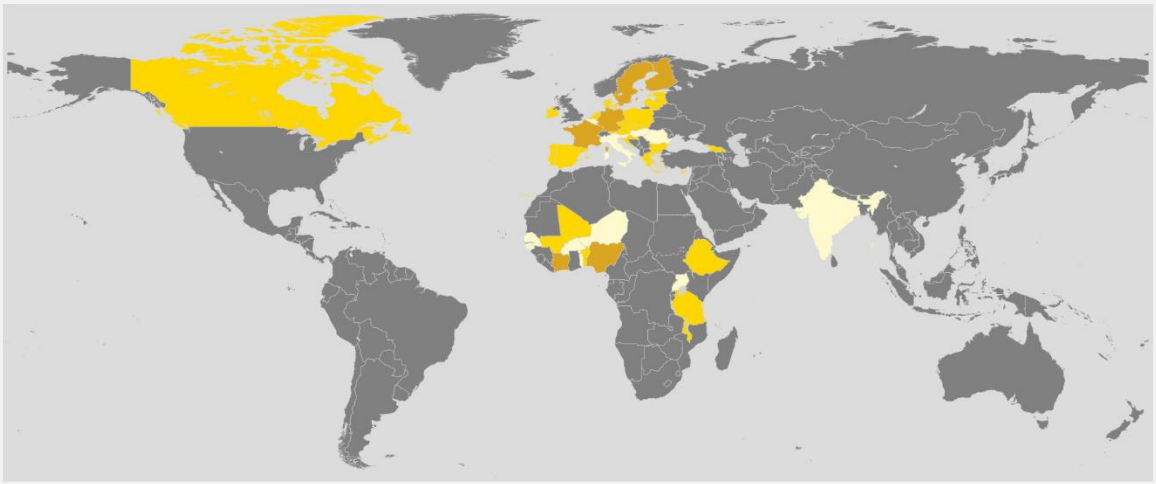
	[0–0.25]
	(0.25–0.5]
	(0.5–0.75]
	(0.75–1]
	>1
	No data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Among small-scale food producers, the labour productivity of production units headed by men and women are similar, with units headed by women achieving 90 percent or more of the labour productivity of those headed by men in almost half of reported countries (Figure 17).

Figure 17. Ratio of average labour productivity of female-headed over male-headed holdings (latest year reported)



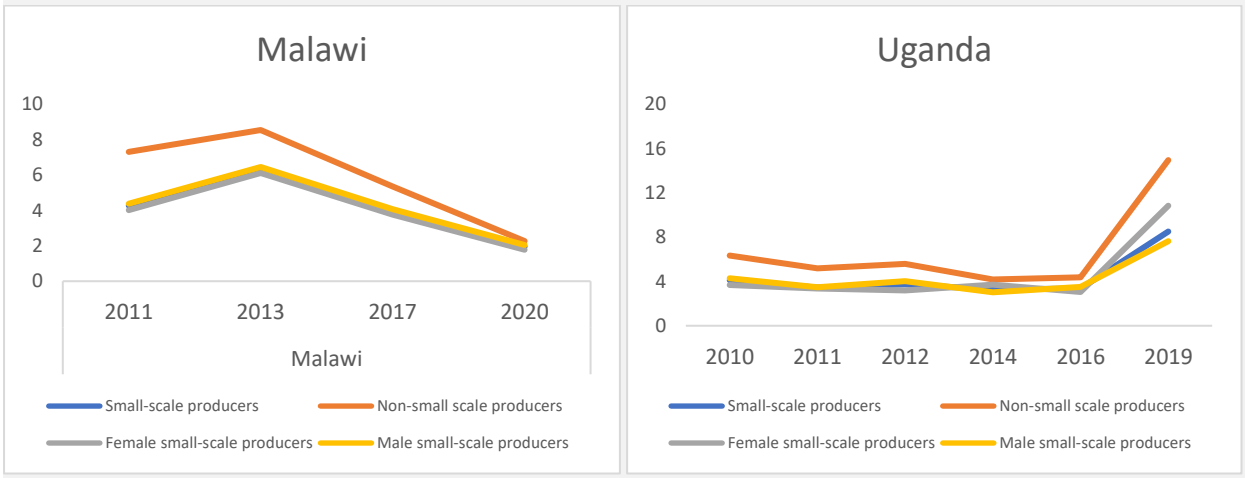
	[0–0.25]
	(0.25–0.5]
	(0.5–0.75]
	(0.75–1]
	>1
	No data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

The limited availability of data on the productivity and incomes of food producers makes it difficult to discern any noticeable global trend over time. However, as some countries do have data spanning several years, trends contrasting the productivity of small-scale food producers and their large-scale counterparts can be examined. Figure 18 provides such insights for some countries. In Uganda, while the productivity of small-scale and non-small food producers increased significantly between 2016 and 2019, the gap between small-scale and non-small food producers' productivity widened significantly, reversing the previous trend of reducing the gap. Meanwhile, in Malawi, productivity initially increased and peaked in 2013, and decreased thereafter, while the gap between the productivity of small-scale and large-scale food producers has decreased. These findings reflect a lack of uniformity in attaining progress towards this target across countries.

Figure 18. Average labour productivity by producer size and by sex, 2017 purchasing power parity (United States dollars)



Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

SDG INDICATOR 2.3.2

Average income of small-scale food producers, by sex and indigenous status

Target 2.3

By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.

Global status assessment: not possible due to insufficient data.
Global trend assessment: not possible due to insufficient data.

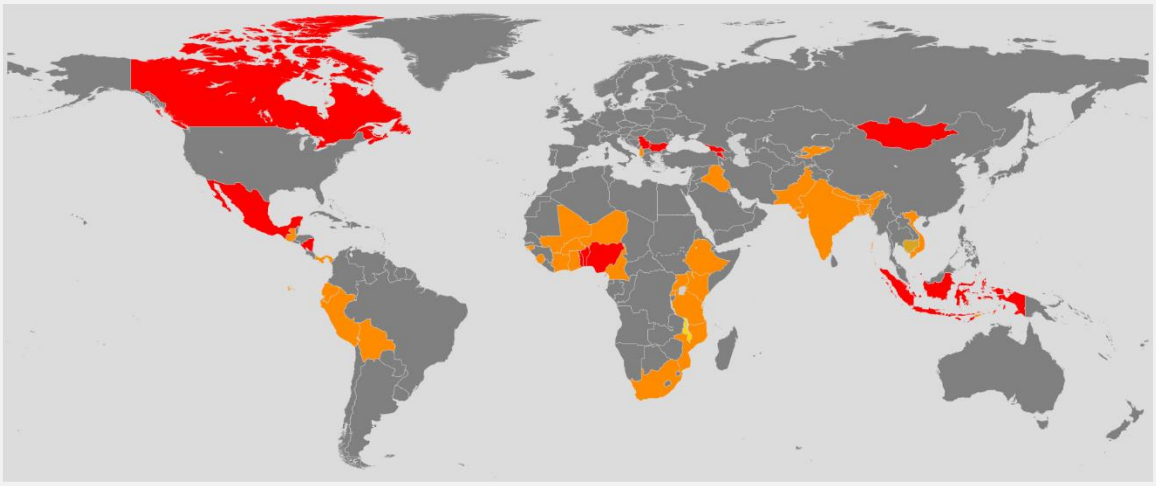
The incomes of small-scale food producers continue to lag behind those of their larger-scale counterparts, with an average annual income less than half that of large-scale food producers in 90 percent of the reported countries.

Small-scale producers are key stakeholders of agrifood systems, particularly in low- and middle-income countries. They contribute substantially to many national economies and comprise many groups, including women, the young and Indigenous Peoples. Despite their importance, small-scale producers are frequently unable to compete successfully with their large-scale counterparts.

According to the latest available country figures, the incomes of small-scale food producers continue to lag behind those of larger-scale producers. In the majority of countries reported (64.4 percent), the small-scale food producer annual income from agriculture is less than USD 1 500 (constant PPP 2017) while in all of them, it is less than 4 500 USD (constant PPP 2017). In addition, in 90 percent of reported countries, small scale food producers show an average annual income of less than half that of large-scale food producers (Figure 19).

Among small-scale food producers, the income of men-headed production units is systematically larger than the income of those headed by women. In about half of the countries with available data, women-headed small-scale food production units gained an income of between 50 and 75 percent of the income of those headed by men (Figure 20). Despite the fact that the productivity of women is on par with that of men, their income is much lower.

Figure 19. Ratio of annual income from agriculture of small-scale over non-small-scale food producers (latest year reported)

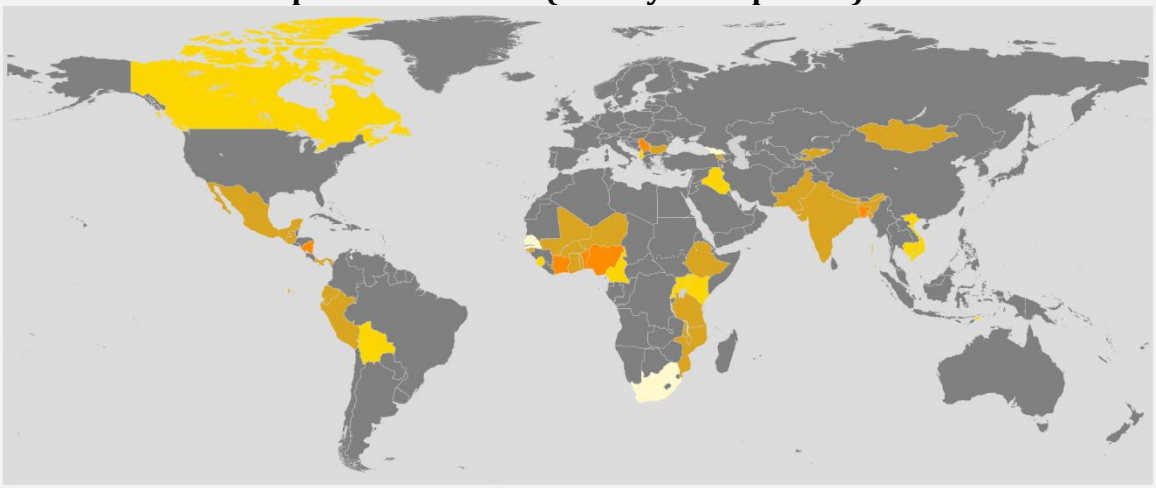


	[0–0.25]
	(0.25–0.5]
	(0.5–0.75]
	(0.75–1]
	>1
	No data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 20. Ratio of small-scale female-headed over small-scale male-headed production units (latest year reported)

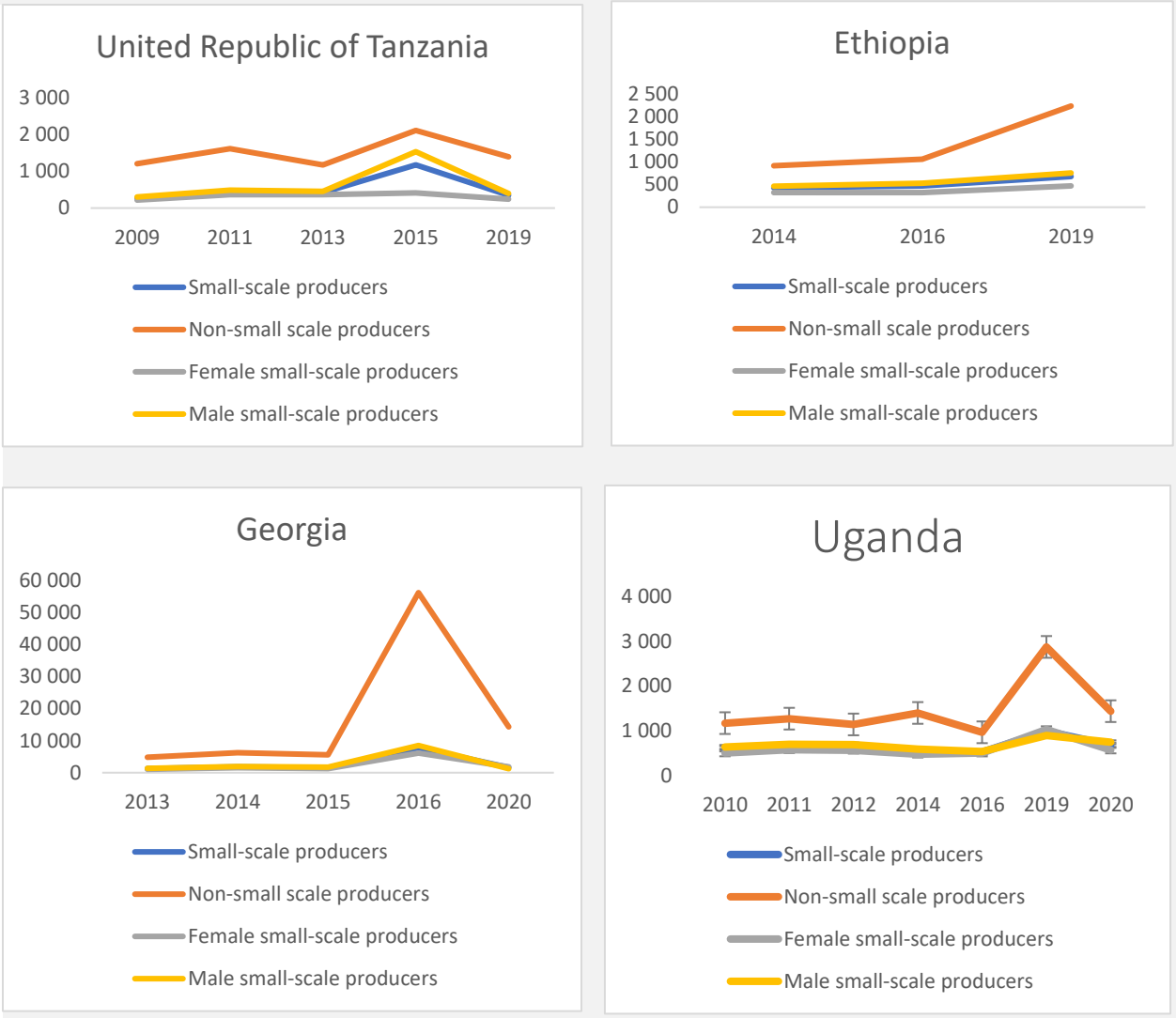


	[0–0.25]
	(0.25–0.5]
	(0.5–0.75]
	(0.75–1]
	>1
	No data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Sudan and South Sudan has not yet been determined.
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
(modified to comply with the UN Geospatial Information Section, 2023).

The limited availability of data on the productivity and incomes of food producers makes it difficult to discern any noticeable trend over time. However, specific country cases with data for an adequate period of time can be examined to understand trends in recent years, including from a gender-disaggregated perspective. Figure 21 provides insights into trends in a number of countries. After a continuous gradual increase in the income of small-scale food producers, the United Republic of Tanzania experienced a steep decline between 2015 and 2019. In Ethiopia, the income from agriculture of both large and small-scale food producers increased between 2014 and 2019, but at a higher rate for the former; while in Georgia, both large and small-scale food producers experienced a decline between 2016 and 2019. In Uganda, incomes of small-scale food producers decreased sharply between 2019 and 2020 after a generally upward trend since 2010; in particular, female food producers suffered a higher degree of decline.

Figure 21. Average annual income from agriculture by producer size and sex (2017 purchasing power parity, United States dollars)



Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

SDG INDICATOR 2.5.1.A

Number of plant genetic resources for food and agriculture secured in either medium- or long-term conservation facilities

Target 2.5

By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.

Global status assessment: not possible due to absence of numerical yardstick in the target.

Global trend assessment: improvement.

Target 2.5 was one of 21 targets of the 2030 Agenda set for in 2020. However, as the world is still far from maintaining the genetic diversity of seeds, plants and animals for food and agriculture, continued efforts towards achieving the target and monitoring the indicators are critical. Prior to its inclusion in the Agenda 2030, Target 2.5 was part of the Aichi Biodiversity Targets set out by the United Nations Convention on Biological Diversity in 2011. It is included in the monitoring framework of the Kunming-Montreal Global Biodiversity Framework (GBF), adopted by the Conference of Parties (COP 15) in 2022 to succeed to the Aichi Biodiversity Targets, which demonstrates the continuing relevance of these targets and the three underlying indicators.

The global response to the growing threat of climate change needs to be accelerated to adequately preserve crop and crop-associated diversity.

The number of accessions of plant genetic resources for food and agriculture conserved *ex situ* under medium- or long-term conditions increased by 1.1 percent year-on-year in 2021. This is equal to about one-third of the average annual growth rate of germplasm accessions over the past 26 years. After the first year of the COVID-19 pandemic, genebanks' operations (including the collection and acquisition of new germplasm) have gradually returned to normality, and the trend of a continued increase in the number of global germplasm holdings resumed after the lull observed in 2020. The newly added materials to the *ex situ* collections were mainly landrace and farmers' varieties (34 percent), research materials (16 percent) and wild samples (14 percent).

Efforts to preserve the diversity of plant genetic resources in *ex situ* collections need to be strengthened, particularly for crop wild relatives, wild food plants and neglected and underutilized crop species, in view of the increasing pressure faced by these species in both wild and agricultural settings.

Plant genetic resources are at the base of productive, resilient and adaptive agricultural systems and directly and indirectly underpin the world's food security and nutrition. It is estimated that at the end of 2021, 5.8 million accessions of plant genetic resources for food and agriculture were conserved under medium- or long-term conditions in 846 gene banks in 115 countries and 17

regional and international research centres. These estimates are based on updated reports from 39 countries and 15 research centres, representing 51.1 percent of total holdings, and on reports from recent years for the remaining countries and centres.

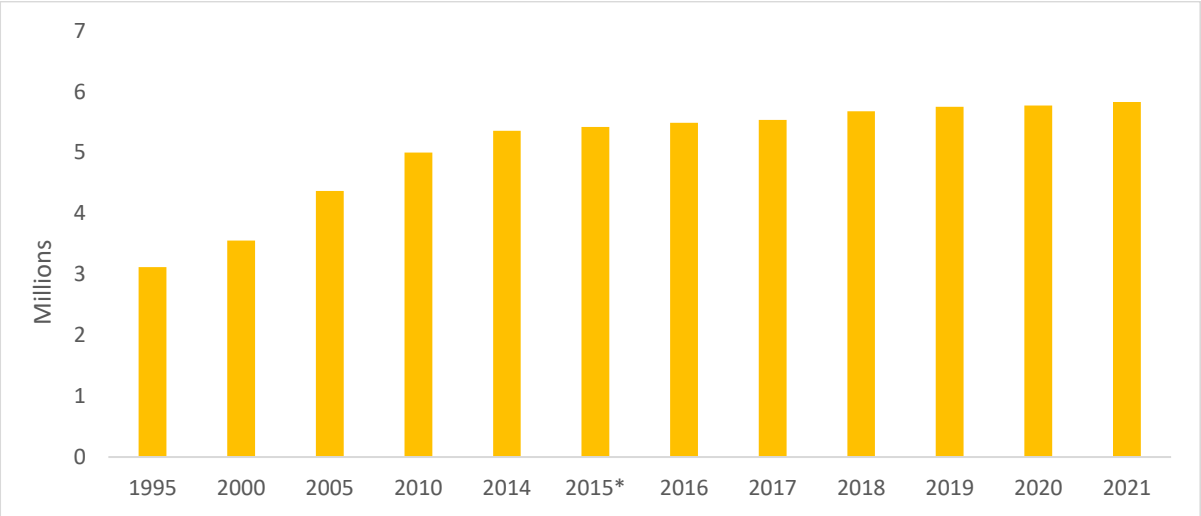
The highest net increase in gene bank holdings was observed in Oceania excluding Australia and New Zealand (+16.4 percent), followed by Southern Europe (+6 percent), Western Asia (+2.9 percent), Western Europe (+1 percent) and Western Africa (+0.7 percent). Over the years, the number of conserved germplasm accessions increased by more than 1 percent in 19 out of the 39 countries and in 4 out of the 14 regional or international centres with updated reports.

Net decreases in genebank holdings of more than 1 percent occurred in one country in Europe (−4.9 percent) and in one international centre (−4.2 percent). Losses were ascribed to the identification and elimination of duplicate records rather than to actual reductions in stored material.

As of December 2021, 321 gene banks around the world conserved 86 250 samples from over 1 815 species listed in the International Union for Conservation of Nature (IUCN) categories of global major concern. Among these are underutilized crops and wild relatives of crops that are particularly important for global and local food security and livelihoods, especially in marginal environments such as arid and semi-arid zones. These species include upland cotton, coffee, plums and mat beans, and wild relatives of maize, wheat, oats, cowpea, lupines, apricots and apples.

The growing threats posed by climate change to crop and crop-associated diversity under on-farm and wild conditions over the past 25 years have been alarming. Crop wild relatives, wild food plants and neglected and underutilized crop species have been among the plant groups most at risk. The global response in preserving crop diversity in standard compliant *ex situ* facilities has been insufficient to respond to the increasing threats. Vulnerable plant groups continue to be missing from gene bank collections, or their intraspecific diversity is poorly represented.

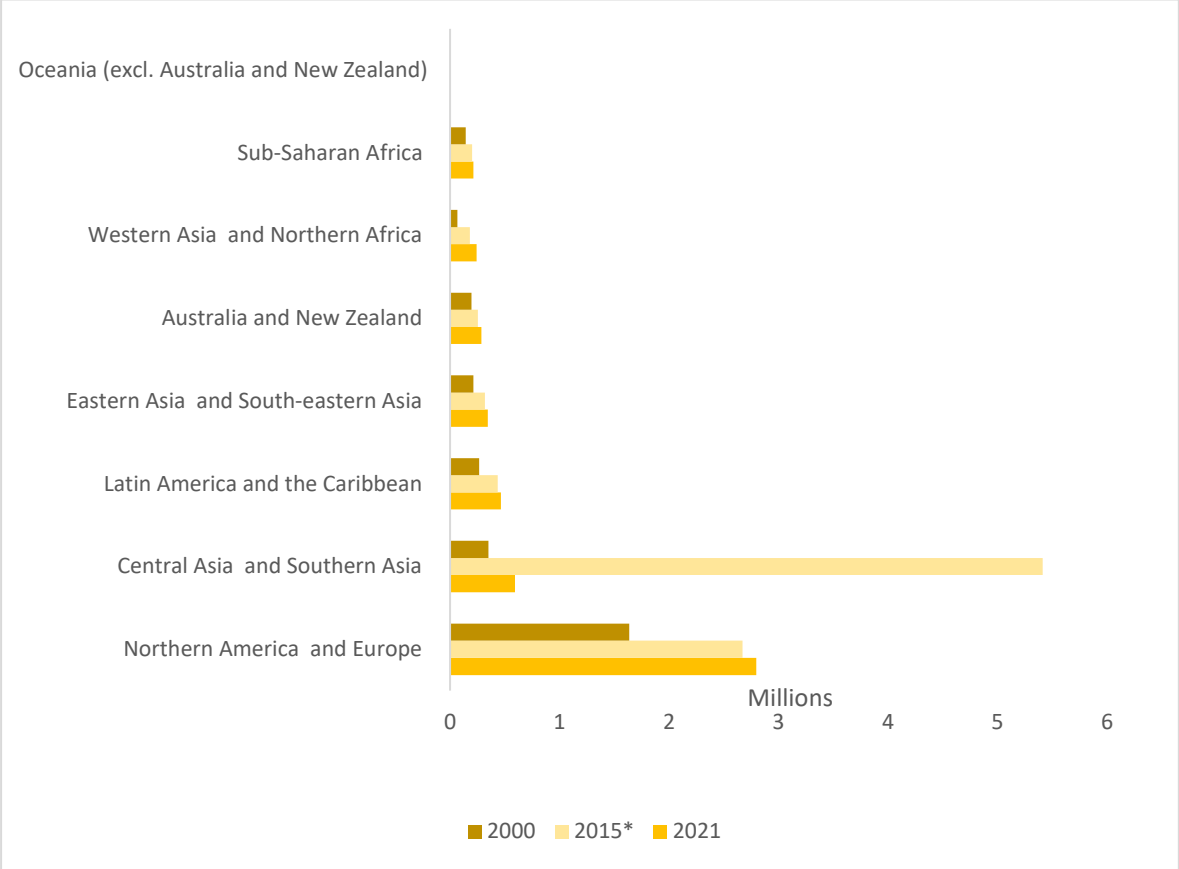
Figure 22. Number of accessions of plant genetic resources secured in medium- or long-term conservation facilities in the world (1995–2021)



Note: *2015 values are a simple average of 2014 and 2016 values.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

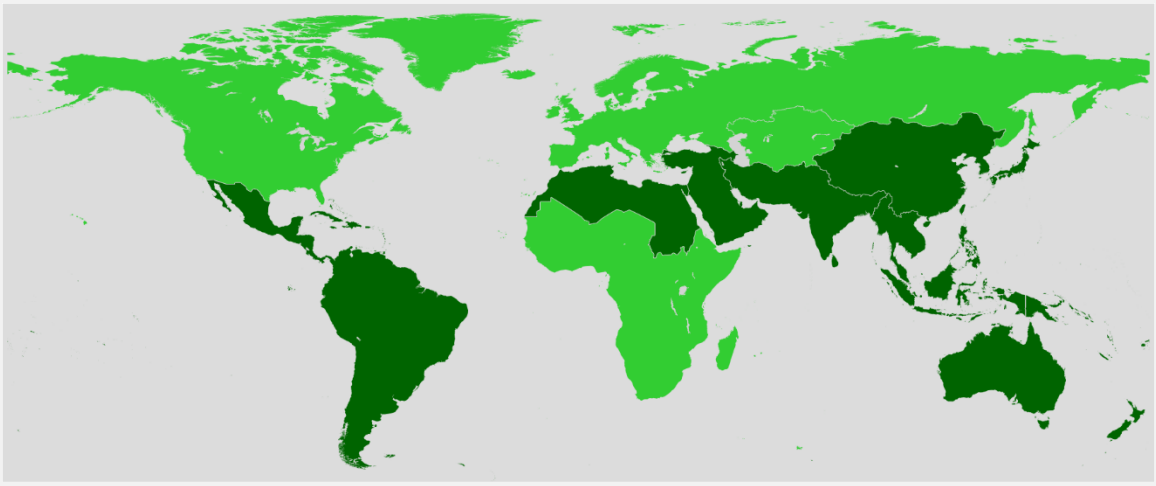
Figure 23. Plant genetic resources accessions stored *ex situ* (millions) (2000, 2015* and 2021)



Note: *2015 values are a simple average of 2014 and 2016 values.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig23

Figure 24. Trend in the number of plant genetic resources for food and agriculture secured in medium- or long-term conservation facilities at regional level (2016–2021)



	Improvement
	Slight or no improvement
	Slight deterioration
	Deterioration
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

SDG INDICATOR 2.5.1.B

Number of animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities

Target 2.5

By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.

Global status assessment: not possible due to insufficient data.
Global trend assessment: not possible due to insufficient data.

Target 2.5 was one of 21 targets of the 2030 Agenda that was set for in 2020. However, as the world is still far from maintaining the genetic diversity of seeds, plants and animals for food and agriculture, continued efforts towards achieving the target and monitoring the indicators are critical. Prior to its inclusion in the Agenda 2030, Target 2.5 was part of the Aichi Biodiversity Targets set out by the United Nations Convention on Biological Diversity in 2011. It is included in the monitoring framework of the Kunming-Montreal Global Biodiversity Framework (GBF), adopted by the Conference of Parties (COP 15) in 2022 to succeed to the Aichi Biodiversity Targets, which demonstrating the continuing relevance of these Targets and the three underlying indicators.

Although recent years have seen progress in the preservation of the genetic diversity of both local and transboundary breeds, an acceleration of efforts is essential to adequately conserve their genetic diversity.

The diversity of farmed and domesticated animals is mainly maintained through two complementary approaches, *in vivo in situ* and *in vitro ex situ* conservation, data which need to be interpreted together to understand the current status and progress needed on this matter. *In vivo in-situ* refers to living animals kept and used in the livestock production system. If the number of living animals in a population falls below certain thresholds, they are considered to be at risk of extinction. Livestock keepers and governments must take action to maintain populations and to prevent breeds' extinction.

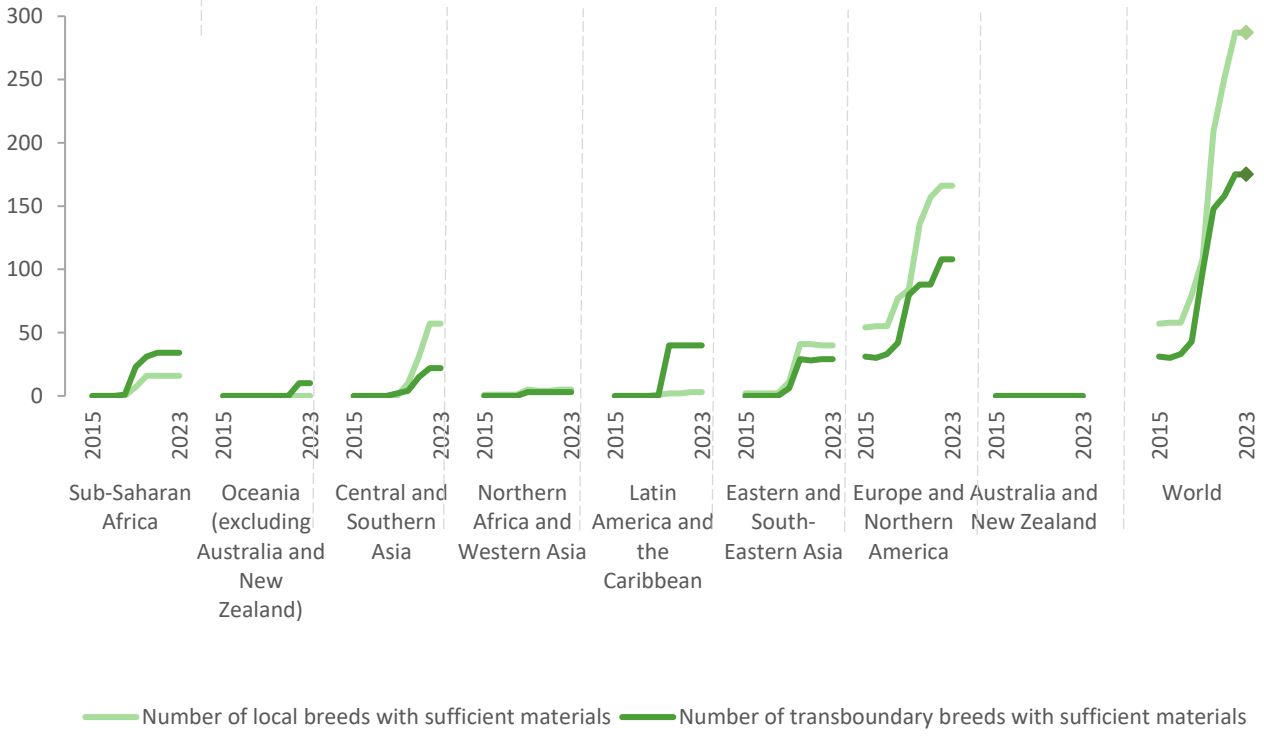
Another way to preserve breed diversity for the future is to store cryopreserved genetic material in gene banks. This is called *in vitro ex situ* conservation. Currently, the limited number of countries with updated data hamper a meaningful assessment of global results.

A stable or decreasing percentage of breeds at risk in combination with an increasing number of breeds with sufficient material cryoconserved can be interpreted as a positive trend regarding the achievement of the target. However, we are still far from maintaining the genetic diversity of farmed and domesticated animals.

For *in vitro ex situ* conservation, the number of local and transboundary breeds that have sufficient material is alarmingly low, with only 287 out of 7 688 local breeds, and 175 out of 1 115 transboundary breeds in 2022.

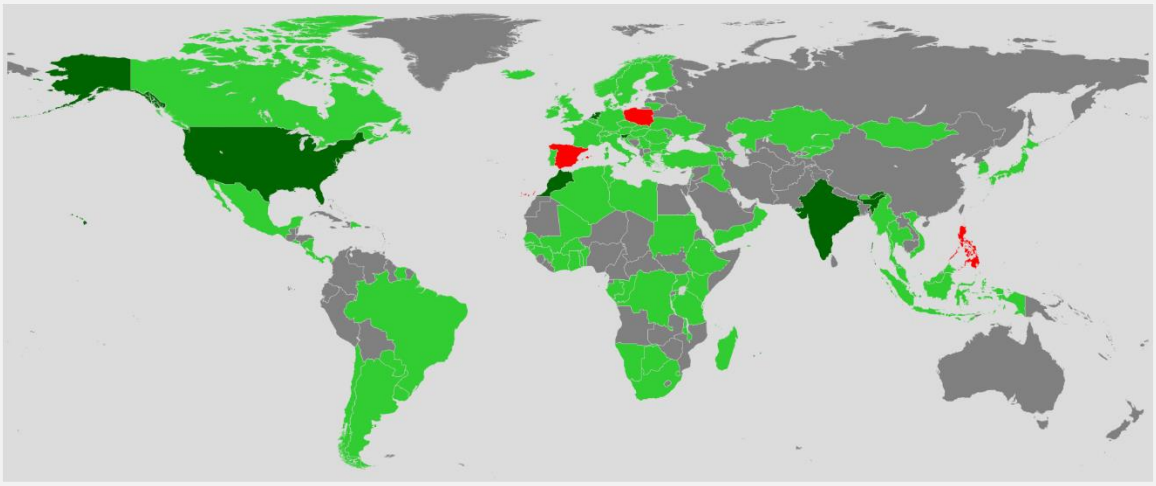
Given that the number of endangered breeds is unlikely to decrease significantly in the near future, countries need to strengthen efforts to store genetic material in sufficient quantities. As of 2023, the number of local and transboundary breeds for which sufficient material is stored is alarmingly low. In North America and Europe, sufficient material is reported for 4.54 percent of local breeds (166 of 3 649 local breeds), and 14.5 percent of transboundary breeds (108 out of 744). This is the case for only 3.42 percent of local breeds (40 out of 1 168) and 12.6 percent (29 of 231) of transboundary breeds in Eastern and South-eastern Asia; and for 2 percent (16 of 805) of local and 9.2 percent (34 of 370) of transboundary breeds in sub-Saharan Africa.

Figure 25. Number of local and transboundary breeds for which sufficient genetic materials are stored for reconstitution (2015–2023)



Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig25

Figure 26. Progress towards securing local animal genetic resources for food and agriculture in medium- or long-term conservation facilities (2020–2023)



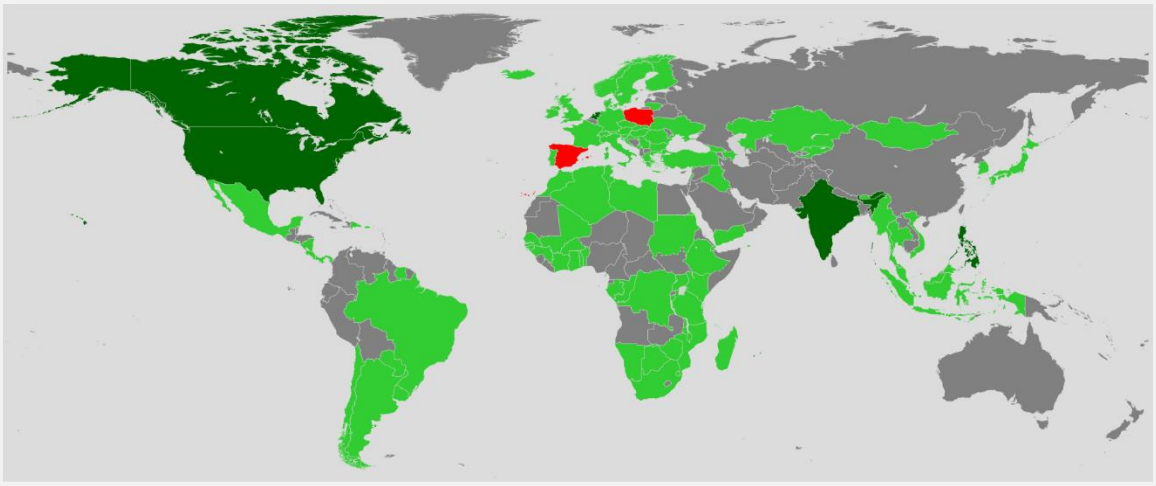
	Improvement
	Slight or no improvement
	Slight deterioration
	Deterioration
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

The year 2020 is the baseline year, because it is the first year when country coverage exceeded 50 percent, enabling a global assessment to be conducted.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 27. Progress towards securing transboundary animal genetic resources for food and agriculture in medium- or long-term conservation facilities (2020–2023)



	Improvement
	Slight or no improvement
	Slight deterioration
	Deterioration
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.
The year 2020 is the baseline year, as most countries included in the assessment reported the indicator for the first time in 2020.
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

SDG INDICATOR 2.5.2

Proportion of local breeds classified as being at risk of extinction

Target 2.5

By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.

Global status assessment: not possible due to insufficient data.
Global trend assessment: not possible due to insufficient data.

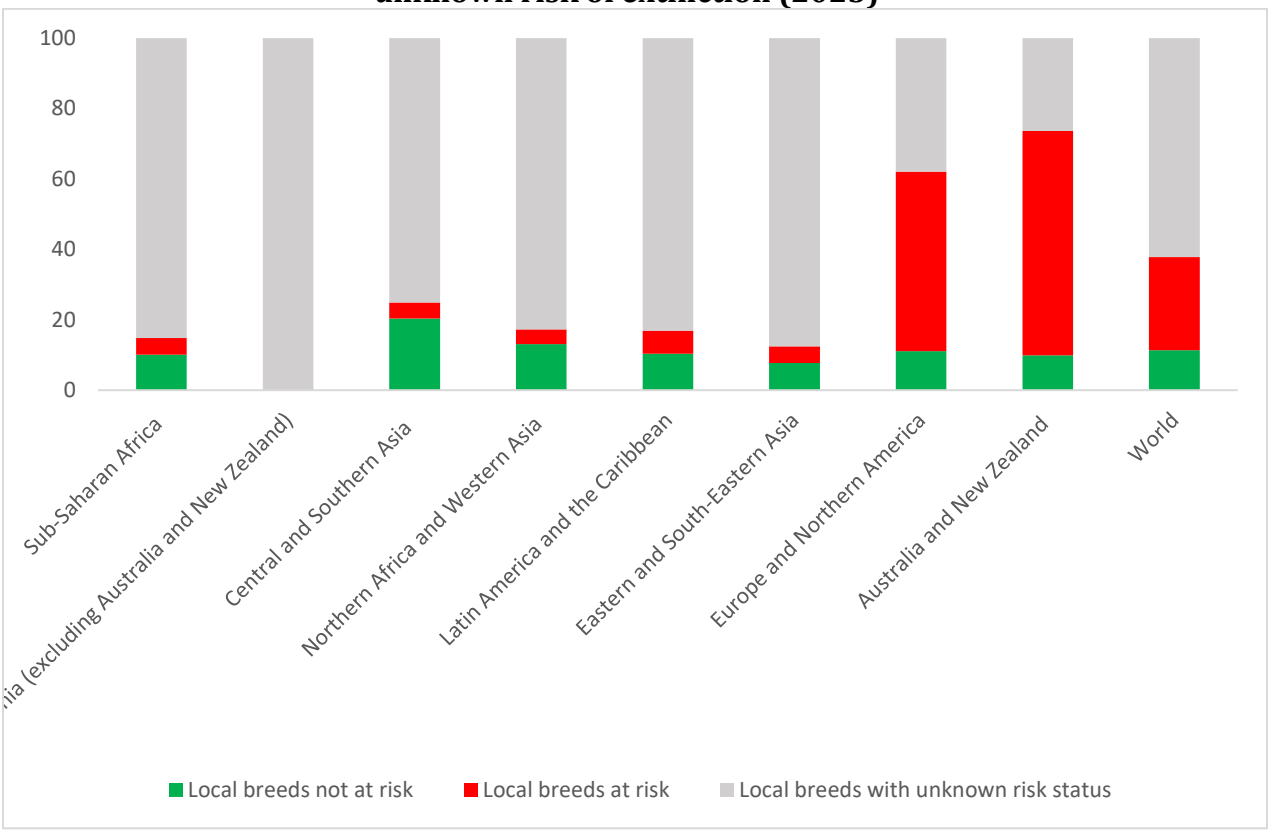
The proportion of farmed and domesticated animal breeds at risk of extinction remains worryingly high. Furthermore, the limited availability of data hinders complete understanding of the seriousness of the issue for the majority of breeds.

The diversity of farmed and domesticated animals is mainly maintained through two complementary approaches, *in vivo in situ* and *in vitro ex situ* conservation, data that need to be interpreted simultaneously to understand the current status and progress needed on the matter. While the previous section detailed the status of *in vitro ex situ* conservation, this section deals with *in vivo in situ* conservation, which refers to living animals kept and used in the livestock production system. If the number of living animals in a population falls below certain thresholds, it is considered to be at risk of extinction.

A stable or decreasing percentage of breeds at risk can be interpreted as a positive trend regarding achievement of the target. However, we are still far from maintaining the genetic diversity of farmed and domesticated animals. Additionally, currently, the limited number of countries with updated data hamper meaningful assessment of global results (Figure 28).

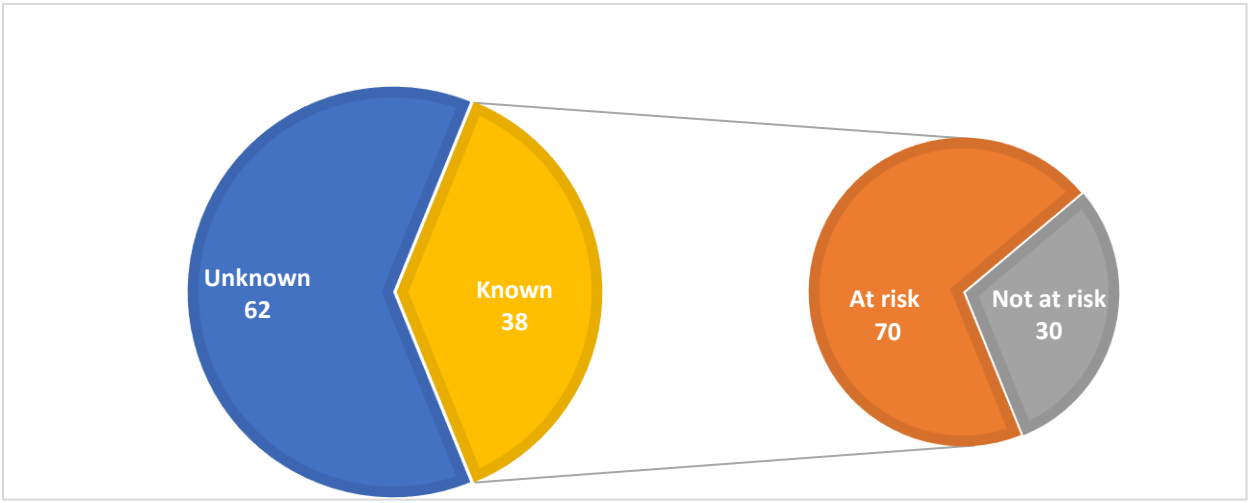
In situ, the risk status of 62 percent of local breeds remains unknown, while 70 percent of local breeds with a known status are at risk of extinction (Figure 29). Where the reporting status allows for presenting regional results, the proportion of endangered local breeds was as high as 82 percent in Northern America and Europe in 2023. It is therefore critical that countries expend greater efforts to collect the data needed to accurately infer the risk of extinction.

Figure 28. Proportion of local breeds, classified as being at risk, not at risk, or unknown risk of extinction (2023)



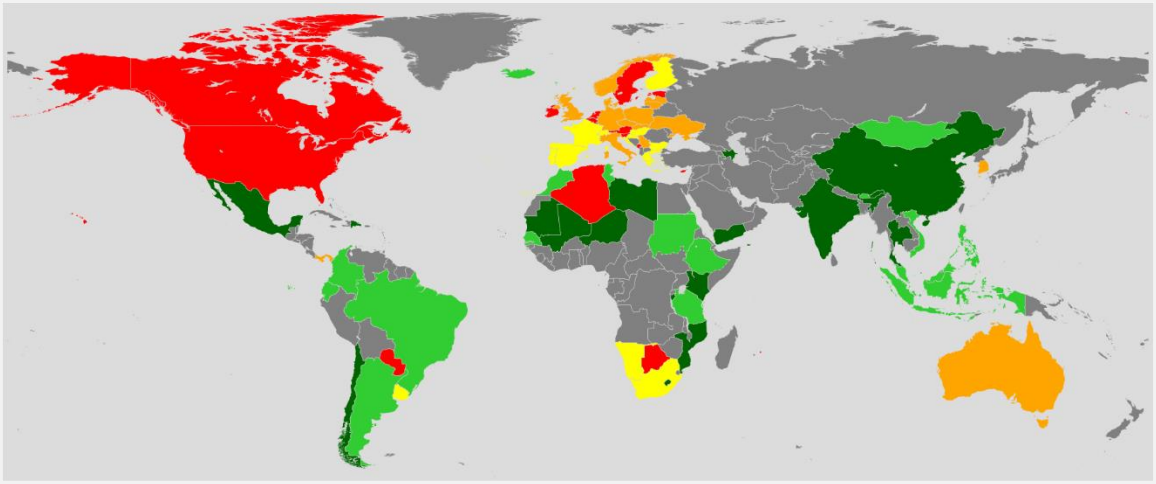
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig28

Figure 29. Proportion of local breeds classified as being at risk, not at risk, or with an unknown level of risk of extinction (2023)



Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

Figure 30. Current status of local breeds at risk of extinction, by quintile (2023)

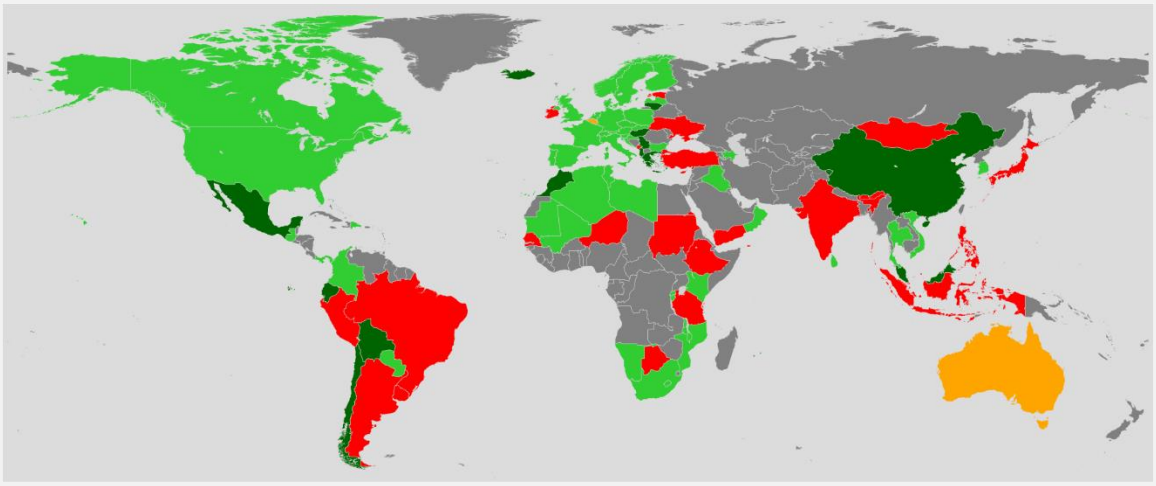


	First quintile
	Second quintile
	Third quintile
	Fourth quintile
	Fifth quintile
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 31. Trend towards reducing the proportion of local breeds at risk of extinction (2015–2023)



	Improvement
	Slight or no improvement
	Slight deterioration
	Deterioration
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

SDG INDICATOR 2.A.1

Agriculture orientation index for government expenditure

Target 2.a

Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries.

Global status assessment: above median of country values.
Global trend assessment: deterioration.

While government spending on agriculture has increased in recent years in nominal terms, the agriculture orientation index (AOI) declined from 0.50 in 2015 to 0.45 in 2021.

Government expenditures is one of the main sources of investment in the agricultural sector, fostering an improvement in sector efficiency, productivity and income growth by increasing physical or human capital and/or reducing intertemporal budget constraints.

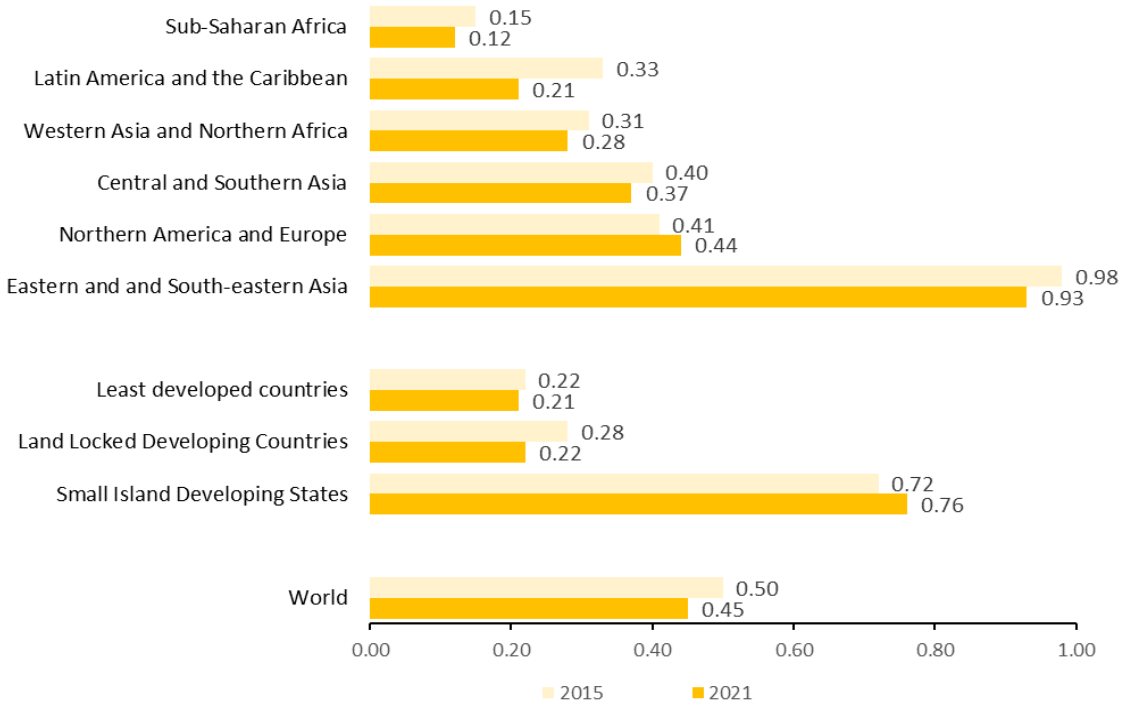
Between 2015 and 2021, nominal public spending on agriculture showed an increasing trend globally. It recorded an all-time high of USD 700 billion in 2021. In that year, the COVID-19 pandemic affected public spending in general, and spending on agriculture in particular. As a result, even though nominal public spending in agriculture increased over the period, agricultural spending as a share of total public expenditure decreased.

Meanwhile, the contribution of agriculture to global GDP slightly increased since 2015. Hence, when government expenditure on agriculture is measured relative to the agriculture sector's contribution to GDP in terms of the agriculture oriental index (AOI), it recorded a declining trend during the same period, from 0.50 in 2015 to 0.45 in 2021.

This declining trend in AOI occurred in all regions with the exception of Northern America and Europe, where the AOI recorded an increase from 0.41 in 2015 to 0.44 in 2021, driven mostly by the COVID-19 pandemic response and the unprecedented scale of fiscal stimulus packages implemented by the United States of America and European countries.

Among the other regions, Latin America and the Caribbean recorded the highest decline, from 0.33 in 2015 to 0.21 in 2021. Sub-Saharan Africa and Western Asia and Northern Africa also reported significant declines in their AOIs. Countries that belong to the least developed countries (LDCs) and landlocked developing countries (LLDCs) groupings are among the highest spenders in agriculture in terms of share to total government expenditures. In terms of AOI, both categories reported a decline from 0.22 in 2015 to 0.21 in 2021, and from 0.28 in 2015 to 0.22 in 2021 respectively, while Small Island Developing States (SIDS) recorded an improvement in AOI from 0.72 in 2015 to 0.76 in 2021.

Figure 32. Agriculture orientation index by SDG regions (2015 and 2021)



Note: The number of countries with data available may vary over time. Global and regional aggregates include imputed data.

Source: FAO. 2023. FAOSTAT. Government Expenditures on Agriculture. In: *FAO*. Rome. [Cited June 2023]. https://www.fao.org/faostat/en/#data/IG
https://doi.org/10.4060/cc7088en-fig32

Box 2. SDG Indicator 2.a.2. Total official flows (official development assistance plus other flows to the agriculture sector)[1]

Aid for agriculture is falling despite the growing global food crisis

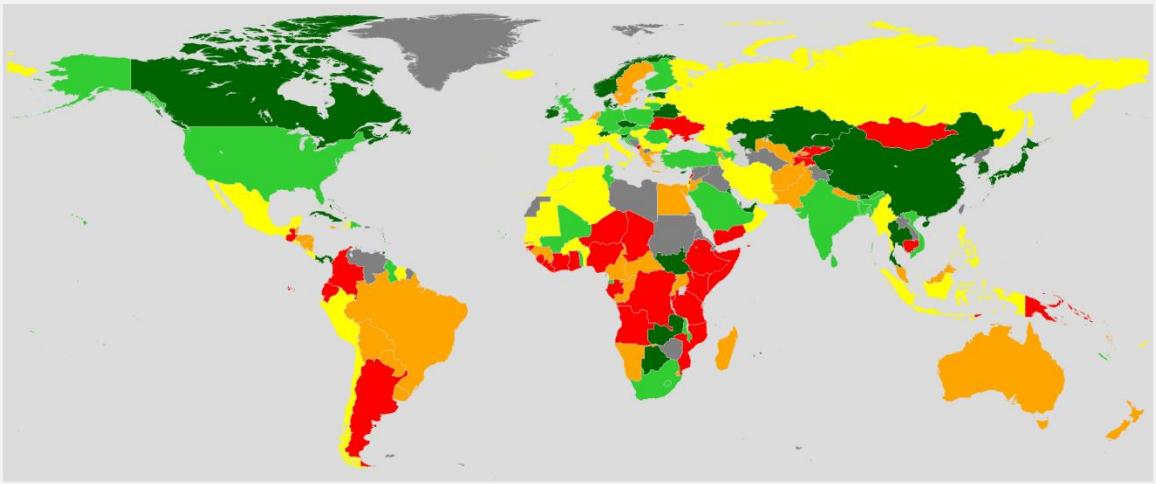
While SDG Indicator 2.a.1 focuses on domestic government investments in agriculture, SDG Indicator 2.a.2 complements it by looking at global disbursements from donors to the agriculture sector provided by official agencies, including governments. Between 2015 and 2021, the total aid to agriculture in developing countries increased by 14.6 percent, from USD 12.8 billion to USD 14.2 billion (in constant 2021 prices). Total aid to agriculture spiked in 2020, when it grew by almost 18 percent compared to the previous year, partly because of food security concerns during the pandemic. However, in 2021, it fell by 15 percent and in terms of volume, was close to its pre-pandemic levels.

_____

[1]SDG Indicator 2.a.2 is under the custodianship of the Organisation for Economic Co-operation and Development (OECD).

Source: United Nations. 2023. *The Sustainable Development Goals Report 2023: Special Edition.* New York. [Cited 8 June 2023]. https://unstats.un.org/sdgs/report/2023/

Figure 33. Current status of agriculture orientation index, by quintile (2021)

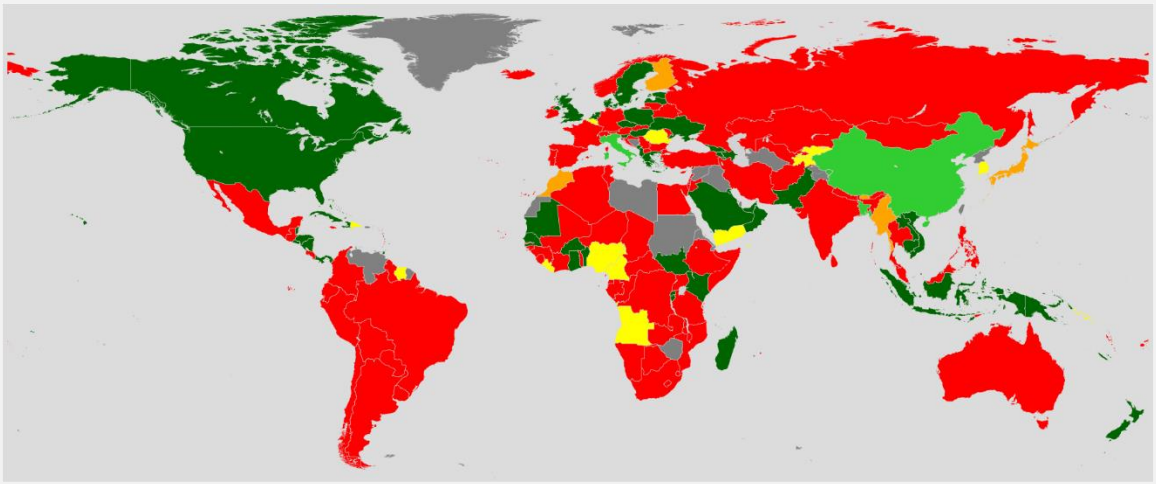


	Fifth quintile
	Fourth quintile
	Third quintile
	Second quintile
	First quintile
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 34. Trend in agriculture orientation index (2015–2021)



	Improvement
	Slight improvement
	No improvement
	Slight deterioration
	Deterioration
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

SDG INDICATOR 2.B.1

Agricultural export subsidies

Target 2.b

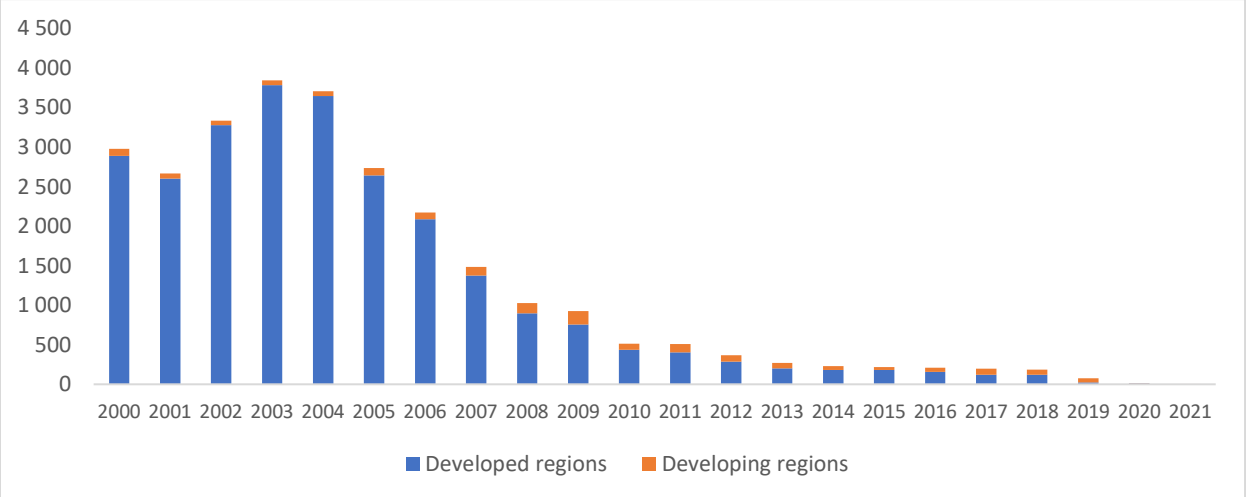
Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round.

Global status assessment: target already met.
Global trend assessment: target already met.

A key tool for redressing distortions in international markets and, by extension, global inequality, is to eliminate certain export subsidies. Agricultural export subsidies, in particular, have been shown to distort market prices. They encourage surplus production in exporting countries and lead to lower prices and less production in importing countries, with detrimental effects on consumers in the short and longer term.

While the process of eliminating agricultural export subsidies goes back several decades, with several countries taking steps in that direction, it was only in December 2015 that WTO Members adopted the Ministerial Decision on Export Competition, thus formally agreeing to eliminate all forms of agricultural export subsidies. Agricultural export subsidy outlays notified to the WTO show an overall downward trend since the year 2000 (see Figure 35). Total notified annual outlays fell from their peak of USD 3.84 billion in 2003 to a practically negligible level, USD 0.004 million in 2021.

Figure 35. Agricultural export subsidies (in millions of current USD) (2000–2021)



Source: United Nations. 2023. SDG Indicators Database. In: *UN Statistics Division*. New York. [Cited 8 June 2023]. https://unstats.un.org/sdgs/dataportal/database

Box 3. The need for a comprehensive measure of trade restrictions

Sustainable Development Goal Target 2.b refers to the correction and prevention of trade restrictions and distortions in world agricultural markets. A number of policy measures, which include but are not limited to export subsidies, can cause such distortions and restrictions. In fact, even SDG Target 2.b refers to the correction of these distortions, "*including* through the parallel elimination of all forms of agricultural export subsidies…".

For instance, the provision of market price support or direct payments to producers, among other measures of domestic support, could create bigger or smaller distortions in world agrifood markets. The same is the case for tariffs and export restrictions. The latter, in particular, is often used during crises and can result in increased volatility of global markets, as the experience of the 2007–2008 crisis has shown.

Nevertheless, the complexity of alternative indicators that could encapsulate measurement of all the support provided to the farmers in each country led to the decision to monitor progress towards the achievement of SDG Target 2.b only through Indicator 2.b.1, which measures the level of export subsidies at the global level.

It also needs to be noted that the World Trade Organization's Ministerial Conference, held in Nairobi in 2015, reached an historical agreement to eliminate all export subsidies in different timeframes for developed and developing countries. In any case, the use of export subsidies has been reduced significantly since the mid-2000s, as the result of the changes to the Common Agricultural Policy of the European Union (the biggest user of export subsidies) and the market conditions, in particular the level of agrifood prices.

In this context, while Indicator 2.b.1 shows positive progress with regard to the achievement of Target 2.b, in reality, different kinds of trade restrictions and distortions in global agricultural markets can persist. Therefore, the progress assessment of SDG Indicator 2.b.1 should not be considered as determining the overall achievement of SDG Target 2.b.

Source: Authors' own elaboration.

SDG INDICATOR 2.C.1

Indicator of food price anomalies assessment

Target 2.c

Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility.

Global status assessment: far from the target.
Global trend assessment: no improvement.

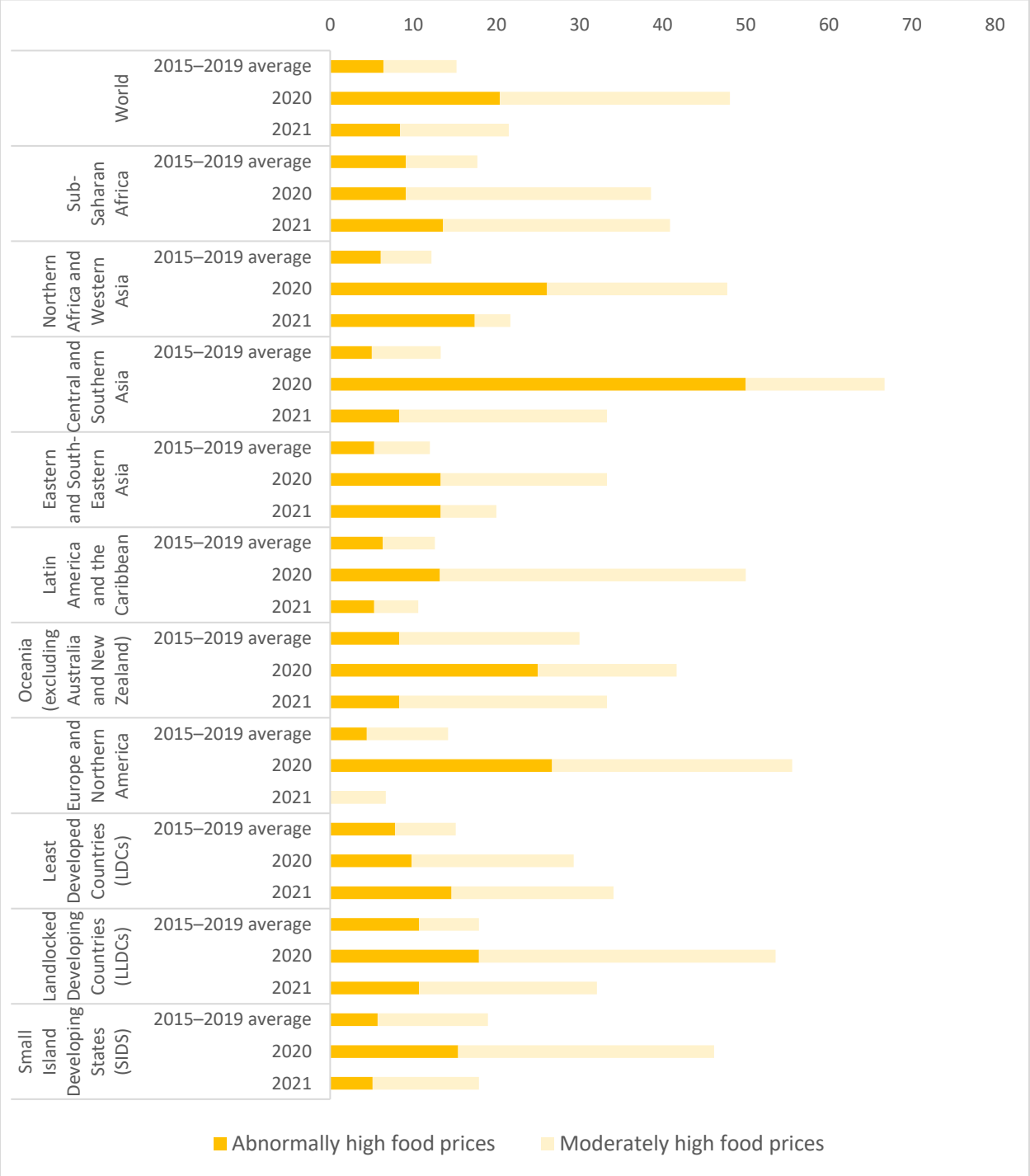
The proportion of countries with moderately to abnormally high food prices declined year-on-year in 2021, but remained above the 2015–2019 average.

Globally, the share of countries experiencing moderately to abnormally high food prices fell from 48.1 percent in 2020 to 21.5 percent in 2021. Despite this significant drop, the 2021 share was higher than the 2015–2019 average (15.2 percent), driven by upward price trends in international markets. The increase in international prices of food items, which started in mid-2020 following a rebound in demand with the easing of the COVID-19-related restrictive measures, continued in 2021. On the supply side, the upward pressure resulted from rising costs of inputs (energy and fertilizers), persisting disruptions to supply chains because of the COVID-19 pandemic, as well as poor weather and/or trade policy changes among key exporters. The strong demand for food and animal feed, together with sustained increases in freight costs during the first nine months of 2021, also supported higher prices.

At the subregional level, domestic factors intensified the upward pressure on food prices. Specifically, they include adverse weather conditions and worsening security conditions in central Sahelian countries; currency depreciations in some countries in West Africa, East Asia and South America; heightened political instability, severe macroeconomic difficulties and weather-induced production shortfalls in East Africa; and firm demand for food and concerns over the impact of poor weather on key crops in Europe and Northern America.

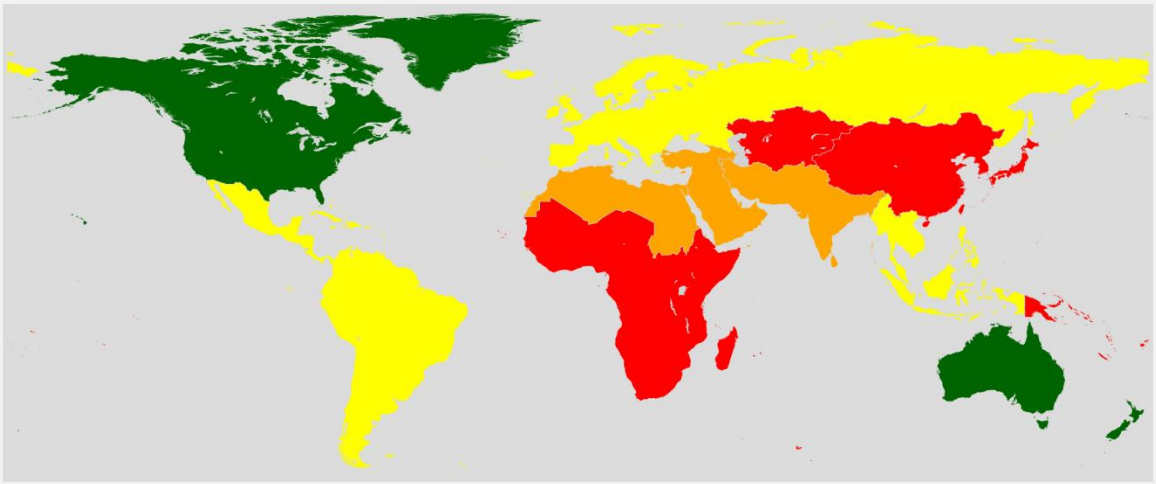
In 2021, the proportion of countries afflicted by high food prices decreased generally on a yearly basis, with the most significant year-on-year decline registered in Latin America and the Caribbean (10.6 percent) and in Europe and Northern America (6.7 percent). However, in sub-Saharan Africa and LDCs, the share of countries experiencing moderately to abnormally high food prices rose for the second consecutive year in 2021 and registered the highest levels (40.9 percent and 34.1 percent, respectively). In addition to the abovementioned drivers, higher expenditure on imported agricultural inputs and food items among these countries compounded the price increases. As one of the most import-dependent regions in the world for fertilizers, sub-Saharan Africa saw the highest year-on-year increase in its import bill for agricultural inputs in 2021, with a rise greater than 50 percent. Its food import bill also rose, by 20 percent year-on-year in 2021, compared to the world total of 18 percent, given the region's high dependency on imported food items.

Figure 36. Proportion of countries by region affected by moderately to abnormally high food prices, percentage (2015–2019 average, 2020 and 2021)



Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig36

Figure 37. Current status of indicator of food price anomalies (2021)

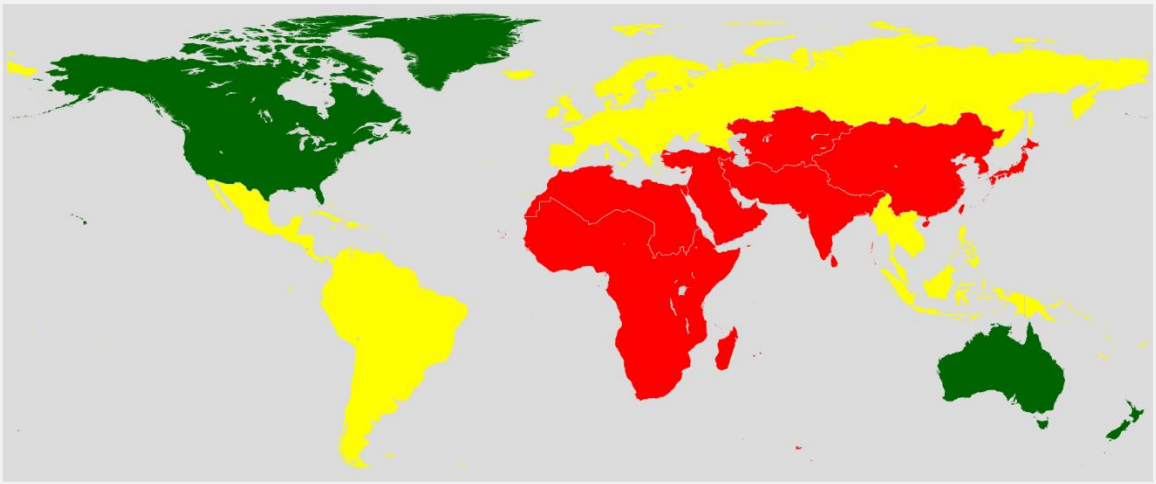


	Target already met
	Close to the target
	Moderate distance to the target
	Far from the target
	Very far from the target
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. Cited 8 June 2023. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 38. Trend in indicator of food price anomalies (2015–2021)



	Target already met
	On track
	On path but too slow
	No improvement
	Deterioration
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

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European Union, FAO (Food and Agriculture Organization of the United Nations), OECD (Organisation for Economic Co-operation and Development), UN-Habitat (United Nations Human Settlements Programme) and World Bank. 2021. *Applying the Degree of Urbanisation. A methodological manual to define cities, towns and rural areas for international comparisons. 2021 edition*. Luxembourg, Publications Office of the European Union. https://ec.europa.eu/eurostat/documents/3859598/15348338/KS-02-20-499-EN-N.pdf

FAO, IFAD (International Fund for Agricultural Development), UNICEF (United Nations Children's Fund), WFP (World Food Programme) and WHO (World Health Organization). 2023. *The State of Food Security and Nutrition in the World 2023. Urbanization, agrifood system transformation and healthy diets across the rural–urban continuum*. Rome. https://doi.org/10.4060/cc3017en

SUSTAINABLE DEVELOPMENT GOAL 5

Gender Equality

Achieve gender equality and empower all women and girls.

INDICATORS
5.a.1 5.a.2

Overview

The world is not on track to achieve gender equality by 2030. At the global level, none of the 18 indicators have "met or almost met" their targets and only one is "close to target". Securing women's land rights is crucial for achieving gender equality and the empowerment of women and girls, as it enhances their economic independence, access to resources, decision-making power and social status. Furthermore, women's secure access to, use and ownership of land improves the well-being of women themselves and of their families and communities. This is widely recognized with SDG Target 5.a, calling for reforms to give women equal rights to land and other forms of property, financial services and natural resources. Delivering on SDG 5 is intrinsically linked to poverty reduction, food security, combating the effects of climate change, and achieving peace, social justice and strong institutions.

Many countries have undertaken legal reforms to strengthen women's land rights, including changes in legislation to ensure equal rights to own, inherit and control land, as well as to recognize women's rights within customary and informal systems. Nonetheless, the level of protection of women's rights to land (not limited to agricultural land or agricultural populations) in the law is still absent, very low or low in 58 percent of the reporting countries, and high or very high only in 21 percent of these countries. Survey data also show that there is still a long way to go in securing women's land rights: in one-third of the countries, less than half of women and men have ownership or secure rights over agricultural land. The share of men having ownership is at least twice that of women in almost half of the countries.

SDG INDICATOR 5.A.1

(a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure.

Target 5.a

Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws.

Global status assessment: not possible due to insufficient data.
Global progress assessment: not possible due to insufficient data.

Gender equality in terms of agricultural land ownership is still far from achieved.

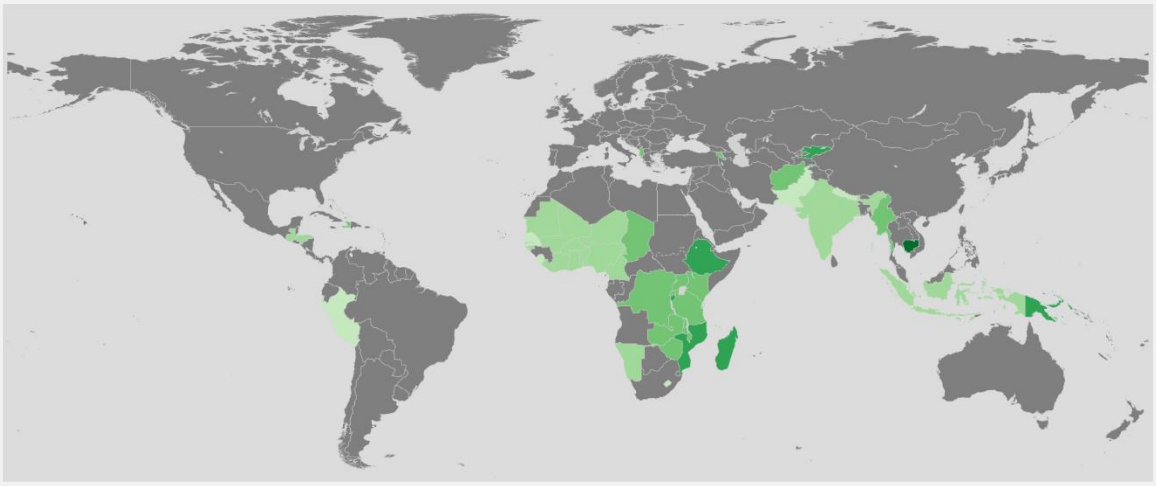
Women's role is fundamental throughout the agrifood systems, from production on the family plot, through processing and trading on local markets, to preparation and distribution within the household. In this context, agricultural land plays a key role in women's economic empowerment. Moreover, ownership of land and secure rights provide a range of benefits not only for women but also for society as a whole. While data at the global level are still limited, existing data from 46 countries for the 2009–2020 period show that many men and women involved in agricultural production lack ownership and/or secure tenure rights over agricultural land. In addition, significant gender disparities continue to exist among the agricultural population, with women being less likely than men to own land in most countries.

In one-third of the countries with available data, less than 50 percent of women and men have ownership or secure rights over agricultural land. In 40 of the 46 countries assessed, relatively fewer women own agricultural land compared to men, with the share of men with ownership at least twice that of women in almost half the countries.

In most countries, gender equality is yet to be achieved in ownership and secure rights over agricultural land. Indeed, women are in a clearly disadvantaged position compared to men, as their share among land owners is less than 50 percent in 35 countries. In addition, the share of men among landowners exceeds 70 percent in one-third of the countries. Even so, the share of women among landowners increased in 10 of 18 countries over the last decade, with marked improvements in several countries in sub-Saharan Africa and Southern Asia, demonstrating that although progress is slow, there is movement in the right direction.

Figure 39. Share of people in the total agricultural population with ownership or secure rights (latest year reported)

Total

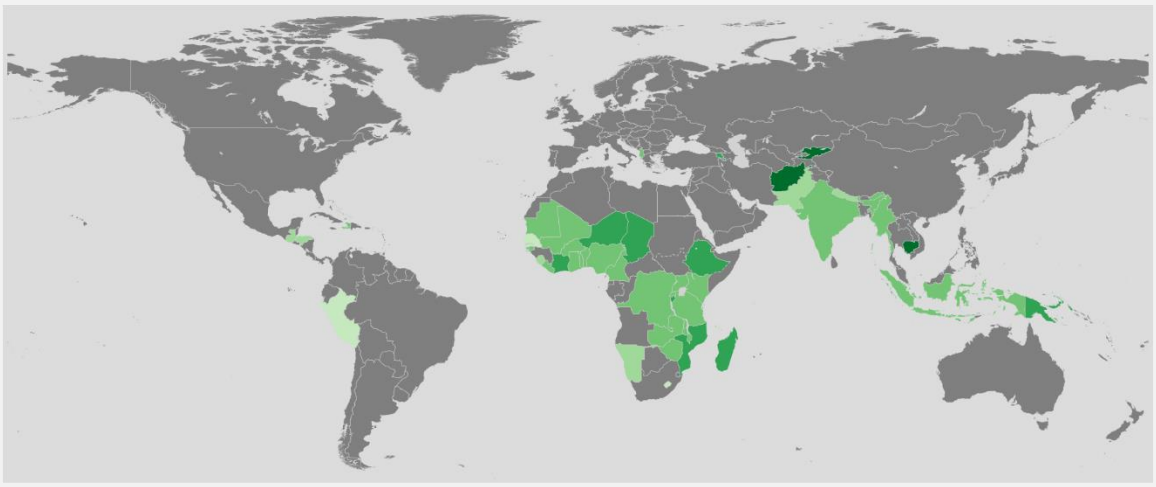


	[0–20]
	(20-40]
	(40–60]
	(60–80]
	>80
	No data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Men

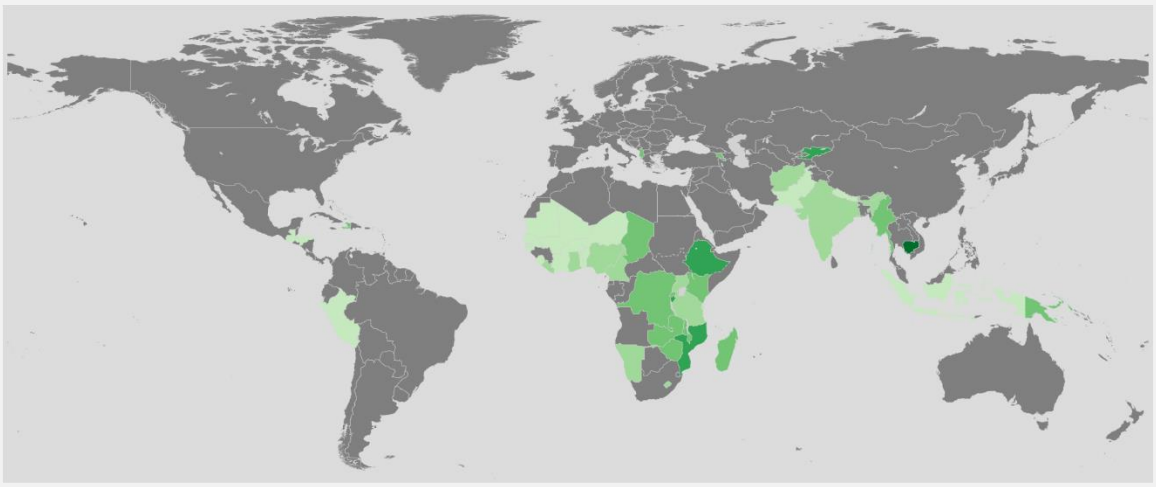


	[0–20]
	(20-40]
	(40–60]
	(60–80]
	>80
	No data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Women

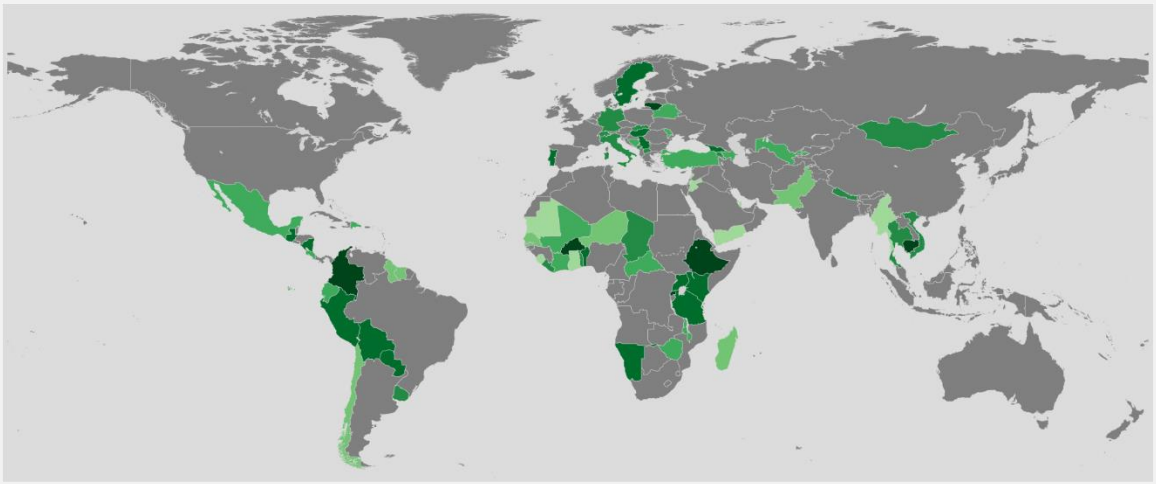


	[0–20]
	(20-40]
	(40–60]
	(60–80]
	>80
	No data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 40. Share of women among owners/ holders of secure tenure rights over agricultural land (latest year reported)



	[0–10]
	(10–20]
	(20–30]
	(30–40]
	(40–50]
	(50–60]
	No data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023)

SDG INDICATOR 5.A.2

Proportion of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control

Target 5.a

Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws.

Global status assessment: not possible due to absence of sufficient data.
Global progress assessment: not possible due to absence of sufficient data.

Data on protection of women's land rights in national laws reveal, at the same time, major gaps and good examples from all regions.

SDG Indicator 5.a.2 helps assess the extent to which national laws protect women's rights to land for different types of land and different groups of women. It is measured by national governments using a questionnaire comprising the following six "proxies", or criteria, for which definitions and thresholds are provided in the methodological guidelines and metadata (FAO, 2021 and United Nations, 2023):

A. Is the joint registration of land compulsory or encouraged through economic incentives?
B. Is spousal consent for land transactions required if the land is joint or common marital property?
C. Do women and girls have equal inheritance rights, at least in estate successions?
D. Have financial resources been allocated to increase women's land ownership on the ground?
E. If customary land tenure, customary law or customary institutions are recognized in the law, are women's land rights explicitly protected?
F. Do quotas exist for women's participation in land management and administration institutions?

As of May 2023, 71 countries have reported on SDG Indicator 5.a.2. The data show that 51 percent of those countries have at most a low score, whereas only 30 percent have a high or very high score. The methodology treats proxies D and F as present not only if financial resources or quotas are prescribed by law, but also if official national statistics show that at least 40 percent of individuals with ownership or secure rights to land are women. However, even when administrative or survey data suggest relatively small gender gaps in land ownership, it is crucial to understand the extent to which national legal frameworks protect women's land rights in order to promote gender-responsive policies, programmes and legal reforms in line with SDG Target 5.a. Focusing only on legal analysis, 58 percent of the reporting countries have no, very low or low levels of protection for women's land rights in the law, whereas only 21 percent have high or very high levels (see Table 2).

All regions have good examples of laws and policies that advance women's land rights, in particular in the areas of marital property and inheritance. Spousal consent requirements and equal inheritance rights were each found in 58 percent of the reporting countries.

Moreover, 51 percent of the 41 countries with laws recognizing customary law or customary land tenure explicitly protect women's land rights. Many of these countries, especially in sub-Saharan Africa, also provide for mandatory quotas to ensure that women are represented in land management and administration institutions. Quotas have also been adopted in other regions: 31 percent of reporting countries have gender-specific quotas in the law. More reporting countries score well (41 percent) when statistical data are considered (Figure 41).

Only 13 percent of the reporting countries allocate financial resources to increase women's de facto land ownership, suggesting this is a rarely used strategy. As in the case of quotas, the results differ depending on whether statistics are considered that show that at least 40 percent of individuals with ownership or secure rights to land are women (Figure 41).

Joint registration of land is an effective strategy to increase women's access to land. Nonetheless, only 34 percent of the 71 countries report having mandatory provisions or financial incentives to encourage joint registration.

Overall, additional efforts to improve women's land rights are needed – even in countries with high or very high levels of protection for women's land rights. This includes ensuring effective implementation of laws and policies, supported by temporary special measures as needed.

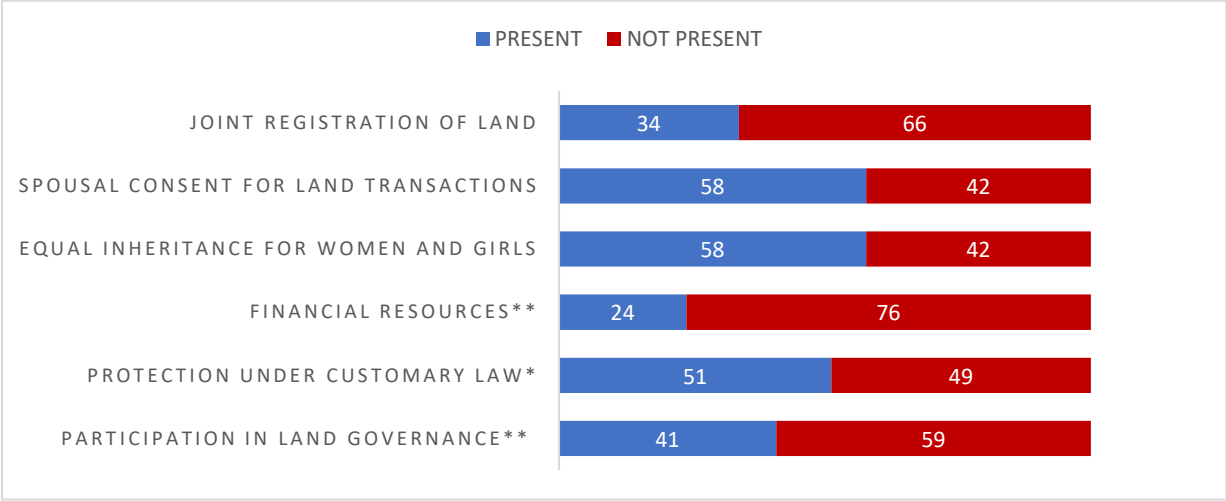
To realize SDG Target 5.a, it is fundamental to contextualize and promote the available statistical data on SDG Indicator 5.a.1 and the data on laws and policies collected for SDG Indicator 5.a.2 and related indicators for policy uptake. Whereas the available data provides a good starting point, both complementary data and the engagement of key stakeholders (including women themselves) will be necessary for more effective policy action and technical support.

Table 2. Level of protection for women's land rights in the law in 71 assessed countries (based on data available in May 2023)

Number of proxies present	Score*	Level of protection in the law	Number of countries with legal provisions and/or statistics**	N of countries only on a legal basis
0	1	None	12	12
1	2	Very low	8	9
2	3	Low	16	20
3	4	Medium	14	15
4	5	High	16	13
5 or 6	6	Very high	5	2

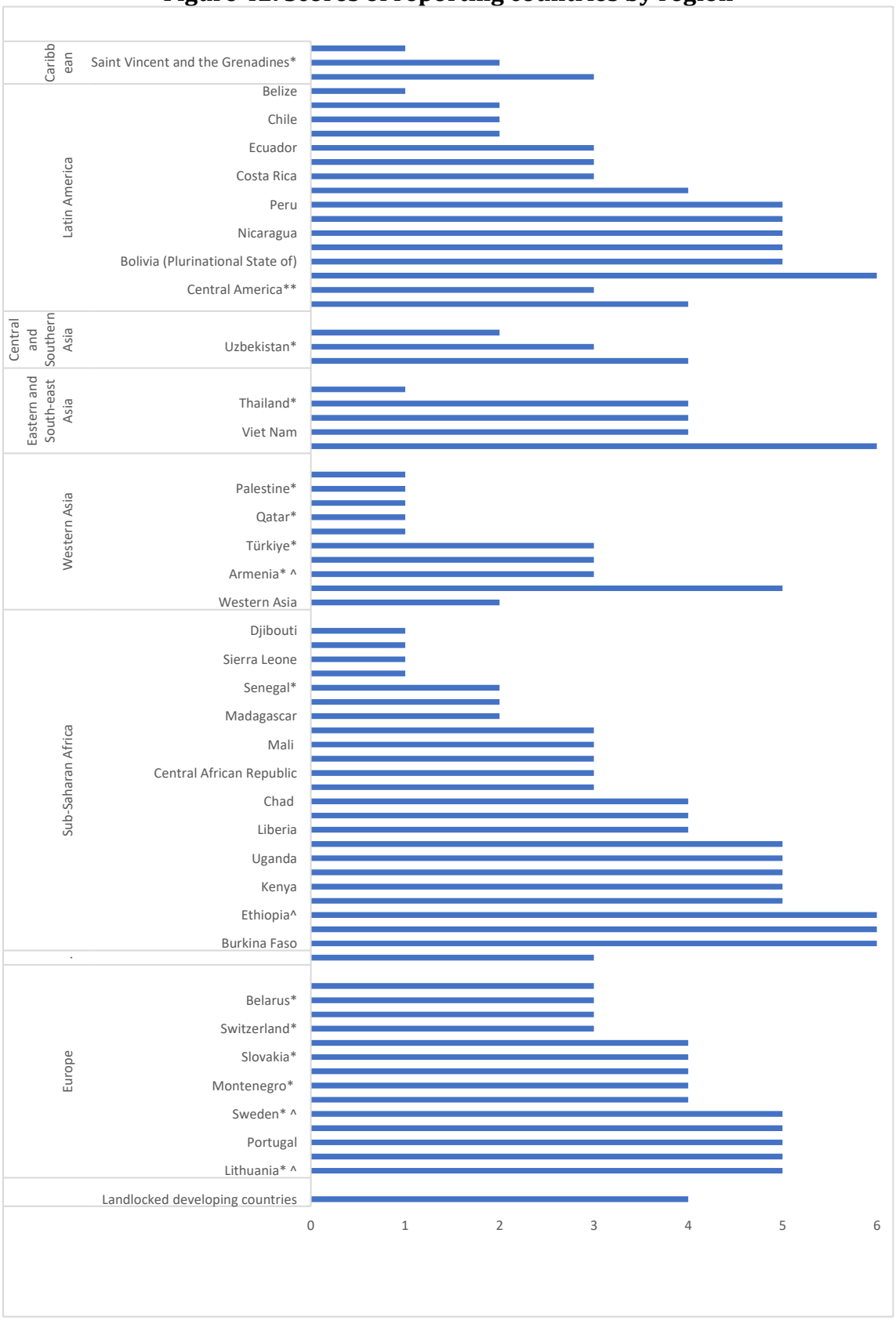
Notes:
* As per metadata updated in March 2023.
**Although the methodology helps to assess the level of protection in the law, two out of six proxies (D and/or F) can be marked as present if statistics show that at least 40 percent of those owning or with secure rights to land are women. This is the case in eight countries.
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

Figure 41. Share of countries in which each proxy is present (2023)



Notes:
*Proxy E is calculated for the sample of 41 countries that recognize customary law in their legal framework.
**Where proxies D and F are considered present, this can be based on either legal provisions or statistics if at least 40 percent of the persons with ownership or secure land rights are women. This is the case for 8 out of 71 countries.
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

Figure 42. Scores of reporting countries by region



Notes: *Countries for which protection under customary law (Proxy E) is not applicable. ^Countries for which one or two of the six proxies are considered present because statistics show that at least 40 percent of people with ownership or secure land rights are women. Averages for the regions/subregions/groupings are marked in grey and are only reported when at least 50 percent of the countries in the particular group have officially reported on the indicator.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig42

Box 4. Women in agrifood systems – snapshot of the 2023 special FAO report (FAO, 2023)

Agrifood systems are a major employer of women. Globally, 36 percent of working women and 38 percent of working men work in agrifood systems as of 2019. Agrifood systems are a more important source of livelihood for women than for men in many countries. In sub-Saharan Africa, 66 percent of women's employment is in agrifood systems, compared with 60 percent of men's. In South Asia, women overwhelmingly work in agrifood systems (71 percent of women, versus 47 percent of men), although fewer women than men are in the labour force. However, women tend to account for a greater share of agricultural employment at lower levels of economic development, because of severely limited opportunities for off-farm work for women.

Women who work in agricultural production tend to do so under highly unfavourable conditions. They tend to be concentrated in the poorest countries, where alternative livelihoods are not available, and they maintain the intensity of their work in conditions of climate-induced weather shocks and in situations of conflict. Women are less likely to participate as entrepreneurs and independent farmers and are engaged in the production of less lucrative crops. Often, women are unpaid family workers or casual workers in agriculture. Social norms may also constrain women from producing crops and participating in activities dominated by men. The gender gap in land productivity between female- and male-managed farms of the same size is 24 percent. On average, women earn 18.4 percent less than men in wage employment in agriculture; this means that women receive 82 cents for every United States dollar (USD) earned by men.

Women's access to assets and resources key to agrifood systems – such as land, inputs, services, finance and digital technology – continues to lag behind men's. Gaps directly related to agricultural production remain substantial, but gender gaps in education, finance and information and communications technology, which are particularly important for developing off-farm businesses and employment opportunities in agrifood systems, are closing more quickly. Nevertheless, sustained, quality access to assets and resources remains a challenge.

Progress has been slow in closing gaps in women's access to irrigation and in ownership of livestock. On average, men own more livestock than do women and are more likely than women to own large livestock such as cattle. These gaps have changed little in the last decade, although gaps in ownership of smaller species such as sheep and poultry tend to be narrower.

Women in agriculture still have significantly less access than men to inputs, including improved seeds, fertilizers and mechanized equipment. On a positive note, the gender gap in access to mobile internet in low- and middle-income countries fell from 25 percent to 16 percent between 2017 and 2021, and the gender gap in access to bank accounts narrowed from 9 to 6 percentage points. Women are as likely as men to adopt new technologies when the necessary enabling factors are put in place and they have equal access to complementary resources.

Box 4. **(Continued)**

Achieving gender equality in agriculture and agrifood systems at scale could bring tremendous benefits. Using data on gender gaps in farm productivity and wage gaps in agrifood-system employment, FAO conservatively estimates that closing the gender gaps in farm productivity and the wage gap in agrifood systems alone would increase global gross domestic product by at least 1 percent (or nearly USD 1 trillion). This would reduce global food insecurity by at least 2 percentage points, reducing the number of food-insecure people by 45 million.

Source: FAO. 2023. *The status of women in agrifood systems.* Rome.
https://doi.org/10.4060/cc5343en

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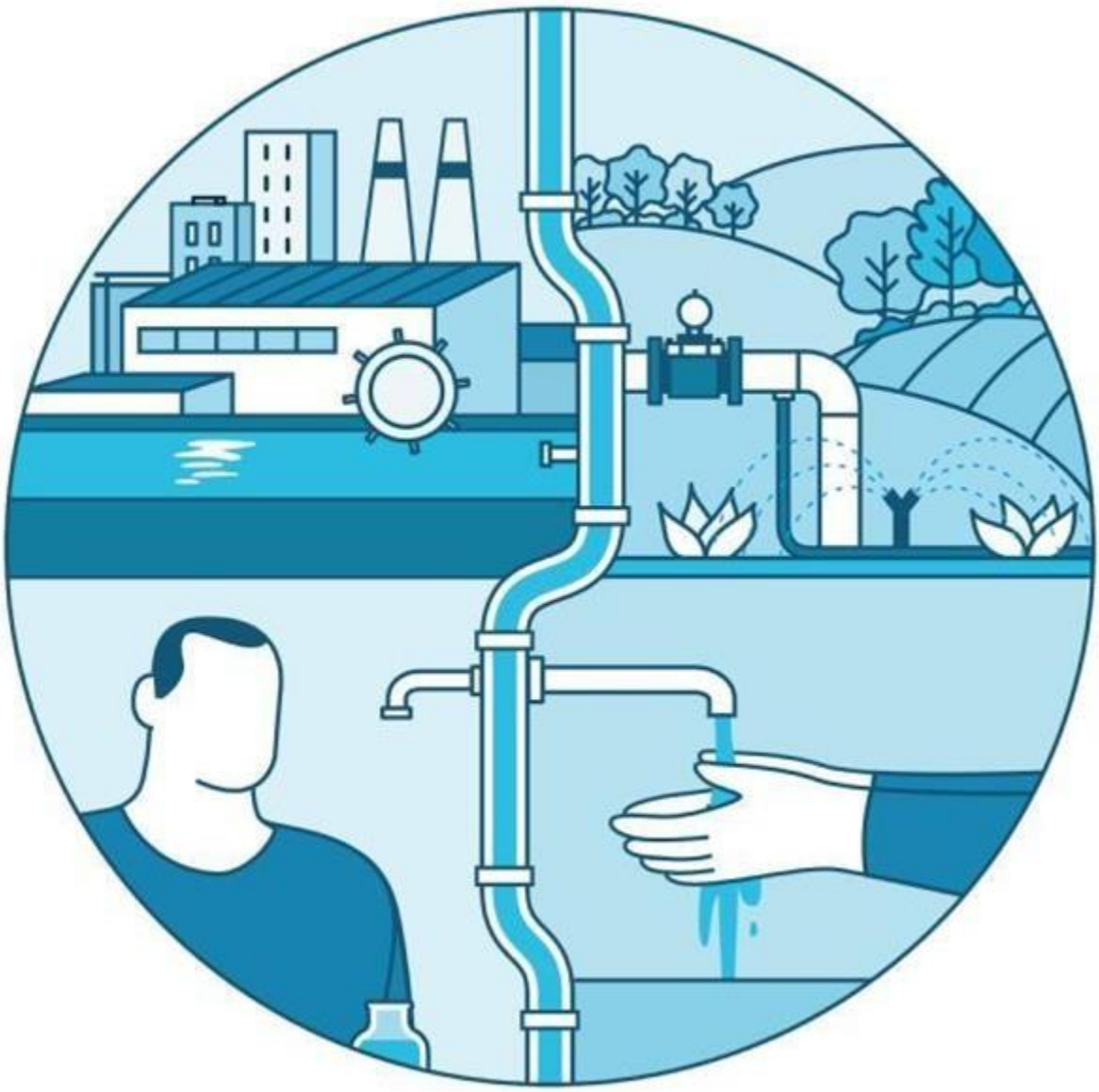
United Nations. 2023. SDG Indicators. Metadata repository. In: *United Nations Statistics Division, Sustainable Development Goals.* New York. [Cited 20 March 2023]. https://unstats.un.org/sdgs/metadata/



SUSTAINABLE DEVELOPMENT GOAL 6

Clean Water and Sanitation

Ensure availability and sustainable management of water and sanitation for all.

INDICATORS
6.4.1 6.4.2

Overview

Billions of people still lack access to safe water, sanitation and hygiene. While there has been improvement in the provision of these basic services, much remains to be done to achieve SDG 6. Water scarcity is a growing problem in many parts of the world, and conflicts and climate change are exacerbating the issue. In addition, countries are facing growing challenges linked to degraded water-related ecosystems, water scarcity caused by climate change, underinvestment in water and sanitation, and insufficient cooperation on transboundary waters. Achieving universal coverage by 2030 will require a sixfold increase in current global rates of progress on drinking water, a fivefold increase for sanitation, and an eightfold increase for hygiene.

At the global level, water stress levels remain at a safe level of 18.2 percent in 2020. However, this masks substantial regional variations whereby a number of regions are facing high or even critical levels of water stress, which in some cases have even exacerbated over recent years. Meanwhile, water use efficiency rose from USD 17.4/m^3 in 2015 to USD 18.9/m^3 worldwide in 2020.

SDG INDICATOR 6.4.1

Change in water-use efficiency over time

Target 6.4

By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

Global status assessment: at median of country values.
Global trend assessment: improvement.

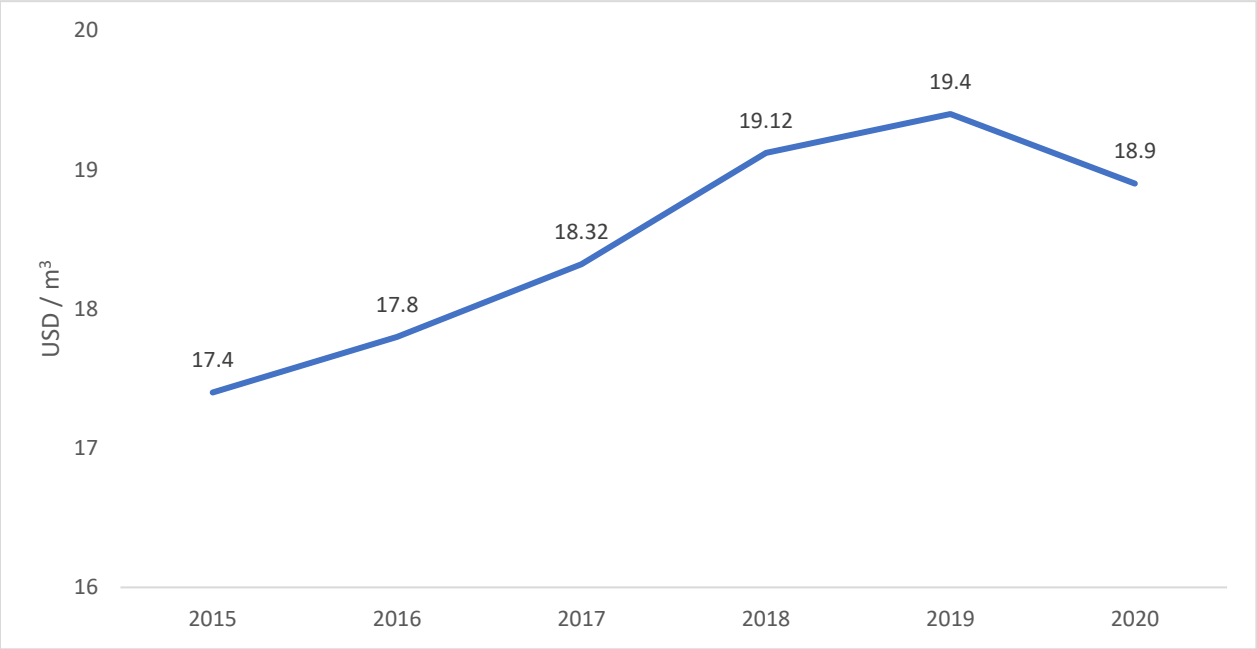
After a steady and gradual increase from 2015 to 2019, water-use efficiency experienced a decline from 2019 to 2020 worldwide.

Water use efficiency (WUE) rose from USD 17.4/m^3 in 2015 to USD 18.9/m^3 in 2020 worldwide, which represents an efficiency increase of 9 percent (Figure 43). However, this is a slight decline from the previous year, when WUE peaked at 19.4 percent. In 2020, WUE estimates ranged from below USD 3/m^3 in economies that depend largely on agriculture to over USD 50/m^3 in highly industrialized, service-based economies. This suggests that a country's economic structure has a direct link to its overall water use efficiency levels. Around 57 percent of countries presented a water use efficiency equivalent to USD 20/m^3 or less in 2020, compared to 58 percent in 2015 (Figure 44). However, global values hide regional differences (Figure 45). Central and Southern Asia, Eastern Asia and South-eastern Asia and Oceania show the highest growth rates in WUE from 2015 to 2020, while Latin America and the Caribbean shows a decrease.

All economic sectors have seen an increase in their water use efficiency since 2015. In 2020, the industrial sector has a WUE equivalent to USD 32.08/m^3, the services sector USD 104.65/m^3 and the agriculture sector USD 0.59/m^3. In relative terms, water use efficiency in agriculture has had the greatest increase (20 percent) from 2015, compared to the industrial sector (13 percent) and service sector (0.3 percent) (Table 3).

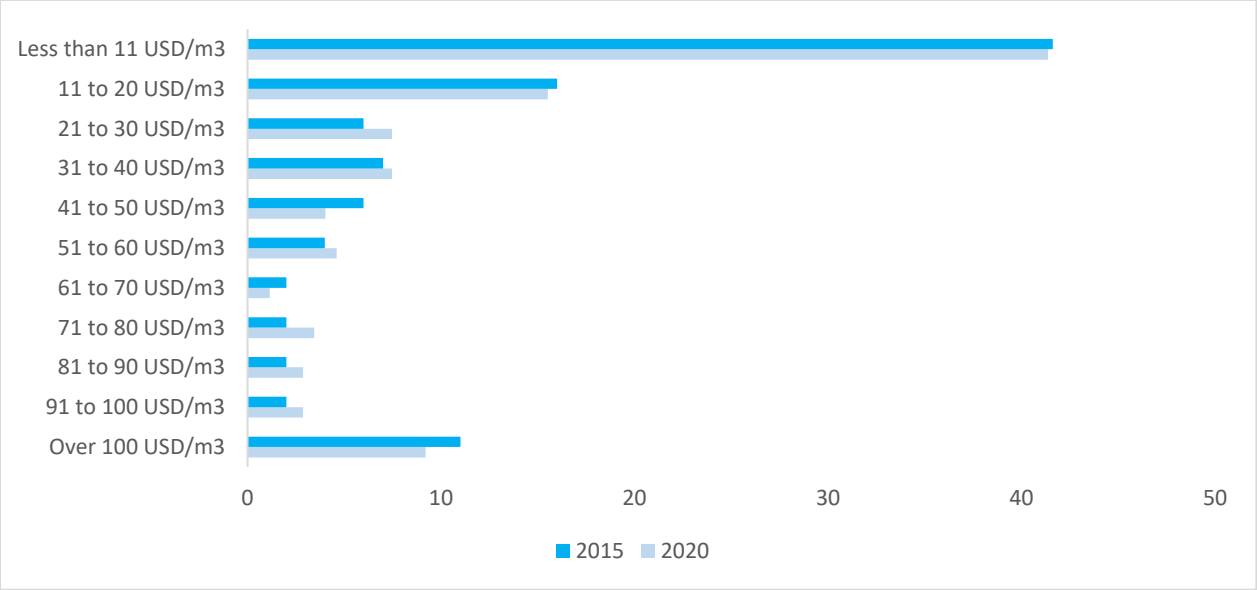
Increasing agricultural water productivity (quantity or value of output in relation to the quantity of water beneficially consumed) through more efficient irrigation systems and better agricultural management practices is key for improving water use efficiency, particularly in agriculture-reliant countries. Other important strategies to increase the overall water efficiency include reduction in water losses, such as by tackling leakages in municipal distribution networks and the optimization of industrial and energy cooling processes.

Figure 43. Global water use efficiency, USD/m³ (2015–2020)



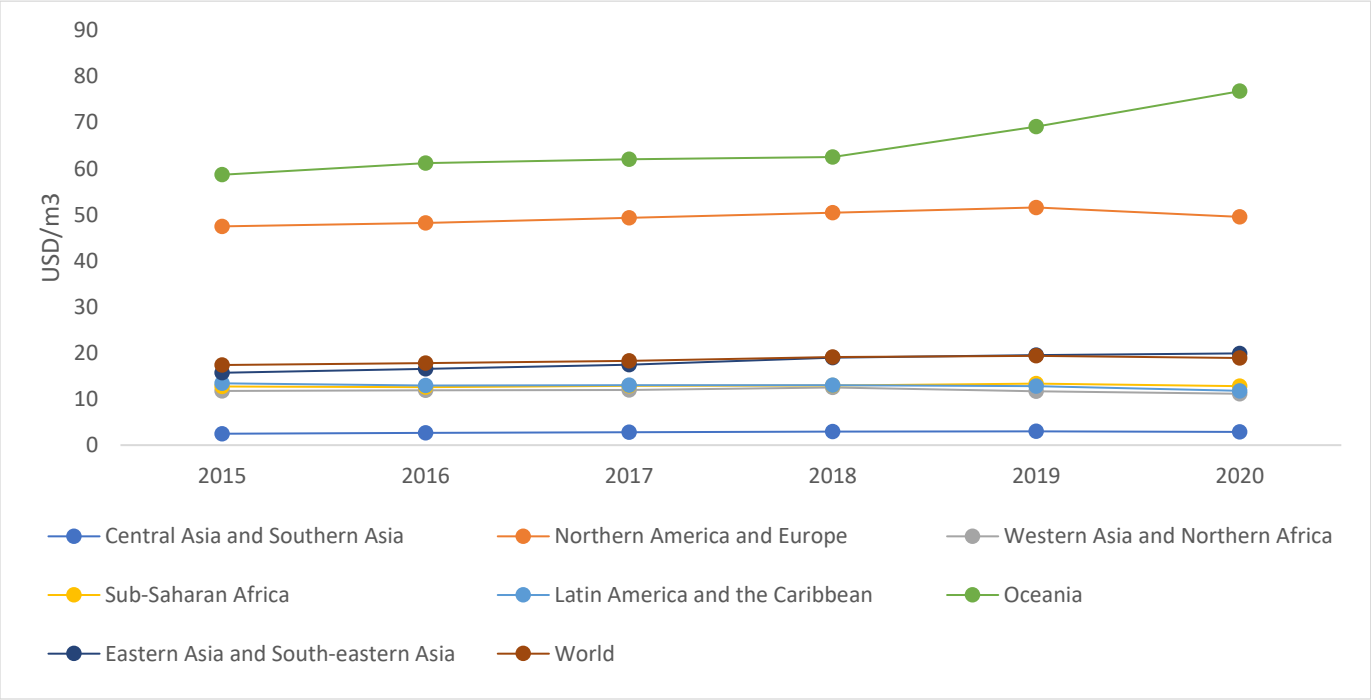
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

Figure 44. Share of countries by classes of water use efficiency (2015 and 2020)



Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

Figure 45. Change in water use efficiency by region, by USD/m3 (2015–2020)



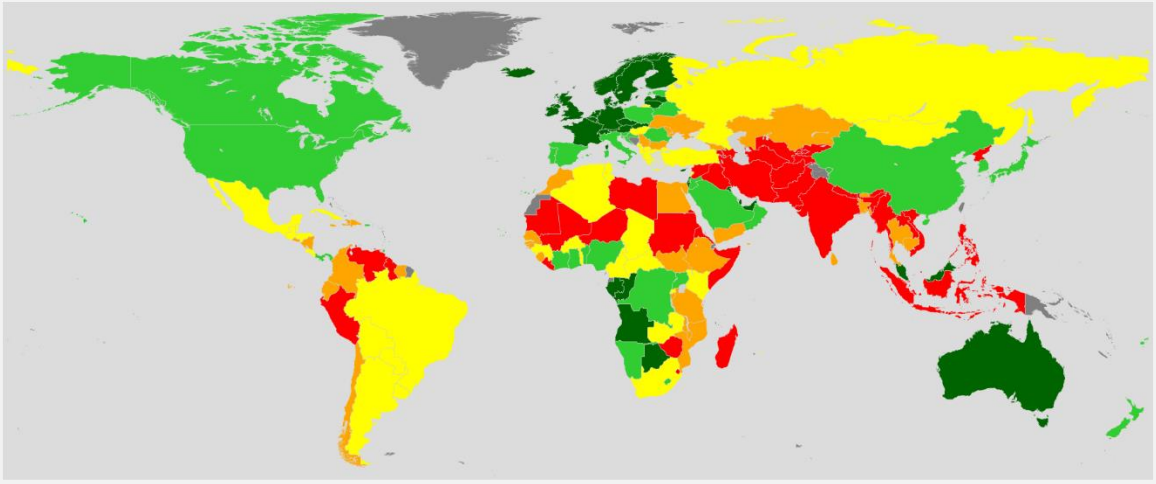
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/CC7088EN-fig45

Table 3. Water use efficiency across sectors (2015 and 2020)

Sectoral water use efficiency (WUE)	2015	2020	2015–2020 change (percent)
WUE agriculture (USD/m³)	0.49	0.59	20.4
WUE industry (USD/m³)	28.37	32.08	13.1
WUE services (USD/m³)	104.3	104.65	0.3

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

Figure 46. Current status of water use efficiency, by quintiles (2020)

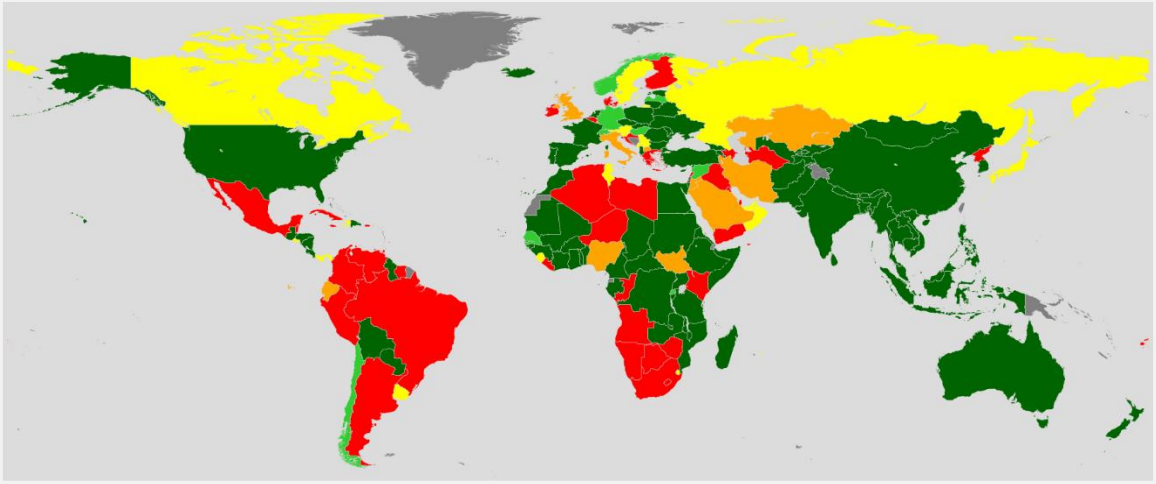


	Fifth quintile
	Fourth quintile
	Third quintile
	Second quintile
	First quintile
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 47. Trend in water use efficiency (2015–2020)



	Improvement
	Slight improvement
	No improvement
	Slight deterioration
	Deterioration
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

SDG INDICATOR 6.4.2

Level of water stress: freshwater withdrawal as a proportion of available freshwater resources

Target 6.4

By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

Global progress assessment: an assessment at the global level was not performed because the value of the global indicator is below 25 percent.

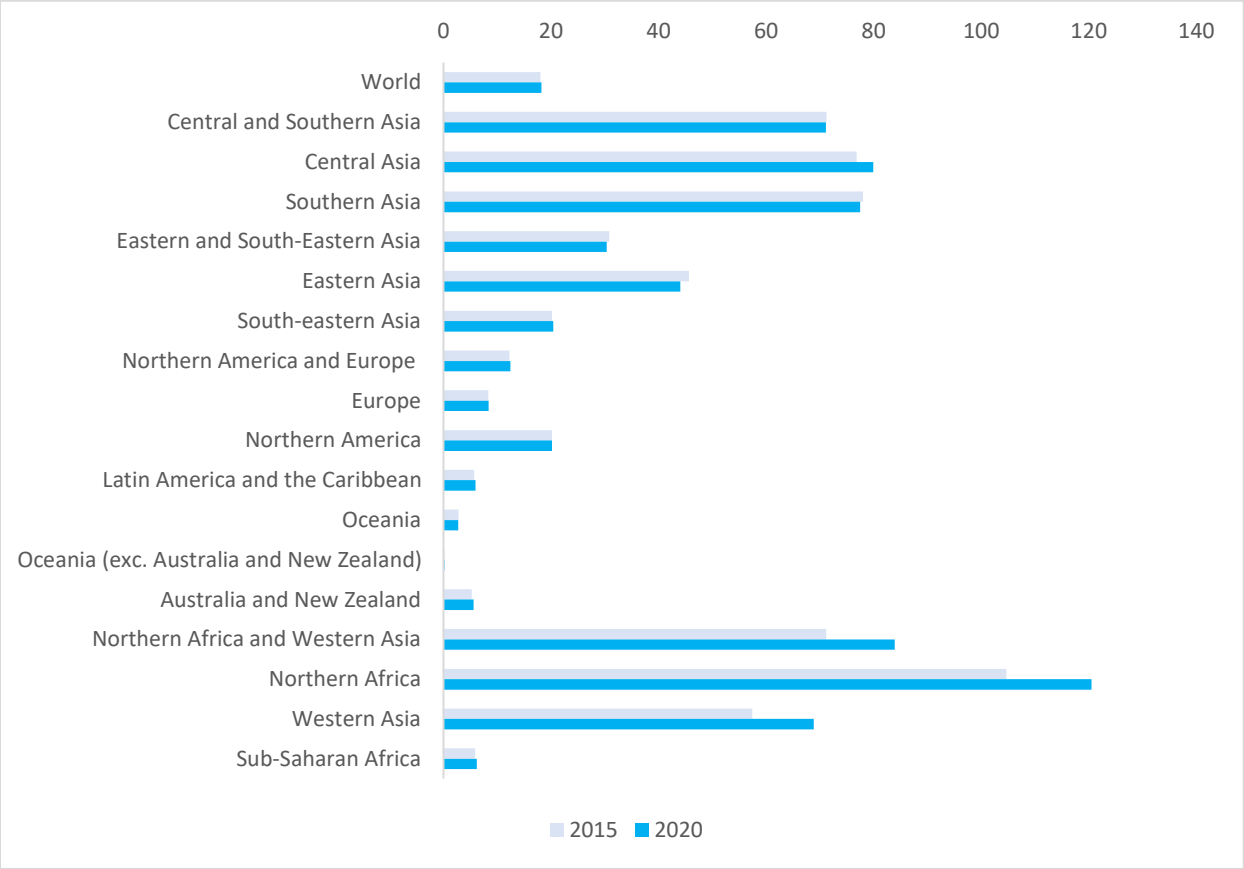
Water stress globally, despite a slight increase by 0.2 percentage points since 2015, remained at a safe level of 18.2 percent in 2020, but with large regional variations.

The measure of water stress accounts for all freshwater withdrawals relative to total freshwater resources, including environmental flow requirements for ecosystem services. A withdrawal rate above 75 percent of renewable water resources represents high water stress, and more than 100 percent is critical. High water stress can have devastating consequences for the environment and hinder or even reverse economic and social development.

At the global level, water stress remains at a safe level of 18.2 percent in 2020. However, this masks substantial regional variations, and represents a 1.2 percent rise since 2015. In 2020, water stress levels ranged from high in Southern Asia and Central Asia to critical in Northern Africa. The situation in Northern Africa is particularly concerning, because not only is it the only subregion registering a critical level of water stress over 100 percent (meaning that more freshwater is being withdrawn that renewable freshwater resources are available); it also registered an alarming increase by 15 percentage points in water stress levels between 2015 to 2020.

Globally, agriculture is the dominant sector in terms of freshwater withdrawals, representing 72 percent of the total freshwater water withdrawals in 2020, followed by the industrial sector at 16 percent and the service sector at 12 percent of total freshwater withdrawals. The respective shares of the three sectors' contribution to water stress have remained fairly stable since 2015 (see Table 4).

Figure 48. Level of water stress by geographical region and subregion (2015 and 2020)



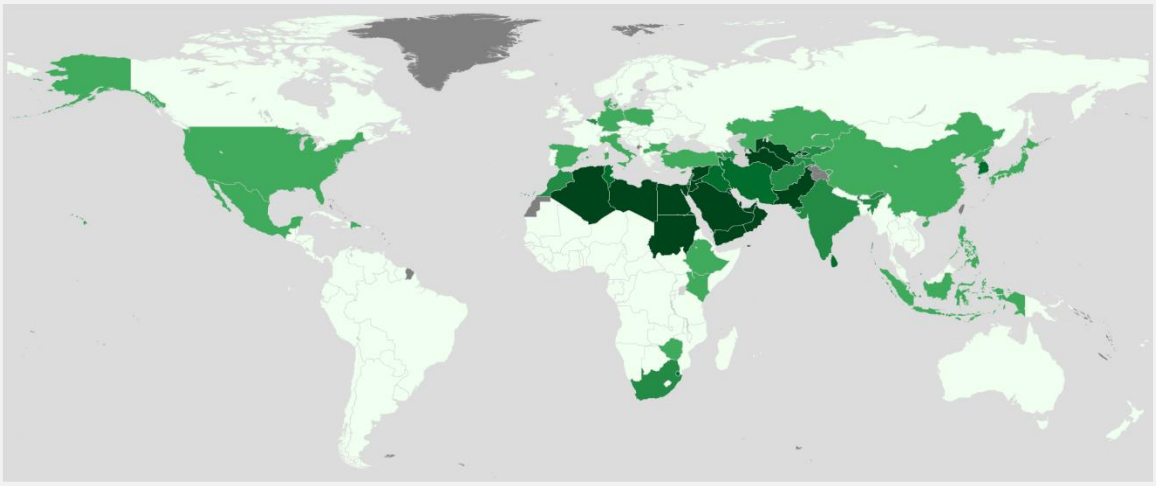
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig48

Table 4. Share of water stress level by sector

Contribution of the different sectors to water stress level	2015	2020
Agriculture	13.0	13.1
Industry	2.9	2.8
Services	2.1	2.4
Overall economy	18.0	18.2

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

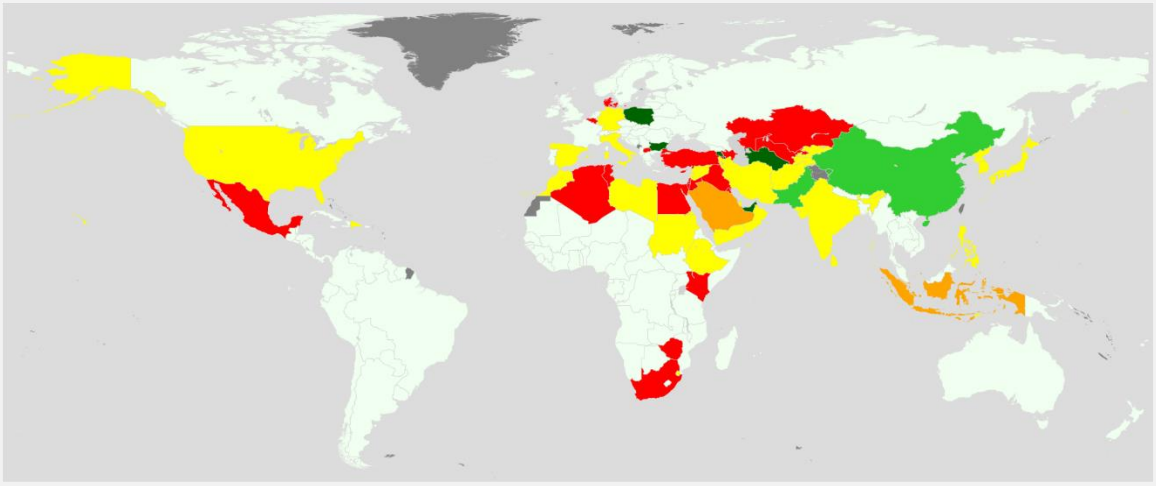
Figure 49. Current status of global water stress level (2020)



	Critical >100%
	High (75%–100%]
	Medium (50%–75%]
	Low (25%–50%]
	No stress [0%–25%]
	Insufficient data

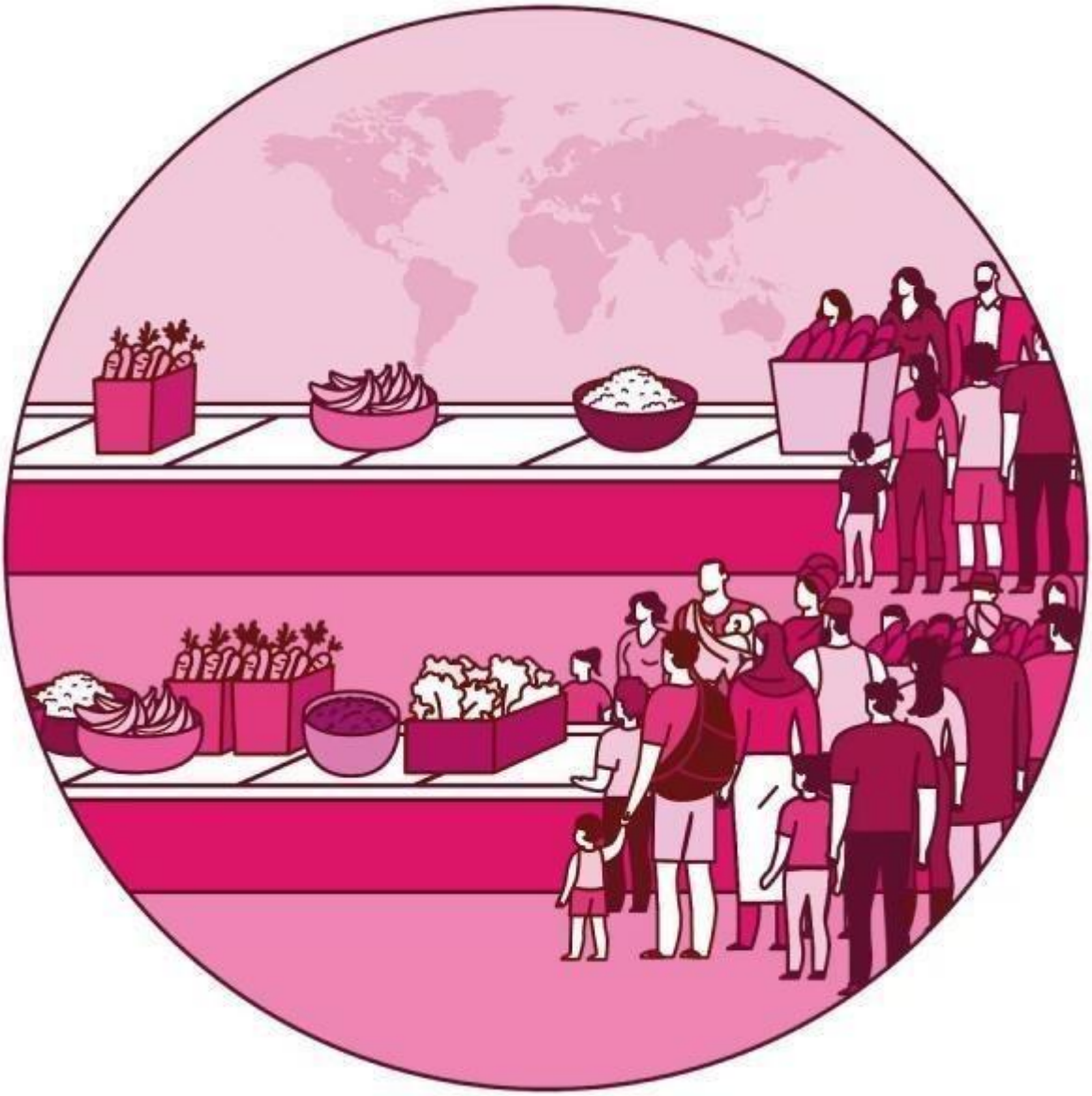
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

Figure 50. Trend of countries' progress towards ensuring sustainable withdrawals of freshwater (2015–2020)



	Improvement
	Slight improvement
	No improvement
	Slight deterioration
	Deterioration
	SDG 6.4.2 <= 25%
	Insufficient data

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).



SUSTAINABLE DEVELOPMENT GOAL 10

Reduced inequalities

Reduce inequality within and among countries.

INDICATOR
10.a.1

Overview

The COVID-19 pandemic has reversed the recent decades-long trend of narrowing global income inequality. Uneven recoveries in different regions of the world threaten to further worsen global inequality.

Those with relatively low incomes are at risk of falling further behind. The pandemic has also intensified structural and systemic discrimination. Emerging markets and developing economies are experiencing slow recoveries, widening disparities in income between countries. Thus, achieving SDG 10 requires concerted and accelerated efforts to address the root causes of both within- and between-country inequality.

SDG INDICATOR 10.A.1

Proportion of tariff lines applied to imports from least developed countries and developing countries with zero-tariff[6]

Target 10.a

Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements.

Duty-free access for developing countries' and least developed countries' exports to international markets has improved in recent years, particularly for agricultural products. However, the overall growth of exports from LDCs remains worryingly low.

SDG Target 10.a of Agenda 2030 seeks to improve market access conditions for exports from developing countries and LDCs by giving them special and differential treatment in accordance with WTO agreements. SDG Indicator 10.a.1 shows the extent to which special and differential treatment is applied in import tariffs, and is calculated as the proportion of zero-duty tariff lines for imports from LDCs and developing countries. The indicator effectively shows to what extent developing countries and LDCs have free access to developed countries' markets.

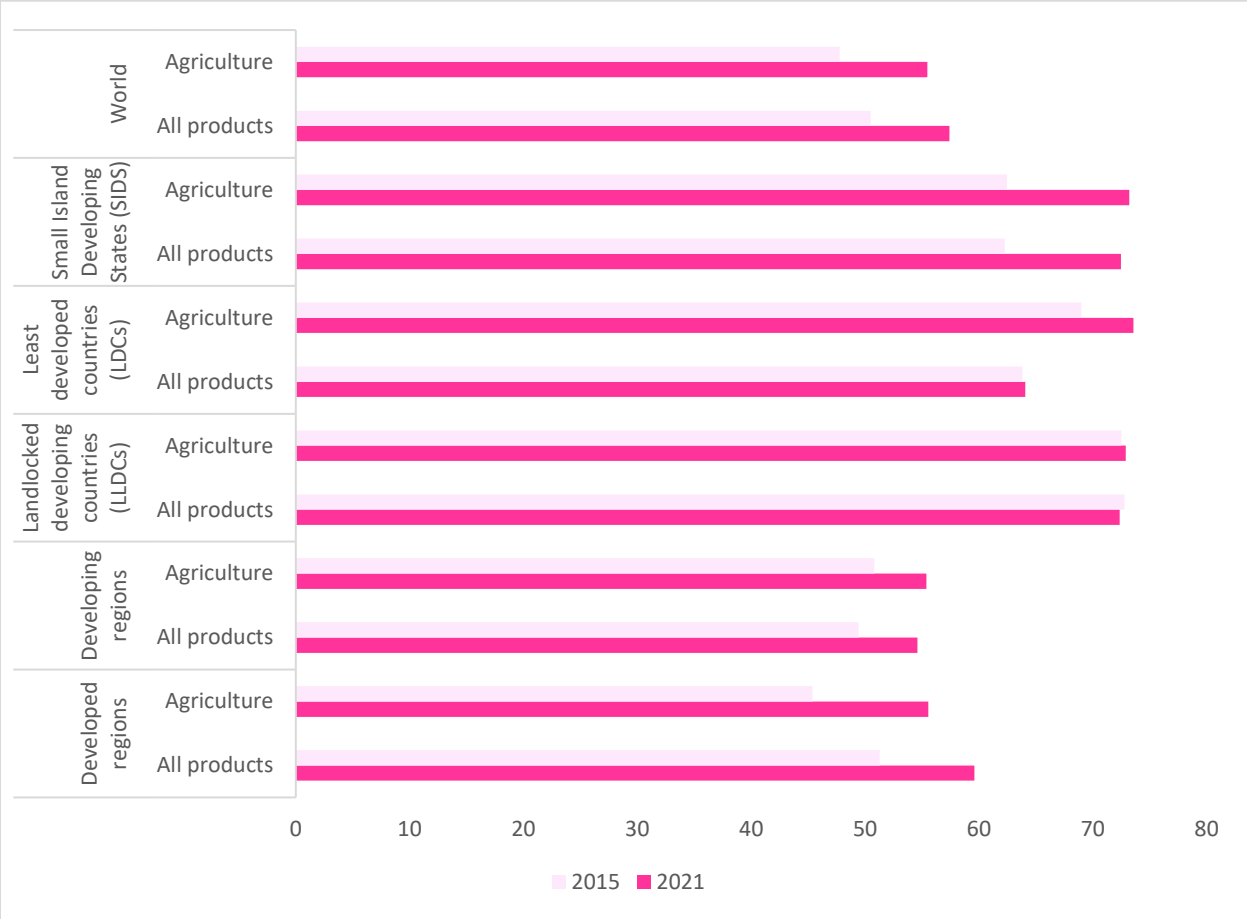
As shown in Figure 51, developing countries and LDCs enjoy either full or almost full duty-free and quota-free access to most international markets. Between 2015 and 2021, the proportion of products exported by LDCs that could enter international markets free of duty increased from 63.8 percent to 64.1 percent. However, this increase was more significant for specifically agricultural products, from 69 percent in 2015 to 73.6 percent in 2021.

Meanwhile, this share increased for developing countries (from 49.4 to 54.6 percent) and SIDS (from 62.3 to 72.5 percent). Over the same period, the proportion of agricultural products exported by developing countries and SIDS that could enter international markets duty-free increased from 50.8 percent to 55.4 percent and from 62.5 percent to 73.2 percent, respectively.

Thus, as Figure 51 also indicates, the preferential treatment afforded to agricultural exports from developing countries, LDCs, LLDCs and SIDS was slightly less favourable than that afforded to other types of exports. Nonetheless, and despite the improvement since 2015, the principle of special and differential treatment – a key engine to reduce global inequality – is far from fully implemented. In addition, it should be noted that progress in export expansion from LDCs is slow. Although exports from LDCs have grown considerably since 2000, their share in overall world trade has remained virtually stagnant at 1 percent over the past decade. Meanwhile, the share of LDCs in the world's population has risen from 10.7 percent in 2000 to over 13.6 percent in 2020.

[6] SDG Indicator 10.a.1 is under the custodianship of the International Trade Centre, United Nations Conference on Trade and Development and the World Trade Organization.

Figure 51. Proportion of exports from regions with different levels of development with zero-tariff treatment in international markets (2015 and 2021)



Source: United Nations. 2023. SDG Indicators Database. In: *UN Statistics Division*. New York. [Cited 8 June 2023]. https://unstats.un.org/sdgs/dataportal/database.

Responsible Consumption and Production

Ensure sustainable consumption and production patterns.

INDICATOR
12.3.1.a

Overview

The COVID-19 pandemic has had significant impacts on consumption and production patterns, with disruptions to global supply chains and changes in consumer behaviour. Responsible consumption and production must be an integral part of the recovery from the pandemic. Reducing food losses and waste – which have adverse social, economic and environmental impacts – is crucial to achieving this goal. Countries across all regions and income groups register high levels of food losses and waste, necessitating action across the value chain, from harvesting to consumption. Global food loss estimates remain steady between 2016 and 2021, with substantial variations across regions and subregions. In 2019, 13.3 percent of all food produced was lost at preconsumption and retail stages, and 17 percent of the food available to consumers went into the waste bins of households, retailers, restaurants and other food services outlets, according to the United Nations Environment Programme (UNEP, 2021).

SDG INDICATOR 12.3.1.A

Food loss index

Target 12.3

By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.

Global status assessment: not possible due to absence of numerical yardstick in the target.
Global trend assessment: no improvement.

Estimates put global food loss in 2021 at 13.2 percent, similar to previous years.

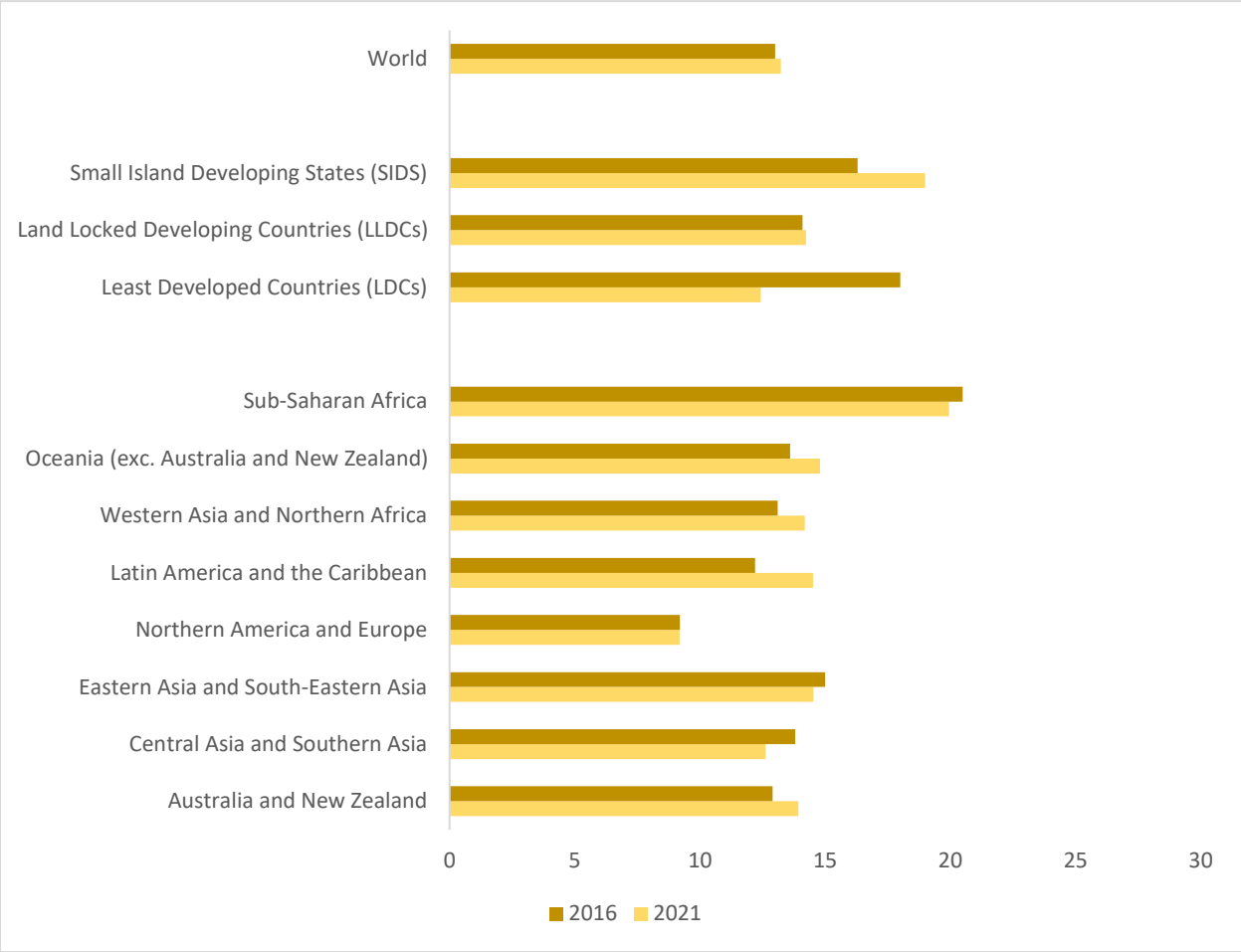
The percentage of food lost globally after harvest on farm, transport, storage, wholesale and processing levels, is estimated at 13.2 percent in 2021. This is similar to previous estimates of 13.3 percent and 13 percent in 2020 and 2016 respectively, when reporting first began. These percentages correspond, in terms of Food Loss Index (FLI), to 98.7 in 2016, 101.2 in 2020 and 98.27 in 2021. These changes should be interpreted as oscillations since the regions have experienced only slight variations since 2020, with no clear or significant trends having emerged.

At the regional level, sub-Saharan Africa has the highest losses at 19.95 percent, followed by Small Island Developing States (SIDS) and least developed countries (LDCs) with 18.99 percent and 16.1 percent respectively, attributable to structural inadequacies in countries. Latin America and the Caribbean also registered high food loss figures, at 14.52 percent, up by 2.3 percent since 2020. This is attributed to an increase in loss levels in the Caribbean subregion as a result of increased data availability, and not necessarily a change in losses experienced.

The lowest losses occurred in Oceania (excluding Australia and New Zealand) and Northern America and Europe, at 12.43 percent and 9.19 percent respectively.

All regions have experienced slight variations (increase and decrease) from the estimates reported in 2020. However, these were not significant enough to be used to report on trends. The highest variations were a decrease of 2.5 percent for LDCs, a decrease of 2.4 percent in Oceania (excluding Australia and New Zealand) and an increase of 2.3 percent for Latin America and the Caribbean.

Figure 52. Food loss percentages by region (2016 and 2021)



Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig52

At the subregional level, West Africa has the highest loss percentage of 23.57 percent. This is consistent with 2020 estimates of 24.8 percent, given that sub-Saharan Africa has one of the highest structural inadequacies. The subregion with the second highest recorded losses is the Caribbean, at 22.55 percent, which is a 4 percent increase from the 2020 estimates that had put the losses at 18.9 percent. However, these changes do not necessarily reflect not a deteriorating situation, but rather an increase in the data available for the region.

Higher-income countries usually experience lesser food losses, with the lowest losses recorded in Europe: 7.25 percent, a slight increase for the region from the 2020 estimate of 6.01 percent. Taking a more disaggregated view, Eastern Europe has the least food losses at 5.01 percent, followed by Western and Southern Europe at 7.84 percent and 8.08 percent respectively. Northern Europe stands out with a higher recorded loss rate at 11.7 percent. Changes in food loss estimates at regional and

subregional level between 2020 and 2021 can be attributed to model trends and oscillations that are not necessarily an indication of structural changes in the regions, thus making it impossible to report on the trend.

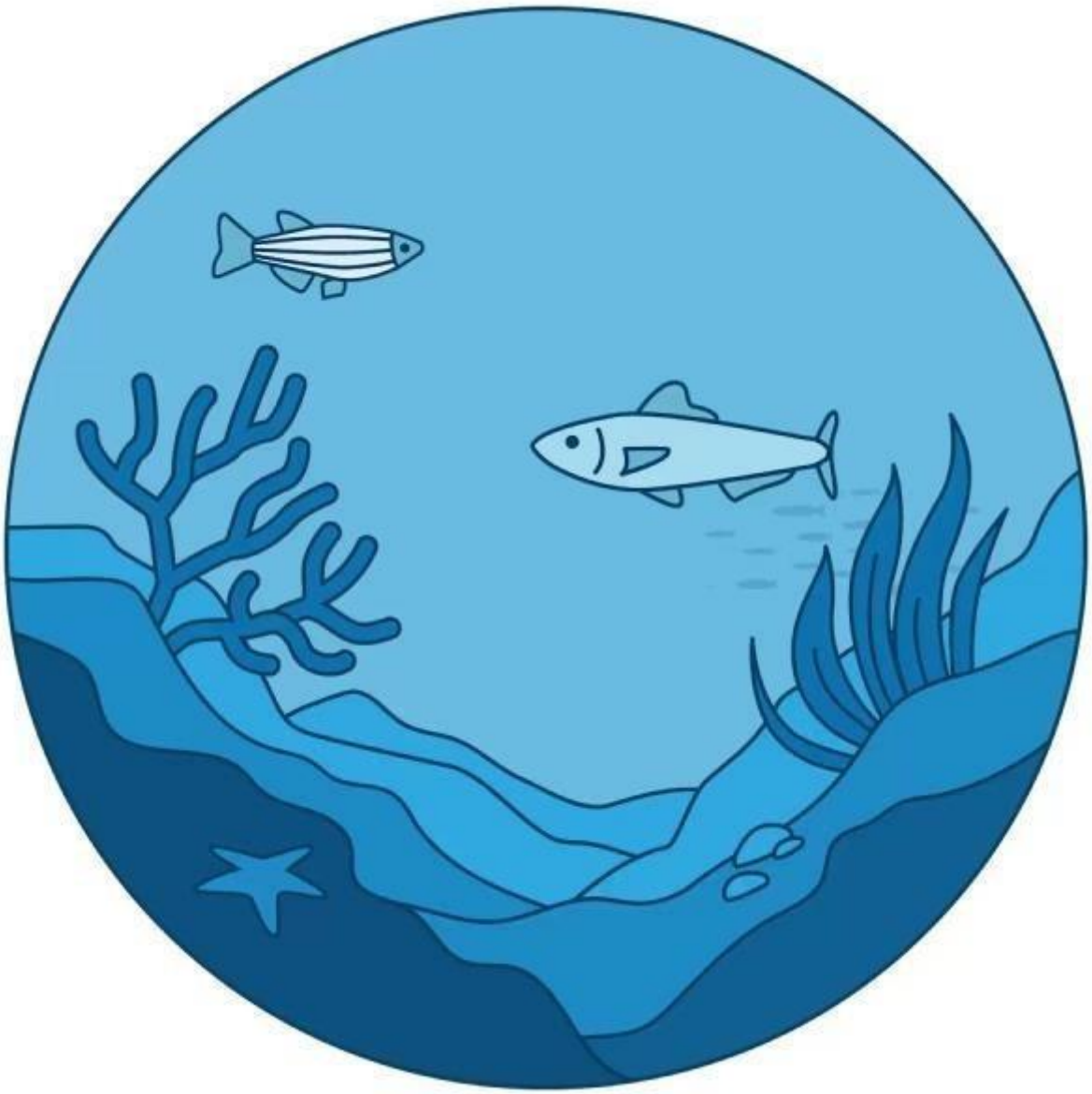
While data at country level continue to be scarce, the high loss estimates at global, regional and subregional level are indicative of the magnitude of the problem and, therefore, of the need for countries to start formulating policies specifically geared towards reducing food losses.

Figure 53. Food Loss Index, percentages by subregion (2021)

Note: Food Loss Index refers to the Food Loss Percentage compared to the base year 2015.
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal.* Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

Reference:

UNEP (United Nations Environment Programme). 2021. *UNEP Food Waste Index report 2021*. Nairobi.



SUSTAINABLE DEVELOPMENT GOAL 14

Life below Water

Conserve and sustainably use the oceans, seas and marine resources.

INDICATORS
14.4.1 14.6.1 14.7.1 14.b.1

Overview

The ocean, the world's largest ecosystem, continues to be endangered by rising acidification, eutrophication, declining fish stocks and mounting plastic pollution. These challenges were further exacerbated by the COVID-19 pandemic, which led to a steady increase in the quantity of single-use plastic entering the world's waters as medical waste. While there has been limited progress in expanding marine protected areas and combating illegal, unreported and unregulated fishing over the years, more concerted efforts and acceleration are urgently needed. Ensuring the biodiversity and health of the ocean is also paramount to countering climate change impacts, as the ocean absorbs one-quarter of CO_2 emissions every year.

As a result of the initial lockdowns during the COVID-19 pandemic, most countries experienced a 40 percent to 80 percent decline in fish production, with small-scale fishing communities being most affected. The impact of this change on the proportion of fish stocks within biologically sustainable levels cannot yet be assessed, given that the latest assessment available (2019) pre-dates the COVID pandemic. The pandemic also led to a dramatic reduction in tourism, causing substantial income losses for coastal and island communities.

There is an urgent need to step up the protection of marine environments and boost investments in ocean science. In addition, more efforts are urgently needed to support small-scale fishery communities and ensure the sustainable management of oceans. Indeed, despite efforts to conserve the oceans, the sustainability of global fishery resources continues to decline, albeit at a reduced rate compared to past years. While many countries have made progress towards combating illegal, unreported and unregulated fishing, a more concerted effort is needed. In addition, as a result of the COVID-19 pandemic, increased support for small-scale fishers is crucial to allow them to continue earning a livelihood and to feed local communities.

SDG INDICATOR 14.4.1

Proportion of fish stocks within biologically sustainable levels

Target 14.4

By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.

Global status assessment: very far from the target.
Global trend assessment: deterioration.

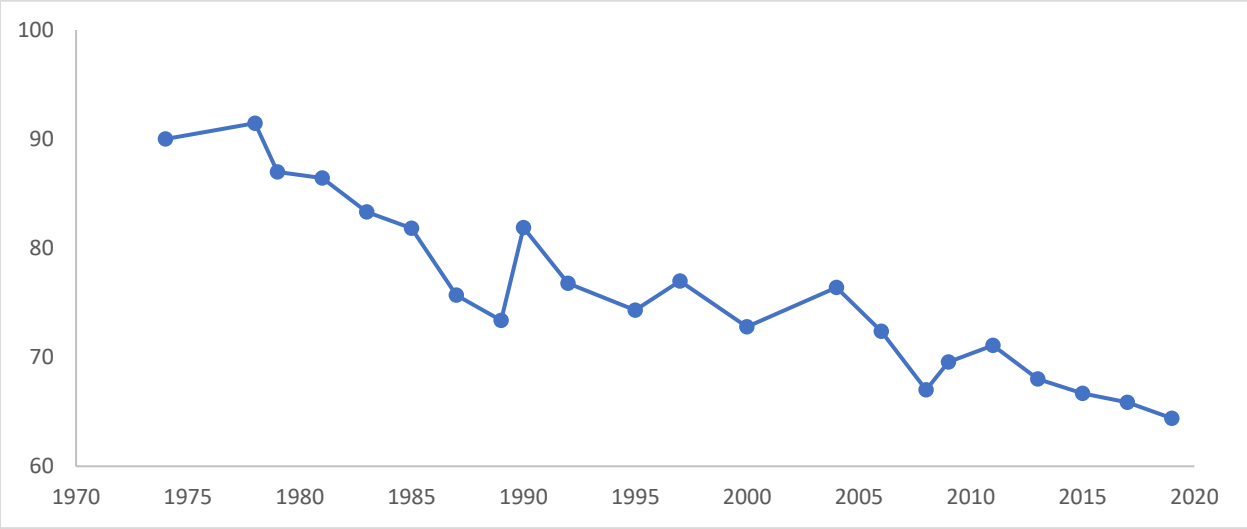
The sustainability of global fishery resources continues to decline, although the rate of decline has decelerated in recent years.

Sustainability of global fishery resources has declined from 90 percent in 1974 to 64.6 percent in 2019, while global marine fish landings have remained relatively stable at around 80 million tonnes since 1995. More recently, fish stocks within biologically sustainable levels contributed to 82.5 percent of the global marine fish landings in 2019, up from 66.7 percent in 2015, when the Agenda 2030 was adopted. Despite the continuous deterioration, the rate of decline has slowed down in the most recent period (Figure 54).

The global trend masks great variations in the proportion of sustainable fish stocks across regions. In 2019, the Southeast Pacific (66.7 percent) had the lowest share of sustainable stocks, followed by the Mediterranean and Black Sea (63.3 percent). By contrast, the Eastern Central Pacific, Southwest Pacific, Northeast Pacific, and Western Central Pacific Oceans had the lowest proportion (13 percent–23 percent) of stocks fished at biologically unsustainable levels.

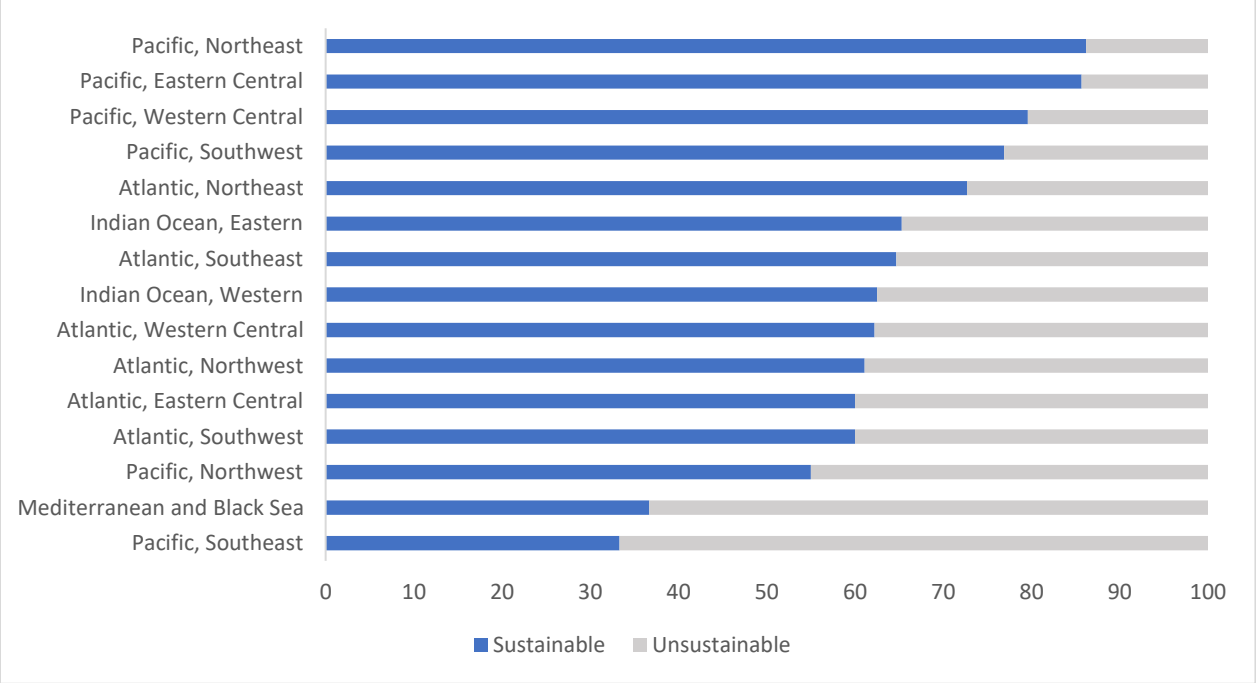
Improved regulations, combined with effective monitoring and surveillance, have proven successful in reverting overfished stocks to biologically sustainable levels. However, the adoption of such measures has generally been slow, particularly in many developing countries. This situation is reflected in the reports of the 30 countries' indicators that are reliably validated – most of the validated country reports come from the developed world, indicating a higher proportion of biologically sustainable stocks than the world average of 64.6 percent.

Figure 54. Proportion of fish stocks within biologically sustainable levels, percentage (1974–2019)



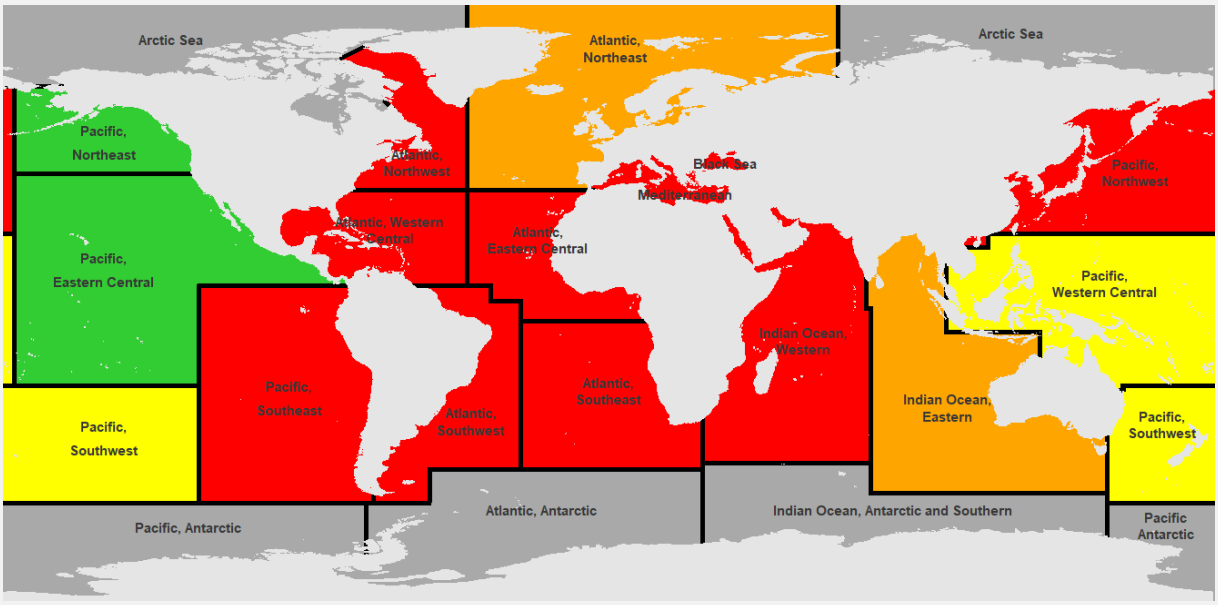
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

Figure 55. Fish stock sustainability status across major fishing areas, percentage (2019)



Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023].
https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig55

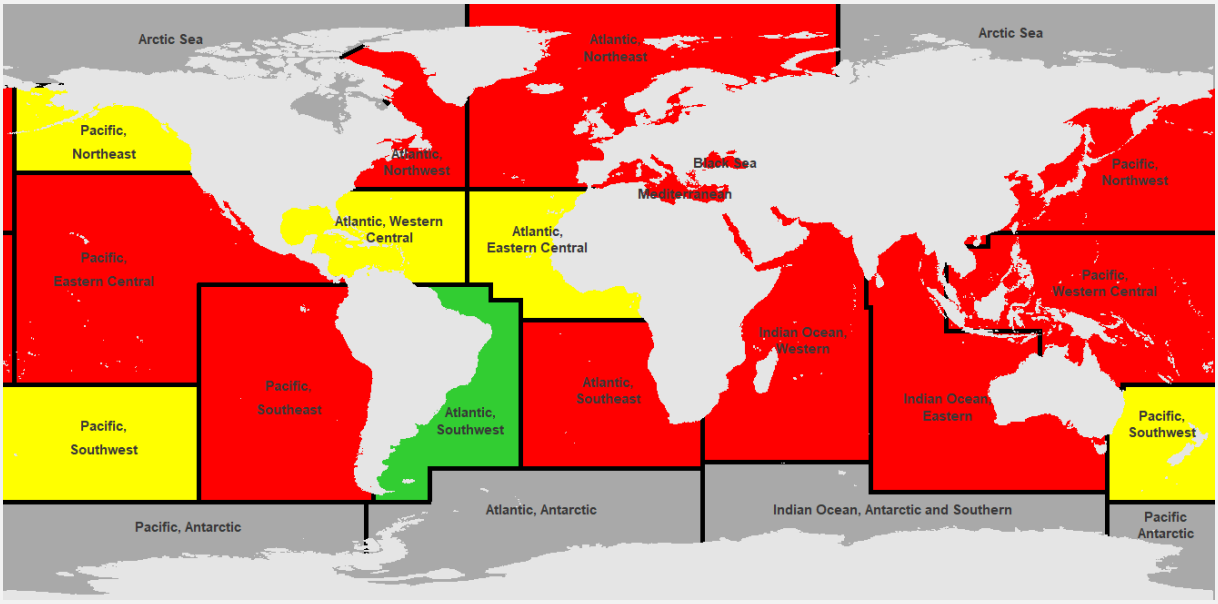
Figure 56. Current status of the proportion of fish stocks within biologically sustainable levels, by fishing area (2019)



	Target already met
	Close to the target
	Moderate distance to the target
	Far from the target
	Very far from the target
	Insufficient data

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 57. Trend in restoring the proportion of fish stocks with biologically sustainable levels by fishing area (2015–2019)



	Target already met
	On track
	On path but too slow
	No improvement
	Deterioration
	Insufficient data

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

SDG INDICATOR 14.6.1

Degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing

Target 14.6

By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation.

Global status assessment: close to target.
Global trend assessment: slight improvement.

Countries have made progress in combating illegal, unreported and unregulated fishing, but a more concerted effort is needed to fully address the issue.

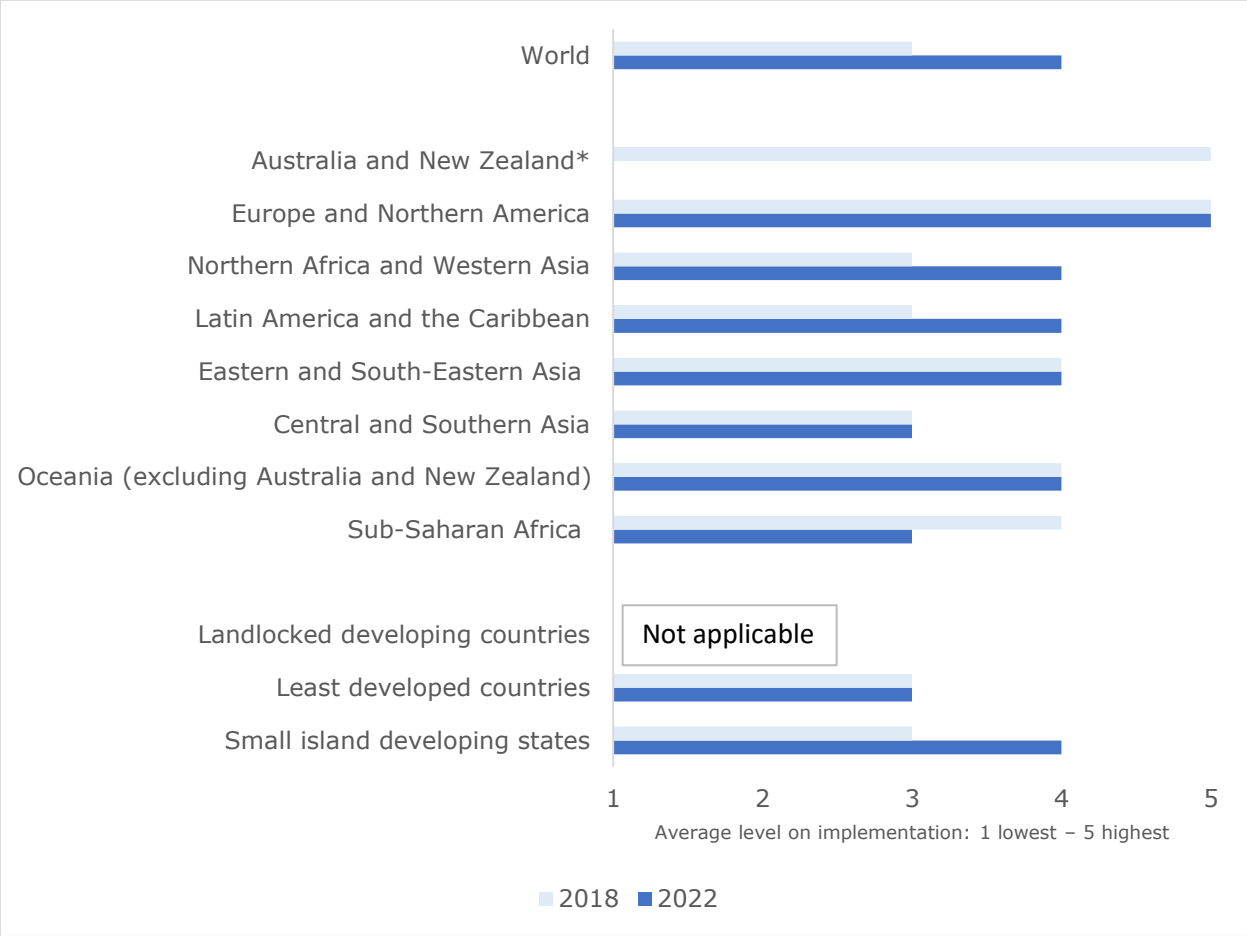
Illegal, unreported and unregulated (IUU) fishing threatens the social, economic and environmental sustainability of global fisheries, hindering countries' abilities to manage their fisheries effectively. Countries' adoption and implementation of the relevant international instruments is key to curbing IUU fishing. Notably, by the end of 2022, the Agreement on Port State Measures, the first binding international agreement to specifically target IUU fishing and which entered into force in 2016, comprised 74 Parties, including the European Union (which counts as one Party on behalf of its 27 Member States). This means that the Agreement now effectively covers over 100 States.

In addition, during the 2018–2022 period,[7] globally, the degree of implementation of these instruments has risen from 3 to 4 (out of a maximum score of 5), indicating good overall progress, with close to 75 percent of states scoring highly in their degree of implementation of relevant international instruments in 2022 compared to 70 percent in 2018 (Figure 58). While SIDS and LDCs face specific challenges in fully implementing these instruments, the former registered an improvement from a medium level of implementation in 2018 and 2020 to a high level in 2022, while for the latter, implementation has remained at a medium level. In terms of regional groupings, fluctuations can be seen over the years in certain regions, resulting in no clear trend in the aggregate levels of implementation.

The status of the indicator suggests that while improvements are being made, further efforts are still needed to implement relevant international instruments and hence maximize their potential to effectively combat IUU fishing.

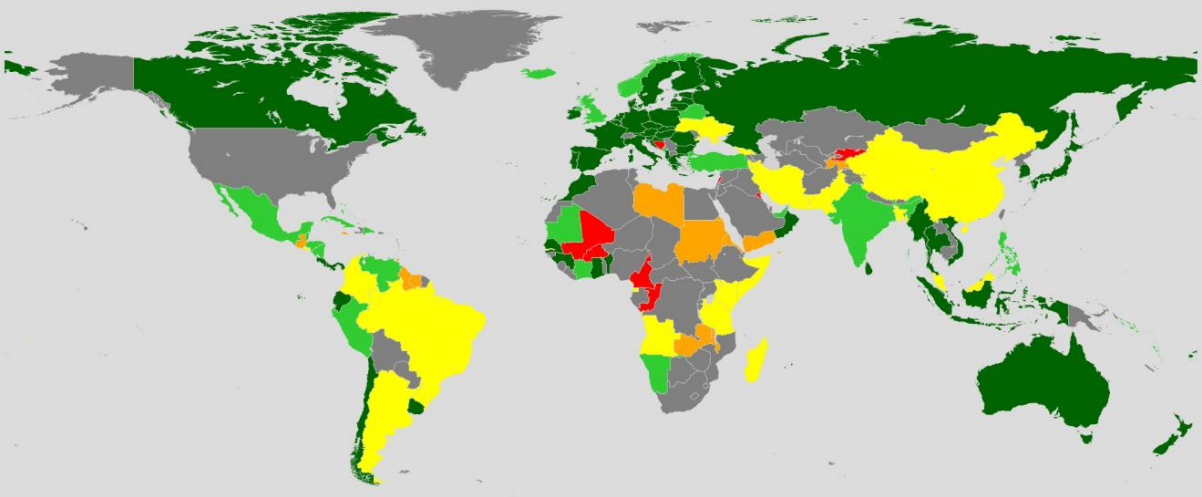
[7] 2018 was the first year that data were collected for reporting on SDG Indicator 14.6.1.

Figure 58. Degree of implementation of instruments to combat illegal, unreported and unregulated fishing, by regions and level of development (2018 and 2022)



Note: * Insufficient number of reporting states to create an aggregated score for this regional grouping in 2022.
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig58

Figure 59. Current status of countries' degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing (2022)

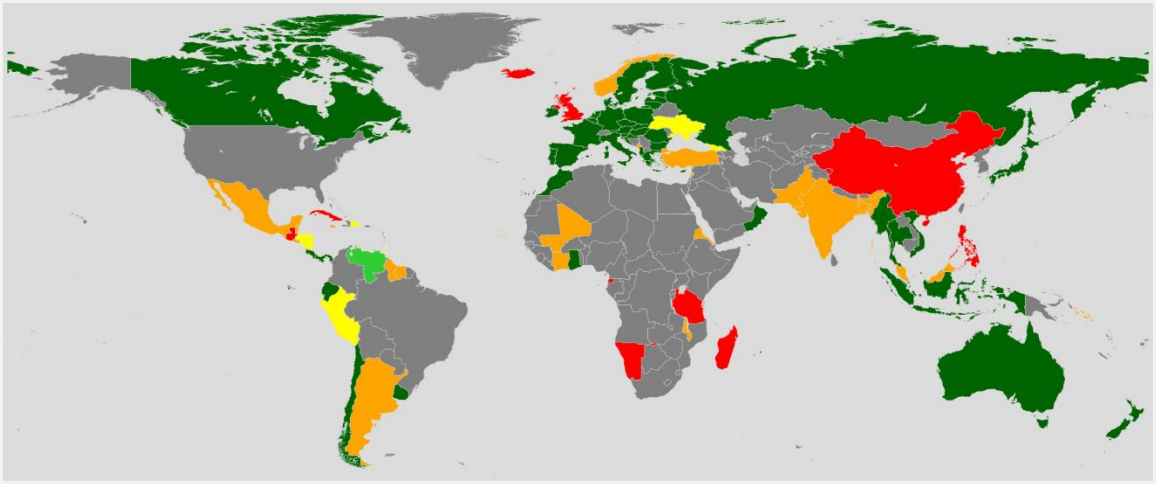


	Target already met
	Close to the target
	Moderate distance to achieving the target
	Far from the target
	Very far from the target
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 60. Trend in countries' degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing (2018–2022)



	Target already met
	Improvement
	Slight improvement
	No improvement
	Deterioration
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

SDG INDICATOR 14.7.1

Sustainable fisheries as a proportion of GDP in small island developing States, least developed countries and all countries

Target 14.7

By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.

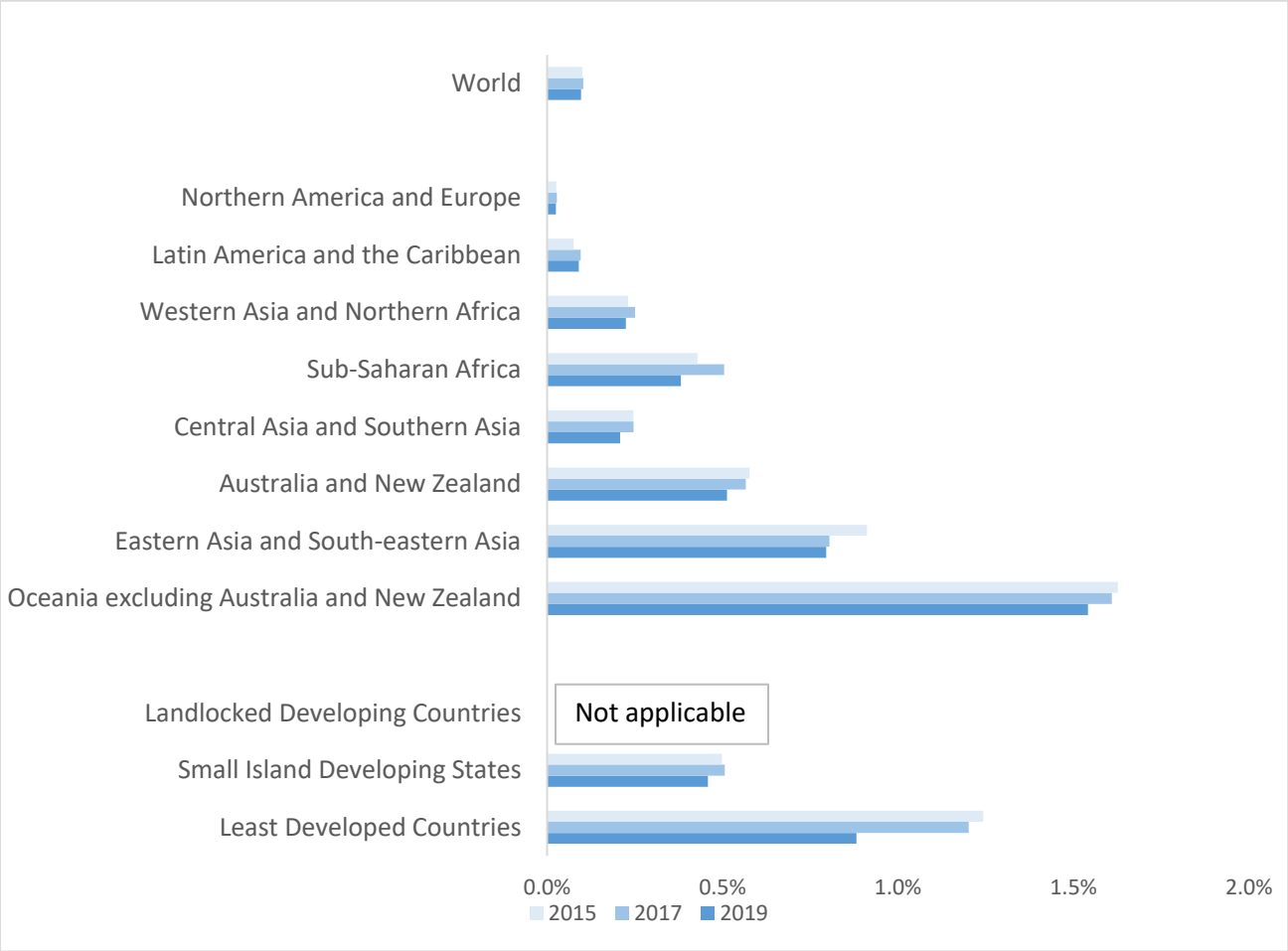
Global status assessment: below median of country values.
Global trend assessment: no improvement.

The contribution of sustainable fisheries to GDP is declining worldwide, with the largest drops noted in least developed countries.

Growing economies and declining stocks have led to a lower contribution of sustainable fisheries to GDP at the global level. Having risen slightly between 2015 and 2017, the value fell again by 6 percent in 2019 (Figure 61). The most significant regional declines have been observed in smaller and developing countries, which are, on average, the most reliant on fisheries for national income. In SIDS and LDCs, sustainable fisheries' contribution fell to 0.5 percent and 0.7 percent of GDP, respectively. This decline was largely because of economic growth in other sectors, which reduced the relative importance of fisheries. At the same time, the added value of the fisheries sector has increased consistently, by several percentage points year on year. This has led to a positive trend in the contribution of sustainable fisheries in regions such as West Africa, where it rose as a proportion of GDP from 0.24 percent in 2011 to 0.34 percent in 2019.

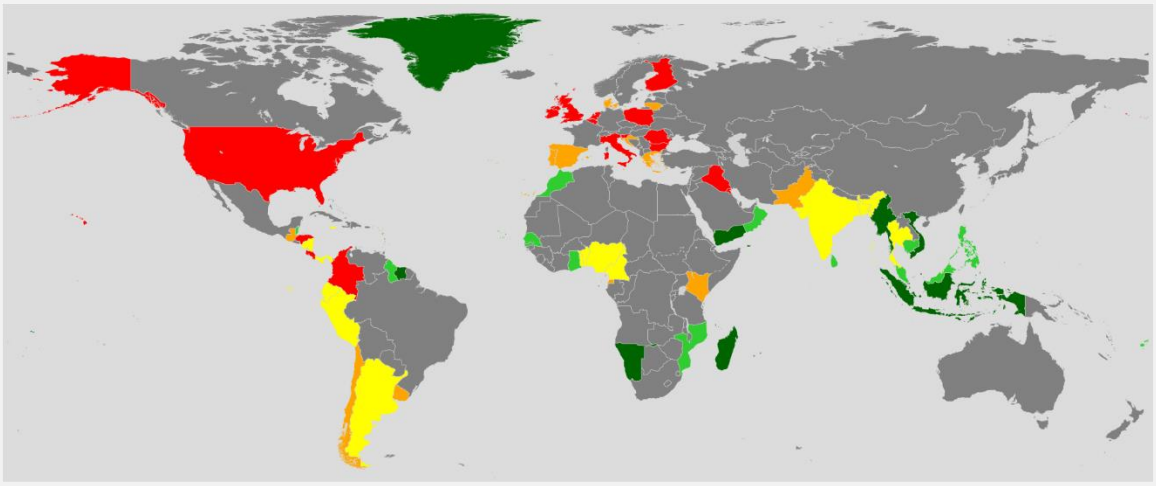
The health of fish stocks, which underpins the sustainability of fisheries, continues to face several human-induced pressures. While the volume of catches has remained consistent since 1995, capture fisheries declined in global stock sustainability. While this decline has slowed in recent years, action is needed to ensure that stocks are monitored and maintained, and to ensure that they can benefit future generations. Some regions are experiencing significant pressures on their stocks, with the Pacific Ocean seeing average sustainability levels falling across the board. This has led to a worsening overall trend in regions such as Southern and South-eastern Asia, where sustainable fisheries as a proportion of GDP fell from 0.76 percent in 2011 to 0.57 percent in 2019.

Figure 61. Sustainable fisheries as a percentage of gross domestic product, by region and level of development (2015–2019)



Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig61

Figure 62. Current status of sustainable fisheries as a percentage of gross domestic product, by quintile (2019)

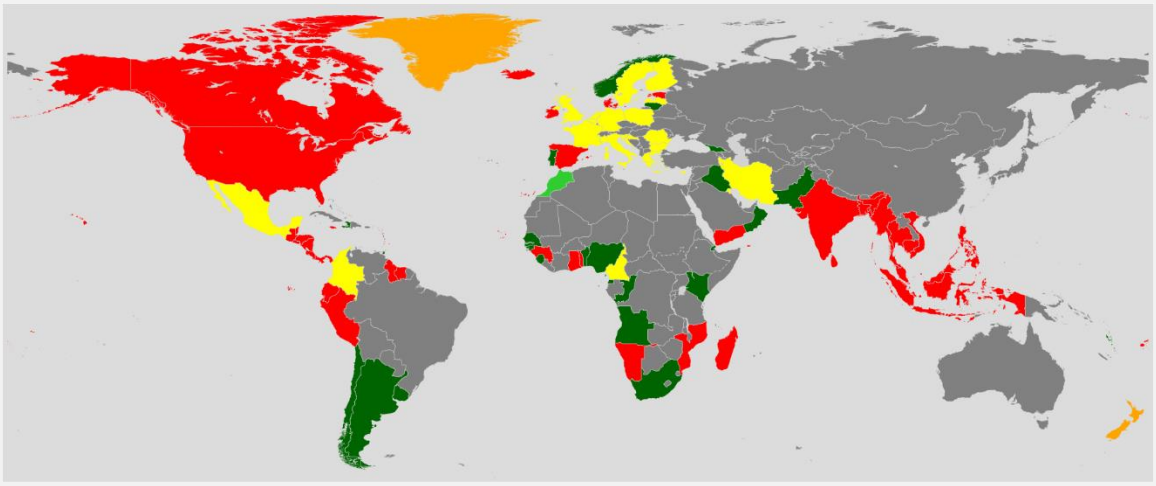


	Fifth quintile
	Fourth quintile
	Third quintile
	Second quintile
	First quintile
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 63. Trend in countries' progress towards increasing sustainable fisheries as a percentage of gross domestic product (2015–2019)



	Improvement
	Slight improvement
	No improvement
	Slight deterioration
	Deterioration
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

SDG INDICATOR 14.B.1

Degree of application of a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries

Target 14.b

Provide access for small-scale artisanal fishers to marine resources and markets.

Global status assessment: target already met.
Global trend assessment: target already met.

The end of International Year of Artisanal Fisheries and Aquaculture 2022 marks the beginning of a new era of support for small-scale fisheries.

Globally, the degree of application of a legal/regulatory/policy/institutional framework which recognize and protects access rights for small-scale fisheries in 2022 was at the highest level, based on data available since reporting began in 2018, reaching a maximum score of 5 out of 5 (Figure 64). However, this score conceals a reduced number of countries that contributed to the reporting. The number of countries reporting data was lower in 2022 than in previous years for all regions except Latin America and the Caribbean. This indicates that efforts to encourage countries to report must be increased, and that there is no room for complacency. Based on available data, regional scores have generally remained stable or improved, with most regions earning a score of 4 out of 5. However, Northern Africa and Western Asia scored lower in 2022 than in 2020.

The new WTO Agreement on Fisheries Subsidies (WTO, 2023), the result of years of negotiations, prohibits Members from funding illegal fishing and fishing of overexploited stocks. The follow-up to finalize related provisions and implement the agreement will have important consequences also for small-scale artisanal fisheries, and it will be crucial to ensure nuanced, inclusive approaches that translate the Agreement in a context-specific and socially just way to ensure sustainable fisheries for all.

The celebrations of the International Year of Artisanal Fisheries and Aquaculture 2022 (IYAFA 2022) provided opportunities to focus the world's attention on the role of small-scale artisanal fishers, fish farmers and fishworkers in ensuring food security and nutrition, poverty eradication and sustainable use of natural resources, thereby increasing global understanding and action to support them.

Providing access for small-scale artisanal fisheries to marine resources and markets was a recurrent theme in the over 260 events, over 300 publications and extensive social media campaigns that marked the celebrations of IYAFA 2022.

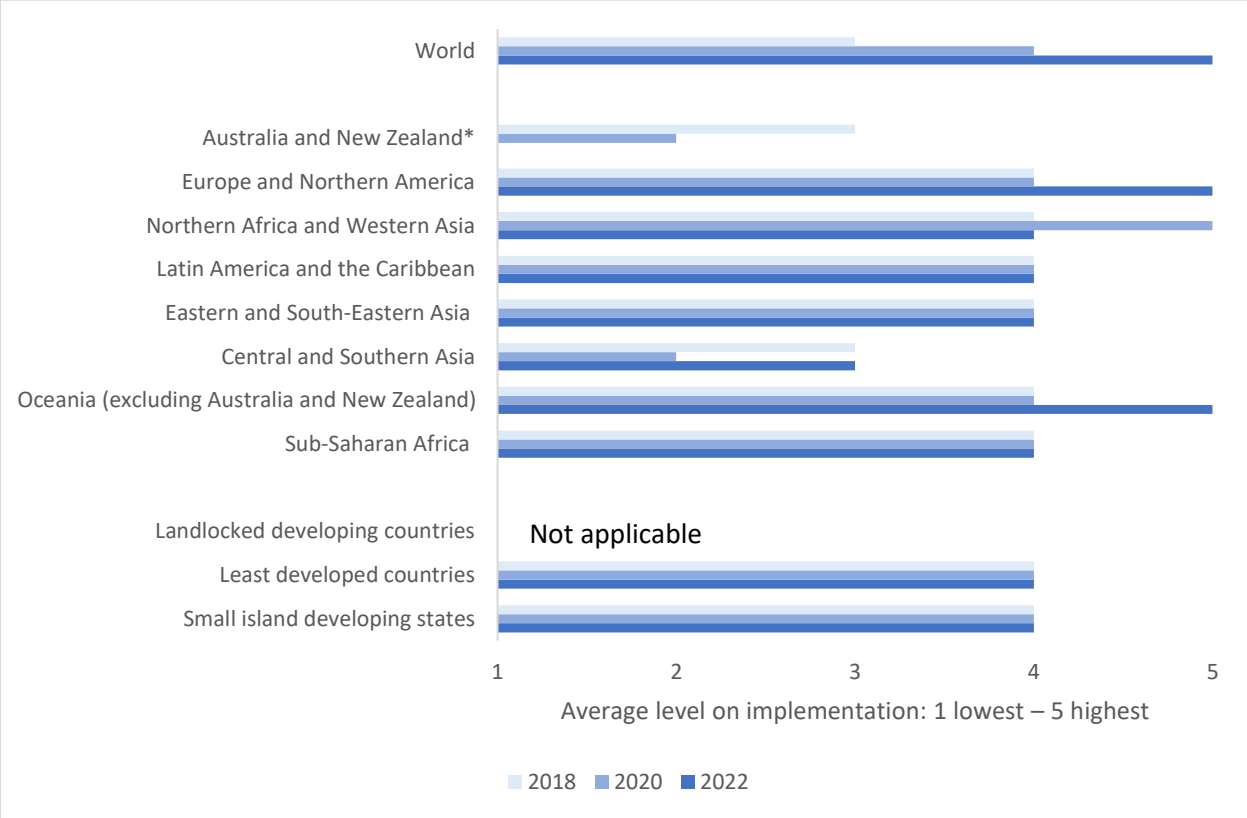
Global public goods supporting the achievement of improved reporting on this target were created during IYAFA 2022. These goods include a legal and policy database on small-scale fisheries that contributes to the implementation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines) (FAO, 2015). The study titled *Illuminating Hidden Harvests: the contributions of small-scale fisheries to sustainable*

development (FAO, 2021) provides new evidence of how small-scale fisheries engage in global markets, and how access to resources is governed.

IYAFA 2022 catalysed collective learning and advancements through further research, on topics such as the impacts of industrial fishing on the rights of Indigenous Peoples in regard to traditional fishing, the right to food focusing on fisheries and aquaculture, and the upcoming biannual Small-Scale Fisheries Summits, which will provide a space for engagement for small-scale fisheries actors themselves.

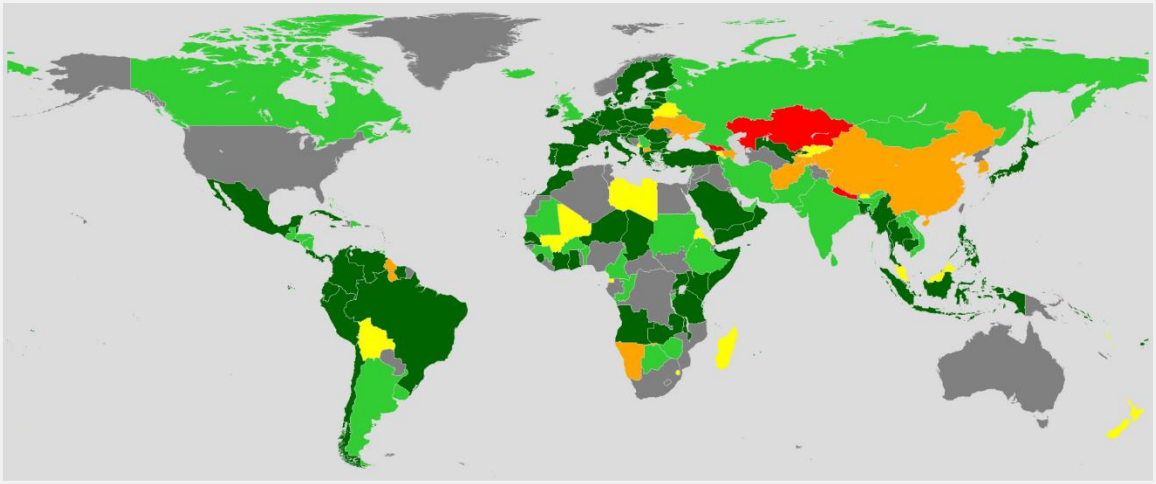
The IYAFA 2022 recommendations, informed by the voices of small-scale artisanal fishers, fish farmers and fishworkers, advise supportive action in line with existing commitments, in particular the implementation of the SSF Guidelines. Thus, the end of IYAFA 2022 marks the beginning of a new era of support for small-scale fisheries and aquaculture.

Figure 64. Progress in application of a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries, by region and level of development (2018, 2020 and 2022)



Note: * Insufficient number of reporting states to create an aggregated score for this regional grouping in 2022.
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig64

Figure 65. Current status of application of legal/regular/policy/institutional frameworks which recognize and protect access rights for small-scale fisheries (2022)

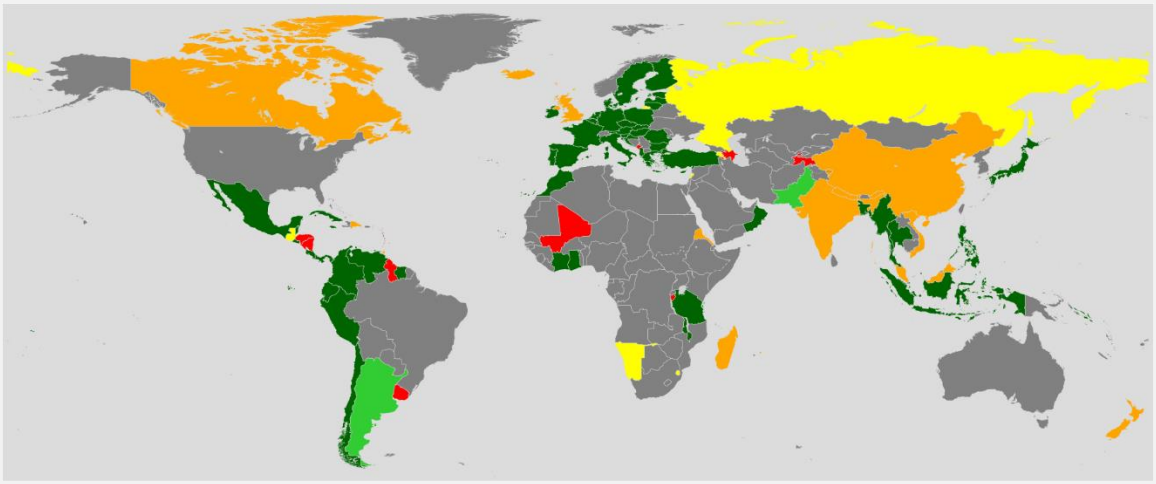


	Target already met
	Very close to the target
	Close to the target
	Far from the target
	Very far from the target
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 66. Trend in application of legal/regular/policy/institutional frameworks which recognize and protect access rights for small-scale fisheries (2018–2022)



	Target already met
	Improvement
	Slight improvement
	No improvement
	Deterioration
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

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SUSTAINABLE DEVELOPMENT GOAL 15

Life on Land

Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss.

INDICATORS
15.1.1 15.2.1 15.3.1 15.4.2 15.6.1

Overview

The world is facing a triple planetary crisis of climate change, pollution and biodiversity loss. The trend in forest loss, land degradation and the extinction of species is becoming worse, posing a severe threat to the health of the planet and people. The world's total forest area has decreased by 100 million hectares since 2000, though the rate of forest loss appears to have slowed down in recent years. Furthermore, between 2015 and 2019, the world has been losing at least 100 million hectares of healthy and productive land every year. While the vegetation cover of mountain areas has remained roughly stable at about 78 percent over the 2000–2018 period, available global data indicate that the proportion of degraded mountain land stands at 1.6 percent of the world's total mountain area for the same period. There are encouraging indications that the adoption of sustainable forest management practices has improved over the past decade. Meanwhile, a growing number of countries is taking measures to facilitate the exchange of plant genetic material to promote access and benefit sharing.

SDG INDICATOR 15.1.1

Forest area as a proportion of total land area

Target 15.1

By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.

Global status assessment: at median of country values.
Global trend assessment: deterioration.

In 2020, forests covered 31.2 percent of the total land area, reflecting a decline by 100 million hectares over the last two decades.

The proportion of the world's total land area that is covered by forest has gradually decreased from 31.9 percent in 2000 (4.2 billion hectares), to 31.5 percent in 2010, and to 31.2 percent (4.1 billion hectares) in 2020 (Figure 67). Since the implementation of Agenda 2030 in 2015, forest cover has globally experienced a 0.2 percent decline, equivalent to almost 25 million hectares. This represents approximately one-quarter of the net forest area losses of close to 100 million hectares over the past two decades.

This global trend results from opposing regional dynamics. Europe, Northern America and most regions in Asia showed an overall increase in forest area from 2000 to 2020 because of afforestation, landscape restoration efforts and natural expansion of forests (Figure 67). In particular, forest area increased in Eastern Asia by 3.64 percent, while South-eastern Asia experienced a 3.65 percent decline in this period. The expansion of forest area, however, slowed down from 2010 to 2020 compared to the period 2000–2010.

Conversely, large forest area losses occurred over the past 20 years in Latin America and sub-Saharan Africa. In particular, LDCs are affected by forest area losses. While in Latin America deforestation is caused by conversion of forest for livestock grazing, in sub-Saharan Africa, the most common direct driver is cropland expansion. Agricultural expansion is the direct driver of almost 90 percent of global deforestation. Cropland expansion was the most important of the direct drivers (49.6 percent) followed by livestock grazing (38.5 percent). Oil palm alone accounted for 7 percent of global deforestation in 2000–2018.

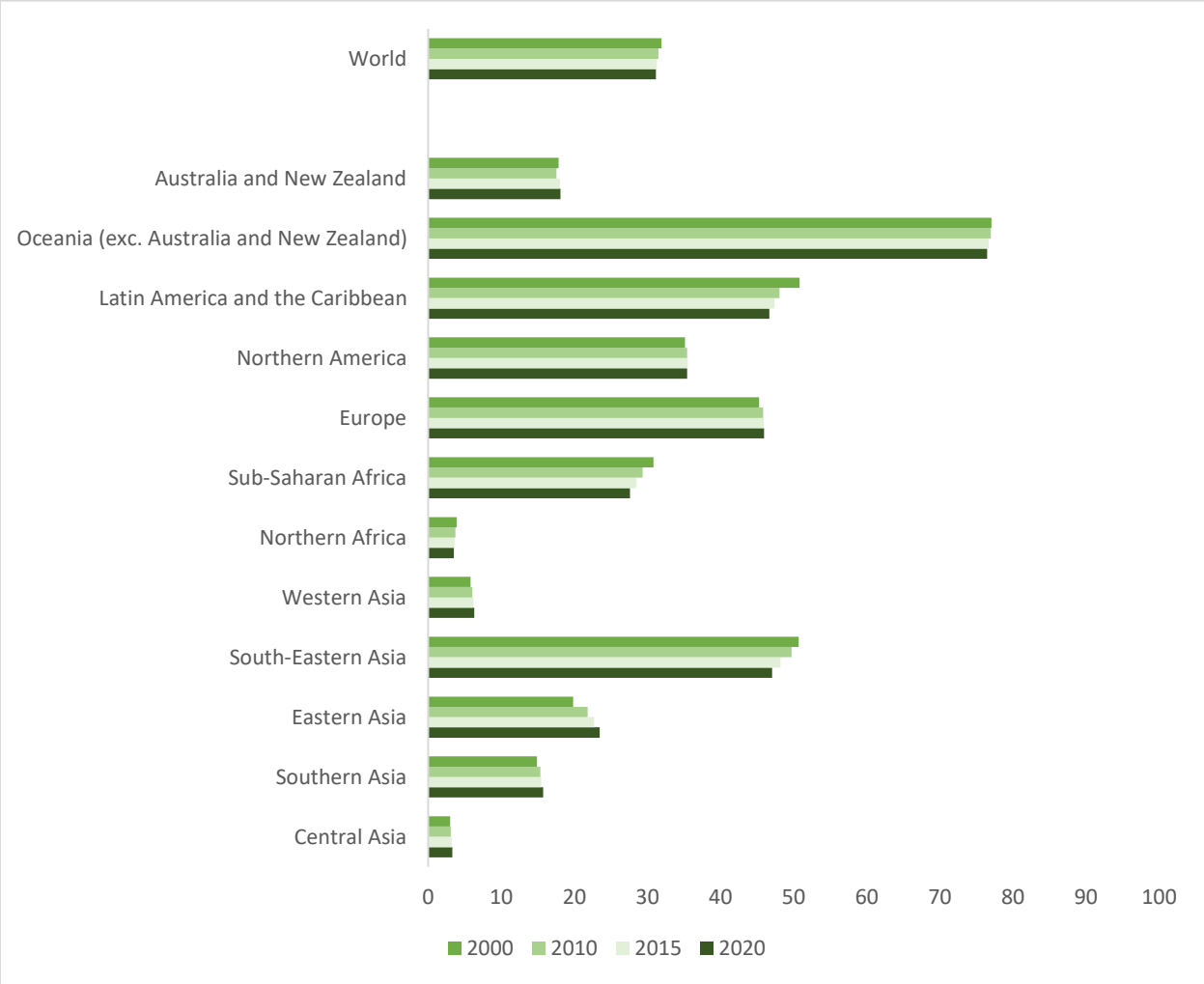
Forests play an important role in the livelihood and well-being of rural and urban populations. They notably contribute towards regulating the water cycle, mitigating climate change and holding most of the world's terrestrial biodiversity. The loss of forests disrupts ecosystem dynamics with pervasive effects on climate, human–wildlife interactions, interlinkages between land-use activities, and provision of ecosystem services.

Although the short and long-term effects of the COVID-19 crisis on forest area are still to be measured, the pandemic has had direct impacts on forest cover and forestry because of changes in the urban–

rural population flow and additional demand for certain forest products. Many rural areas, in particular in the tropics, faced increased pressure from deforestation, illegal logging and poaching.

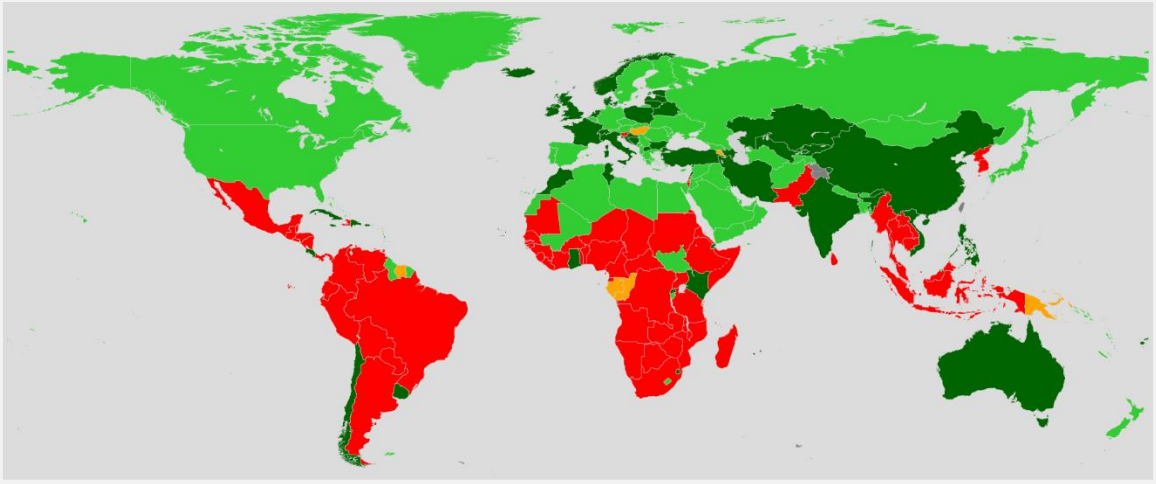
Maintaining momentum on halting deforestation and forest degradation, and restoring damaged ecosystems, is crucial for improving the climate resilience of ecosystems, avoiding biodiversity losses and enhancing rural livelihoods, especially in the tropics and LDCs.

Figure 67. Forest area as proportion of total land area, percentage (2000, 2010, 2015 and 2020)



Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig67

Figure 68. Trend in forest area as a percentage of total land area (2015–2020)



	Improvement
	Slight or no improvement
	Slight deterioration
	Deterioration
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

SDG INDICATOR 15.2.1

Progress towards sustainable forest management

Target 15.2

By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.

Global status assessment: not carried out due to methodological reasons.
Global trend assessment: not carried out due to methodological reasons.

The world is progressing towards sustainable forest management, but the rate of forest loss remains high.

While, globally, there has been some progress towards sustainable forest management in the last decade, progress is uneven across regions. Additionally, the world's forests continue to shrink, mainly because of the expansion of agriculture for crop and livestock production.

In 2022, 444 million hectares of forest were under a certification scheme (Figure 70). Certified forest area showed a 29 percent increase, equivalent to around 100 million hectares since 2010. This positive trend is mainly noticeable in Europe and Northern America, where 65 million hectares were certified in 2010–2022. However, the latest data show that the certified forest area decreased by 19 million hectares (4 percent) between 2021 and 2022.

The proportion of forest area within protected areas increased globally from 17 percent to 18 percent from 2010 to 2020. The subregion with the highest proportion of forest in protected areas in 2020 was Central Asia (59 percent). The same region recorded the highest relative increase from 2010 to 2020 (12 percent). Europe and Northern America show the lowest proportion with only 6 percent of their forests within protected areas.

Forest area under a management plan increased from 2010 to 2020. Most forests in Europe and Asia are under a management plan, with high increases recorded in particular since 2010 in Central Asia and Eastern Asia. The proportion of forest under management plans remains below one-third, although slowly increasing, in Latin America and the Caribbean, Oceania and sub-Saharan Africa.

The amount of above ground biomass in forest has slightly increased because of its notable rise in Eastern Asia, Europe and Western Asia.

The annual forest change rate remains relatively stable at the global level (around -0.1 percent), indicating that while the loss of forest continues, it does so at a slightly slower rate. Forest expansion was observed in Asia, Europe and Northern America in 2010–2020, while important forest losses were recorded in Africa, South-Eastern Asia, as well as in Latin America and the Caribbean. These losses are mainly driven by the expansion of agriculture. Deforestation and forest degradation remain major challenges, especially in the tropics, LDCs, LLDCs and SIDS, indicating the need for more action to reduce deforestation and implement sustainable forest and land management practices.

Although the short- and long-term impacts of the COVID-19 pandemic on forests are still difficult to measure, the pandemic has likely affected forests and forestry because of changes in the urban–rural population flow and additional demand for certain forest products.

Forests are the largest carbon and biodiversity reservoirs on Earth. They are an essential source of foods, goods and services and are vital to the livelihoods of the poorest populations and rural communities. Global and regional efforts to sustain forest ecosystems as well as their social, economic and environmental functions should be pursued, with particular emphasis on the tropics and developing countries.

Figure 69. Progress towards sustainable forest management

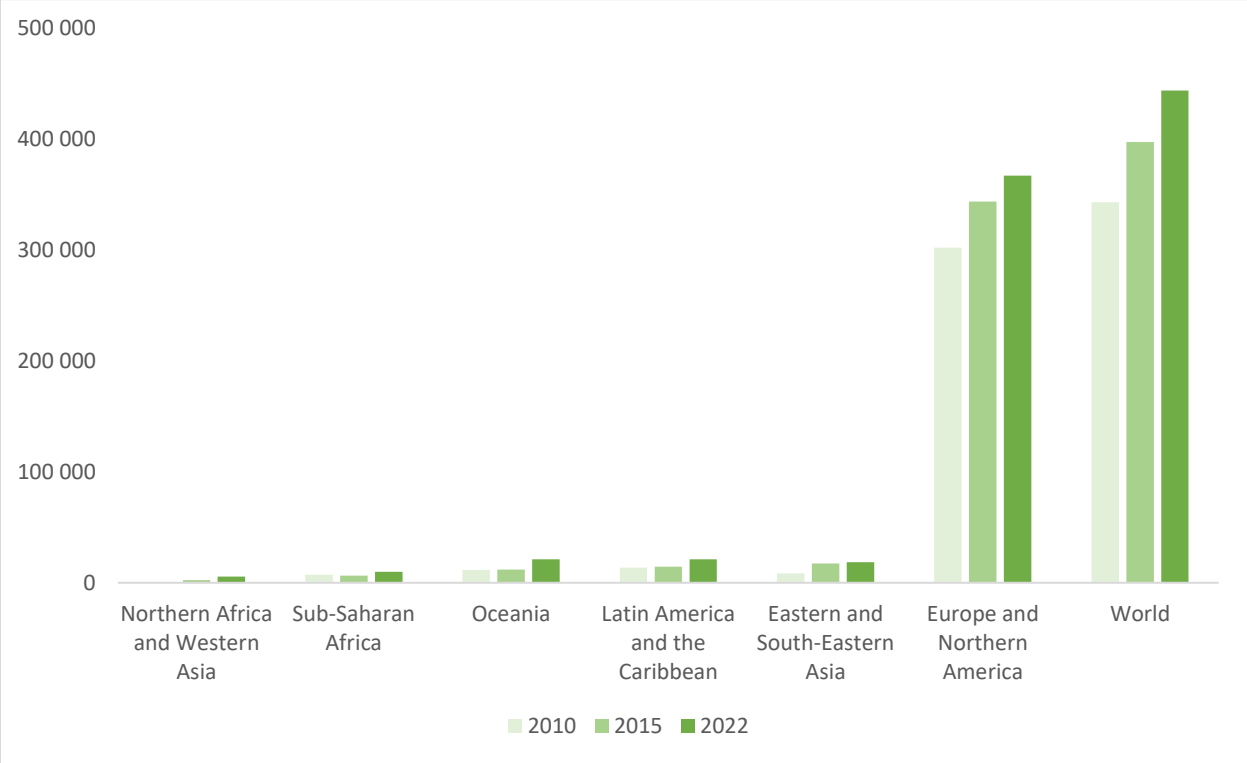
	Progress between 2000–2010 and 2010–2020 decades	Progress between 2010 and 2020			Progress between 2010 and 2022	Progress between 2015 and 2022	Progress between 2021 and 2022
SDG region	**Annual forest area change rate***	**Above ground biomass stock in forest (tonnes/hectares)**	**Proportion of forest area within legally established protected areas**	**Proportion of forest area under a long-term forest management plan**	**Forest area certified (2010–2022)**	**Forest area certified (2015–2022)**	**Forest area certified (2021–2022)**
World	2	1.01	1.06	1.07	1.29	1.12	0.96
Central and Southern Asia	1	1.00	1.08	1.03	15.84	0.72	1.07
Central Asia	1	1.03	1.25	1.28			
Southern Asia	1	1.00	1.04	1.00	15.84	0.72	1.07
Eastern and South-Eastern Asia	1	1.02	1.05	1.16	2.21	1.07	1.00
Eastern Asia	1	1.14	1.11	1.20	1.98	0.61	0.98
South-Eastern Asia	3	1.01	1.02	1.04	2.33	1.58	1.01
Western Asia and Northern Africa	3	1.04	1.05	1.08	271.02	2.33	0.82
Northern Africa	3	0.99	1.00	1.14	0.00		
Western Asia	1	1.09	1.08	1.05		2.33	0.82
Sub-Saharan Africa	3	1.00	1.07	1.30	1.33	1.54	1.04
Northern America and Europe	1	1.05	1.09	1.02	1.22	1.07	0.94
Europe	1	1.06	1.15	1.00	1.46	1.19	0.91
Northern America	1	1.02	1.05	1.06	1.06	0.98	0.97
Latin America and the Caribbean	2	1.01	1.04	1.38	1.53	1.46	1.05

	Progress between 2000–2010 and 2010–2020 decades	Progress between 2010 and 2020			Progress between 2010 and 2022	Progress between 2015 and 2022	Progress between 2021 and 2022
SDG region	**Annual forest area change rate***	**Above ground biomass stock in forest (tonnes/hectares)**	**Proportion of forest area within legally established protected areas**	**Proportion of forest area under a long-term forest management plan**	**Forest area certified (2010–2022)**	**Forest area certified (2015–2022)**	**Forest area certified (2021–2022)**
Oceania	1	0.98	1.06	1.00	1.83	1.76	1.18
Oceania (exc. Australia and New Zealand)	3	0.99	1.01	1.00	50.87	0.73	1.00
Australia and New Zealand	1	0.98	1.07	1.00	1.82	1.78	1.18
Landlocked developing countries (LLDCs)	3	0.99	1.01	1.12	0.59	1.04	1.05
Least developed countries (LDCs)	3	1.00	1.08	1.24	1.41	1.28	1.07
Small Island Developing States (SIDS)	3	1.00	1.13	1.02	1.44	1.16	0.98

1.50	Positive change
1.00	No/small change
-1.50	Negative change
	No certified area

Note: * The annual rate of change in forest area is calculated using a compound interest formula.
Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

Figure 70. Certified forest area (1 000 hectares)



Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023].
https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig70

SDG INDICATOR 15.3.1

Proportion of land that is degraded over total land area[8]

Target 15.3

By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

Global status assessment: moderate distance to the target.
Global trend assessment: deterioration.

The negative trend in land degradation continues, affecting the lives of 1.3 billion people.

Between 2015 and 2019, the world has been losing at least 100 million hectares of healthy and productive land every year. This amounts to an area twice the size of Greenland lost over 4 years. These worsening trends impact the lives of 1.3 billion people, who are estimated to be directly exposed to land degradation. From 2000 to 2019, in Eastern Asia, Latin America and the Caribbean, and Central Asia, at least 20 percent of the total land area was degraded, while most other regions were over 10 percent. Trends since 2015 show that land in sub-Saharan Africa, Western Asia, Latin America and the Caribbean and Southern Asia is degrading considerably faster than the global average, with increases of 6 percent to 8 percent. These are conservative estimates based on just three sub-indicators: changes in land cover, land productivity and organic carbon in soil.

Human activities, such as urban expansion, deforestation and grassland conversion, intensified by climate change, have been identified by countries as the direct drivers of land degradation. Grasslands incurred some of the greatest losses in land productivity, followed by croplands and tree-covered areas. Reporting countries indicated that indirect drivers, such as demographic and economic trends, institutional and governance challenges, and gaps in investment and access to technology, need to be addressed to enable an effective response to land degradation.

At the mid-point in the implementation of the SDGs, if these alarming trends in land degradation continue, it would be necessary to restore 1.5 billion hectares by 2030 to ensure a land degradation-neutral world. However, if new land degradation were to be avoided and the implementation of the existing commitments to restore 1 billion hectares accelerated, the neutrality target would not only be achieved; it would be exceeded by 2030. This would require greater investments in conservation, sustainable management and restoration of land, through integrated land use planning and robust environmental and social safeguards.

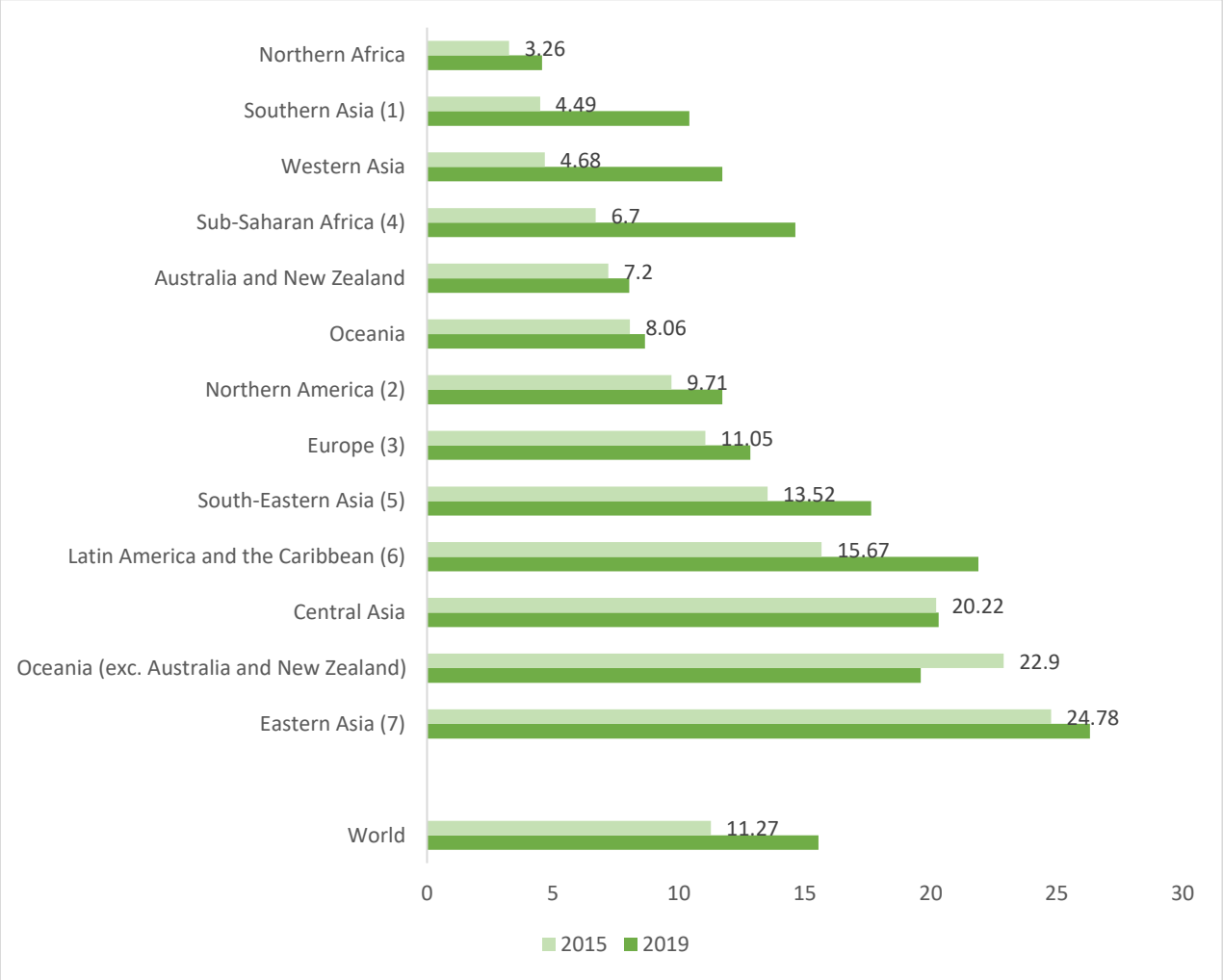
Land restoration includes a broad range of sustainable land and water management practices that can be applied to: (i) conserve or "re-wild" natural areas; (ii) "upscale" nature-positive food production in rural landscapes; and (iii) "green" urban areas, infrastructure and supply chains. The land restoration agenda promotes a multiple-benefits strategy that reverses past land degradation

[8] SDG Indicator 15.3.1 is under the custodianship of the UN Convention to Combat Desertification (UNCCD). FAO is a contributing agency.

and biodiversity loss, while increasing food and water security, improving livelihoods and mitigating and adapting to climate change.

Land restoration is a shared responsibility – everyone has a role to play because everyone has a stake in the health of the land, now and into the future. Governments, businesses and communities can restore land together by seeking convergence and complementarity. Environmental and development priorities can be responsibly managed to create a healthier mosaic of land uses without compromising the needs and aspirations of current and future generations.

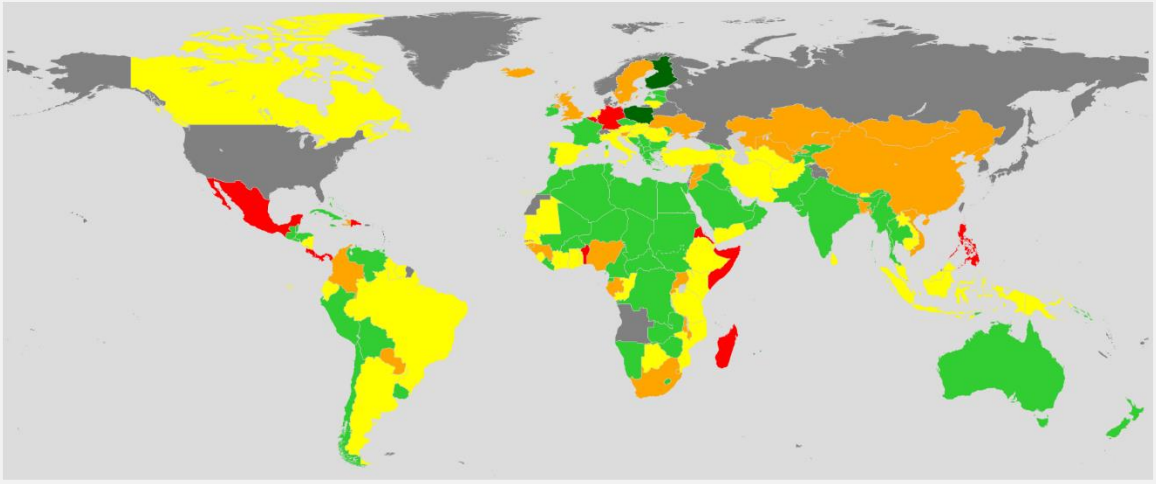
Figure 71. Proportion of degraded land, percentage (2015 and 2019)



Note: (1) Excluding the Maldives; (2) Excluding the United States of America; (3) Excluding Belarus, Denmark, Luxembourg, Malta, Monaco, Norway, the Russian Federation and Switzerland; (4) Excluding Angola and Comoros; (5) Excluding Brunei Darussalam and Singapore; (6) Excluding Barbados and Grenada; (7) Excluding Japan and Republic of Korea.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data
https://doi.org/10.4060/cc7088en-fig71

Figure 72. Current status of degraded land area (2019)

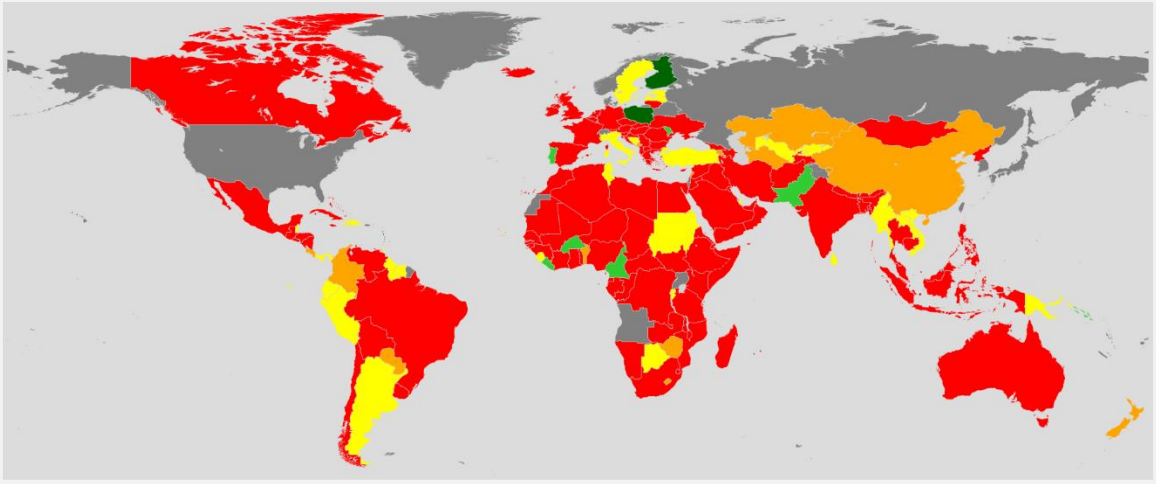


	Target already met
	Close to the target
	Moderate distance to the target
	Far from the target
	Very far from the target
	Insufficient data

Note: Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 73. Trend in global land degradation (2015–2019)



	Target already met
	On track
	On path but too slow
	No improvement
	Deterioration
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

SDG INDICATOR 15.4.2

(a) Mountain Green Cover Index and (b) proportion of degraded mountain land

Target 15.4

By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development.

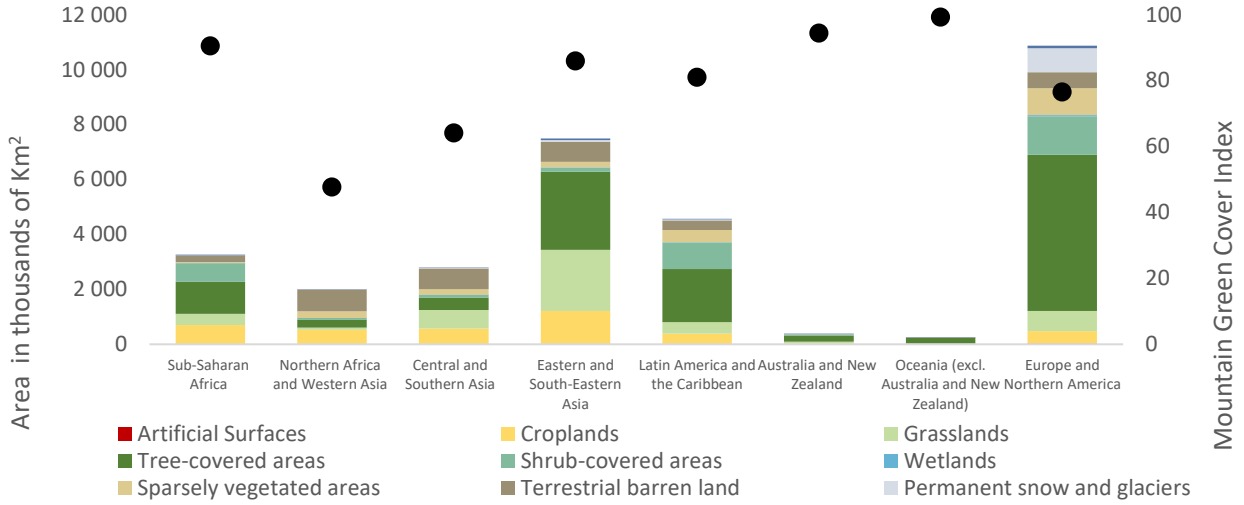
(a) Global status assessment: below median of country values.
Global trend assessment: slight or no improvement.

(b) Global status assessment: close to the target.
Global trend assessment: deterioration.

The proportion of degraded mountain land stands at 1.6 percent of the world's mountain area.

Mountain green cover has remained roughly stable, at about 78 percent over the 2000–2018 period, with a non-significant decrease (0.05 percent) since 2015. Disaggregation of mountainous areas by land cover and geographical region provides additional insights, allowing to visualize how biophysical characteristics and historic and recent land uses shape their landscapes (Figure 75).

Figure 74. Mountain green cover index by land cover type (2018)



Note: Right axis – distribution of land cover types in the different SDG regions in 2018. The height of each bar indicates total mountain area for each SDG region. Left axis – values of mountain green cover index in 2018, represented as black dots.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

Tree-covered areas are the dominant mountain land cover type globally, particularly in Oceania (90 percent of the total mountain area), Europe and Northern America (52 percent), Latin America and the Caribbean (42 percent), Eastern and Southern Asia (38 percent) and sub-Saharan Africa (35 percent). There are only two exceptions: Northern Africa and Western Asia, where barren land (40 percent) and croplands (25 percent) dominate, and Central and Southern Asia, where barren land (26 percent), grasslands (24 percent) and croplands (20 percent) are the most widespread land cover types.

Tropical and subtropical regions characterized by low- or mid-altitude mountain ranges, such as Oceania, tend to show the highest green cover values (99 percent). Conversely, regions characterized by high-altitude mountain ranges located in temperate and boreal zones, where environmental conditions are less favourable to vegetation growth, such as Central Asia, North America and Europe, tend to show lower green cover values (64 percent and 76 percent, respectively). Arid regions such as Northern Africa and Western Asia also tend to show low green cover area values (46 percent).

Detrimental changes in land cover and land use are important contributors to terrestrial biodiversity loss, including in mountain ecosystems. The proportion of degraded mountain land measures this by calculating the amount of mountain area where changes in land cover may indicate a decline or loss of biodiversity, mountain ecosystem functions or services considered desirable in a local or national context. For this purpose, land cover transitions that indicate a decline or loss of biodiversity and mountain ecosystem services are considered degradation of mountain land.

Table 5. Mountain bioclimatic belts and reclassification for data disaggregation of SDG Indicator 15.4.2

Bioclimatic belts	Growing season mean temperature	Growing season length	Bioclimatic belts adopted for SDG Indicator 15.4.2
Nival	< 3.5 °C	< 10 days	Nival
Upper alpine	< 3.5 °C	> 10 days and < 54 days	Alpine
Lower alpine	< 6.4 °C	< 54 days	
THE TREELINE			
Upper montane	> 6.4 °C and ≤ 10 °C	---	Montane
Lower montane	> 10 °C and ≤ 15 °C	---	
Remaining mountain area with frost	> 15 °C	---	Remaining mountain areas
Remaining mountain area without frost	> 15 °C		

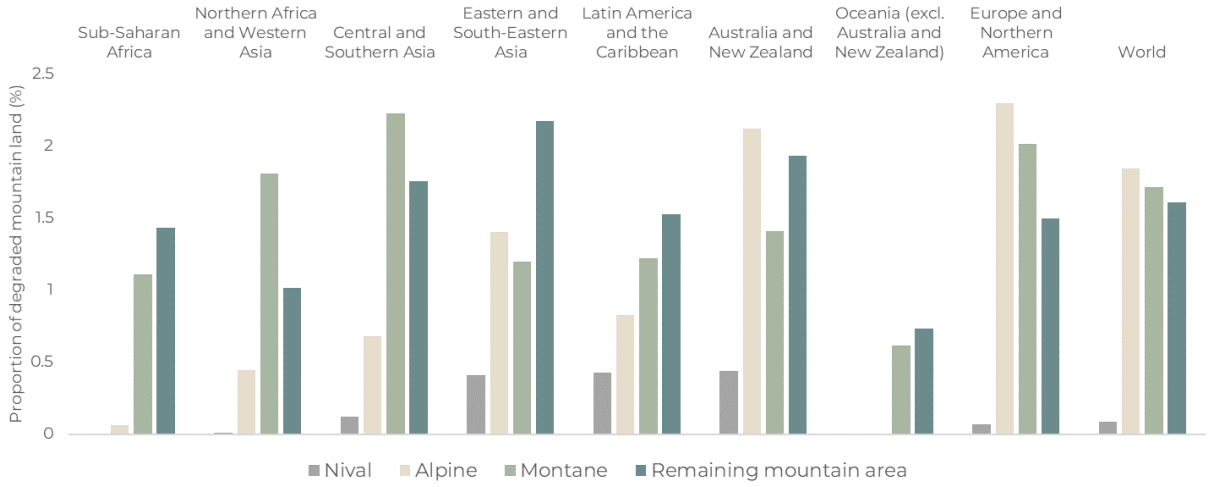
Note: Mountains can be subdivided vertically into seven bioclimatic belts based on average temperatures, which helps account for the latitudinal change in elevation of thermally similar areas in the world's mountains. For the purposes of Indicator 15.4.2, these seven bioclimatic belts are aggregated into four (nival, alpine, montane and remaining mountain areas)

Source: Körner, C., Paulsen, J. & Spehn, E. 2011. *A definition of mountains and their bioclimatic belts for global comparisons of biodiversity data*. Alpine Botany, 121: 73–78.

Available global data indicate that the area where detrimental changes in land cover occurred during the 2000–2018 period represents approximately 1.6 percent of the world's total mountain area. Disaggregated data show that the mountain belts most affected by detrimental land cover changes were the alpine (1.8 percent) and the montane (1.7 percent) belts, while nival areas were the least affected (0.08 percent) (Figure 75).[9] Disaggregation by both SDG regions and bioclimatic belts show that the areas with the highest proportion of degraded mountain land are the alpine areas of Europe and Northern America (2.3 percent), followed by the montane areas of Central and Southern Asia (2.2 percent) and the lower mountain belts of Eastern and Southern Asia (2.1 percent).

[9] These values should be interpreted with caution, given that changes in the area of permanent snow and ice are not yet captured by the global land cover dataset used for the analysis (European Spatial Agency, 2017).

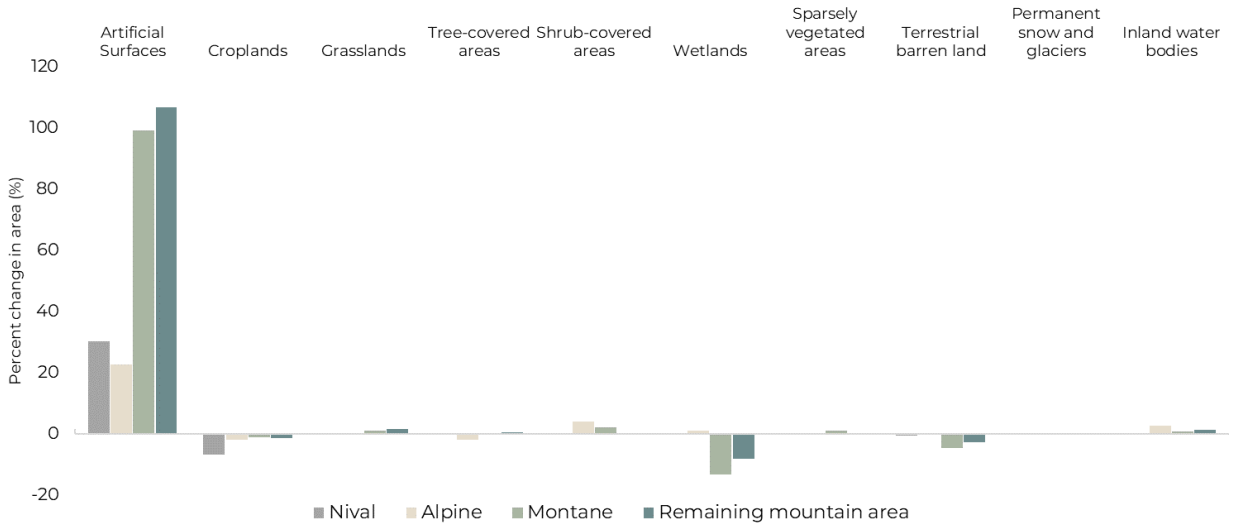
Figure 75. Proportion of degraded mountain land in the different SDG regions, disaggregated by bioclimatic belt (2000–2018)



Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

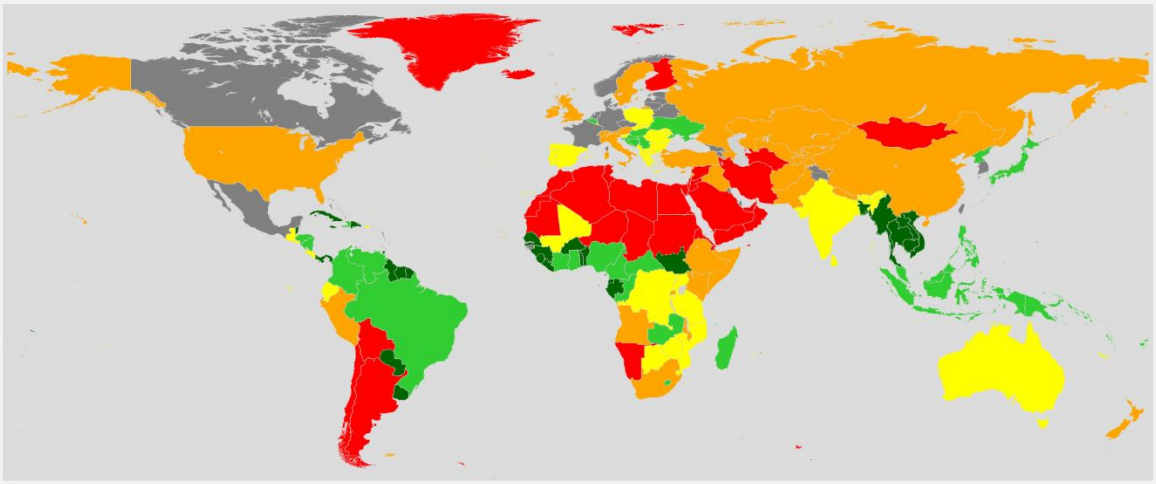
Finally, an analysis of the changes in land cover types in the world's mountain areas shows that the area of artificial surfaces more than doubled (106 percent increase) during the 2000–2018 period, particularly below the treeline (montane and remaining mountain areas). Wetland areas below the treeline also experienced an important decrease during the same period (Figure 76).

Figure 76. Changes in the area of the different land cover types in the world's mountain area during 2000–2018



Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data

Figure 77. Current status of mountain green cover index, by quintile (2018)

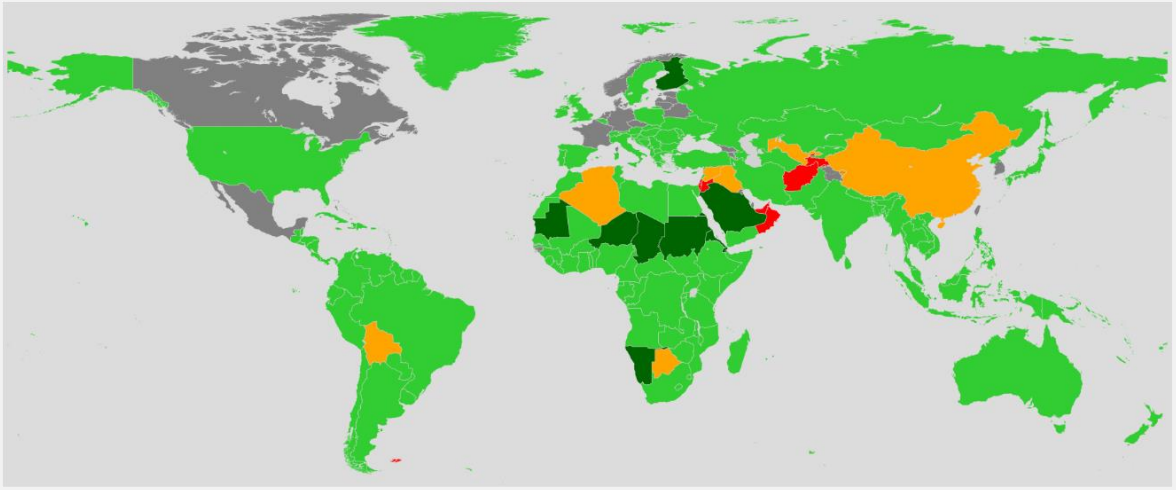


	Fifth quintile
	Fourth quintile
	Third quintile
	Second quintile
	First quintile
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 78. Trend in improving mountain green cover index by region (2015–2018)

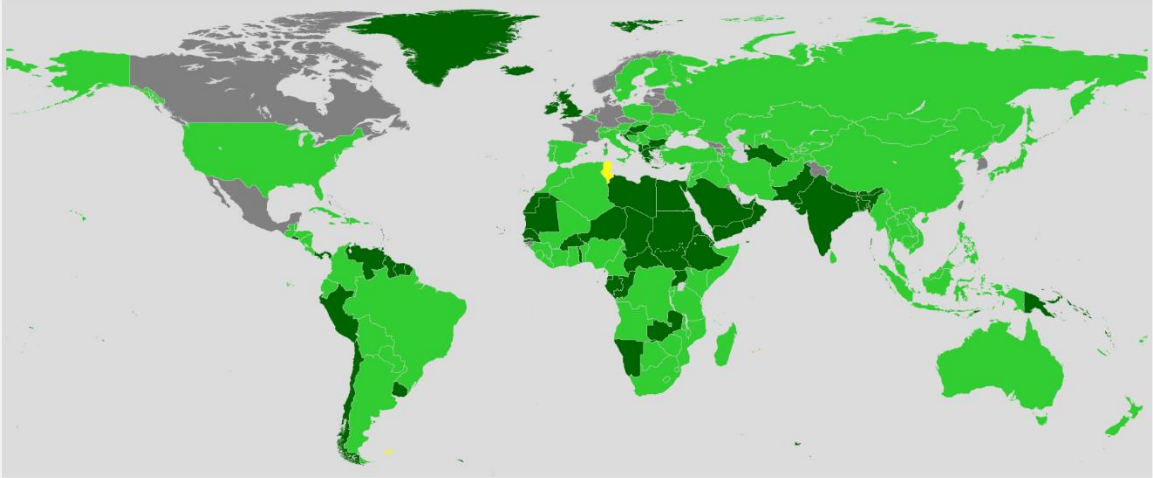


	Improvement
	Slight or no improvement
	Slight deterioration
	Deterioration
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 79. Current status of mountain land degradation (2018)

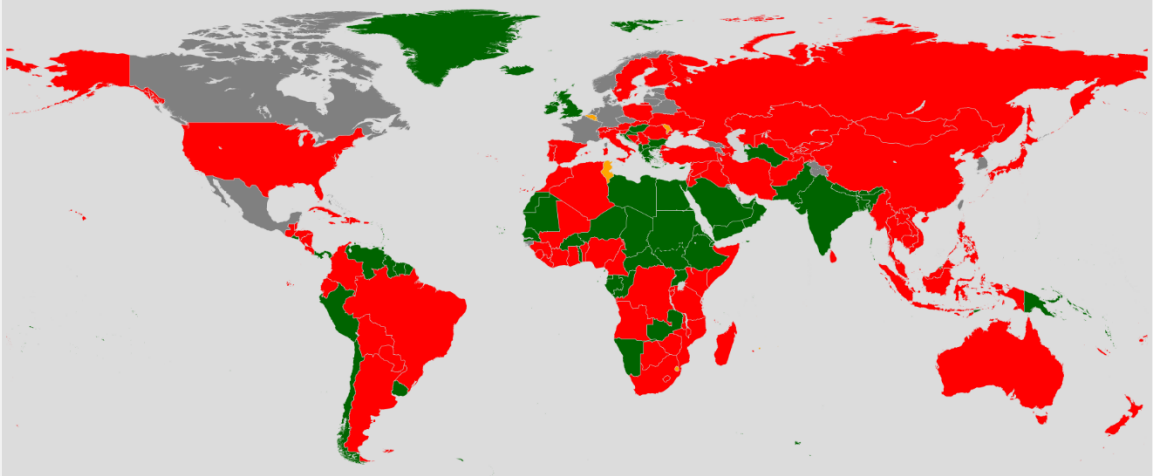


	Target already met
	Close to the target
	Moderate distance to the target
	Far from the target
	Very far from the target
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

Figure 80. Trend in mountain land degradation (2015–2018)



	Target already met
	On track
	On path but too slow
	No improvement
	Deterioration
	Insufficient data

Note: The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Sudan and South Sudan has not yet been determined.

Source: FAO. 2023. Data. In: *SDG Indicators Data Portal*. Rome. [Cited 8 June 2023]. https://www.fao.org/sustainable-development-goals-data-portal/data (modified to comply with the UN Geospatial Information Section, 2023).

SDG INDICATOR 15.6.1

Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits[10]

Target 15.6

Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed.

SDG Indicator 15.6.1

Countries that are contracting parties to the International Treaty on Plant Genetic Resources for Food and Agriculture

Current status: not possible absence of numerical yardstick in target.
Trend: improvement.

Countries that have legislative, administrative and policy frameworks or measures reported through the Online Reporting System on Compliance of the International Treaty on Plant Genetic Resources for Food and Agriculture

Current status: not possible due to absence of numerical yardstick in target.
Trend: improvement.

Total reported number of standard material transfer agreements transferring plant genetic resources for food and agriculture to the country

Current status: not possible due to absence of numerical yardstick in target.
Trend: improvement.

New biodiversity deal draws renewed attention to the fair and equitable sharing of benefits arising from the utilization of genetic resources

Since the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity came into force in 2014, the number of Parties that have ratified it has risen to 138, including 137 countries and the European Union, representing 70 percent of all Parties to the Convention on Biological Diversity.

However, as the Nagoya Protocol edges towards global ratification, many countries have yet to establish the necessary legislative, administrative or policy measures to ensure the fair and equitable sharing of benefits arising from the use of genetic resources and associated traditional knowledge. In 2022, no additional countries had published any measures to the Access and Benefit-Sharing Clearing-House, keeping the number at 68 from 2021. Twenty-five countries have issued 4 440

[10] SDG Indicator 15.6.1 is under the custodianship of the Secretariat of the Convention on Biological Diversity (CBD). FAO is a contributing agency.

internationally recognized certificates of compliance (an increase of 1 000) as proof that prior informed consent was granted and mutually agreed terms were established for access in 2022.

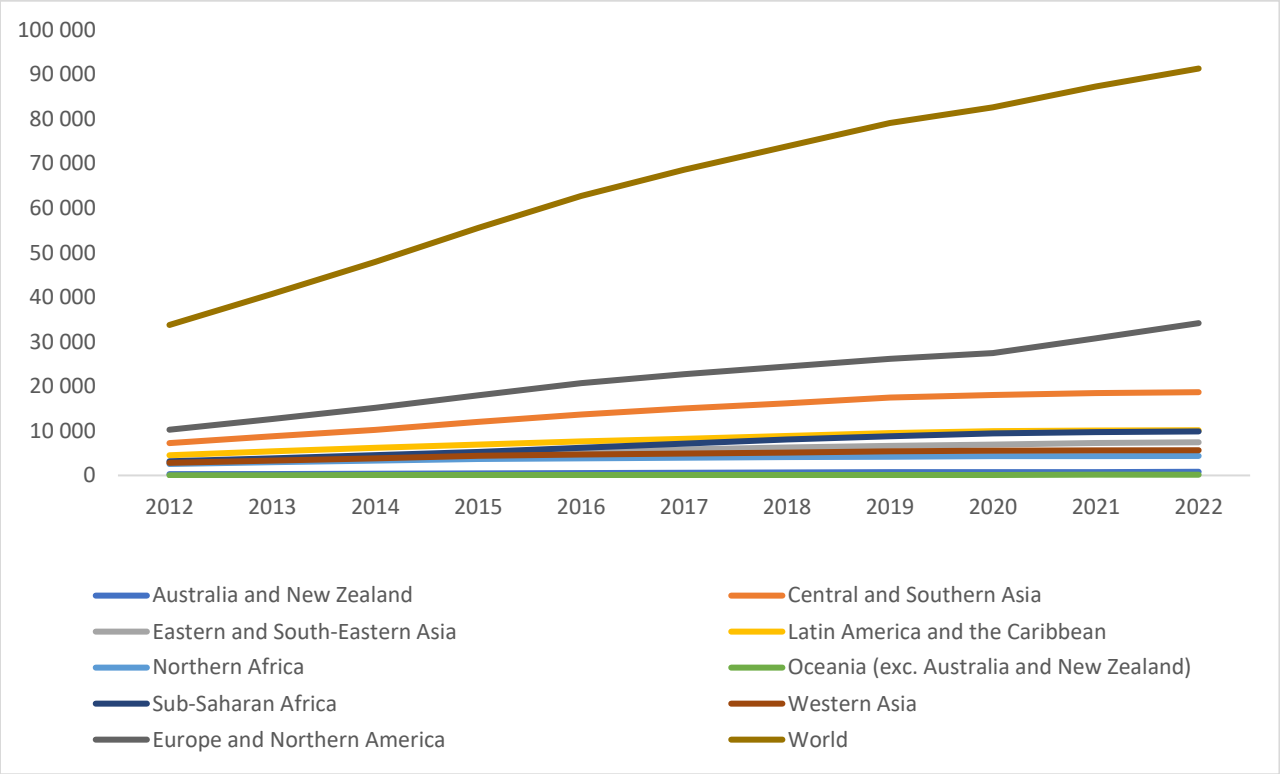
The number of Contracting Parties to the International Treaty on Plant Genetic Resources for Food and Agriculture (International Plant Treaty) has reached 150, including the European Union, as of 1 January 2023, with two countries joining in 2022. By the end of 2022, 88 countries have submitted their national report to provide information about their implementation of the treaty's provisions, including on access and benefit-sharing measures; nine countries made their submissions in 2022. The number of Standard Material Transfer Agreements (SMTAs) has been also increasing, from 55 566 in 2015 to 91 352 in 2022, indicating that more users are benefiting from accessing plant genetic resources for research, breeding and training.

Reported delays in legislative processes and in the implementation of capacity development activities because of the COVID-19 pandemic have likely delayed progress towards the target for some countries. On the other hand, increased digitalization of capacity-development and training materials has been a positive development in facilitating knowledge sharing.

The Benefit-Sharing Fund, established by the International Plant Treaty's Governing Body, supports projects that leverage plant genetic resources to find solutions for complex challenges relating to food and nutrition insecurity, biodiversity loss and climate change. Its Fifth Cycle was launched in May 2022. The Benefit-Sharing Fund is the operational mechanism to share benefits arising from the Multilateral System of the International Plant Treaty and its funding includes user-based income from the Multilateral System, in addition to voluntary contributions.

The adoption of the Kunming-Montreal Global Biodiversity Framework in December 2022 in Montreal, as well as a decision by the Conference of the Parties to the Convention on Biological Diversity to share fairly and equitably the benefits arising from the use of digital sequence information on genetic resources, brings renewed attention to the implementation of access and benefit-sharing frameworks. In the context of this Framework, new indicators for access and benefit-sharing are to be developed by an Ad Hoc Technical Expert Group for Goal C and Target 13. This provides an important opportunity to further improve data collection and analysis on the benefits shared from utilization of genetic resources, to accelerate global efforts to conserve and sustainably use genetic resources, as well as to enhance the mutually supportive implementation of access and benefit-sharing instruments.

Figure 81. Number of standard material transfer agreements regarding plant genetic resources for food and agriculture in the world (2012–2022)



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Annexes

Data sources and statistical methods used for the FAO Sustainable Development Goals Progress Report

Eight years into the implementation of the 2030 Agenda for Sustainable Development, the demand from governments, donors and international organizations for an assessment of whether the established SDG targets will be achieved or not, at which level (global, regional or national)), and whether inequalities between different population groups and geographical areas will be eradicated by the end of 2030, is becoming increasingly pressing. To improve the first United Nations (UN) SDG Progress Chart, a dedicated task team was created in February 2020 under the aegis of the Inter-agency and Expert Group on SDG indicators (IAEG-SDG). This task team, of which FAO is a member, has developed guidance notes and further streamlined the methodology and design of the SDG Progress Chart, which is now produced on an annual basis. This report draws on the UN SDG Progress Chart's overall methodology to analyse trends, which relies on established quantitative approaches to assess the status of achievement and the progress made over time towards the SDG indicators.

A major distinction is made between indicators that underpin targets with a numerical yardstick, and those that underpin targets without a numerical yardstick. Only a minority (about 30 percent) of all SDG targets have an explicit numerical yardstick, which poses serious challenges for the assessment of progress. Some international organizations have come up with creative ways of bypassing this problem, for instance by setting global or regional targets based on indicators' distributions, or using the average value of the indicators in the top five performing countries as a benchmark. However, such methods carry important risks, as they effectively blur the boundaries between the roles of statisticians and legislators, and completely disregard the initial conditions in which disadvantaged countries started their development trajectory.

Therefore, where there is no numerical yardstick, this report will only assess whether the trend is going in the right direction or not, and, if so, whether progress is being made at a good or only fair pace. To assess levels of achievement, the report will provide a summary picture of the current situation by associating each country to its corresponding quintile of the distribution of indicator values.

This technical compendium is structured as follows. Annex A.1. briefly describes the SDG indicators under FAO's custodianship, along with the main data sources used for their computation. Annex A.2 presents the methodology used for the progress assessment at indicator level. The first section of

Annex A.2 discusses the general approach adopted for assessing the current status and the trend of SDG indicators, while the second section provides indicator-specific fiches that detail the specific combination of methods used, taking into account all relevant characteristics of each indicator (normative direction, nature of indicator and existence of a numerical yardstick). Finally, Annex A.3 discusses the methodology adopted to aggregate the progress assessment performed at indicator level first at the target level and then at the goal level.

Annex A.1 – Definitions and data sources

A.1.1 SDG indicators under FAO custodianship

SDG Indicator 2.1.1: Prevalence of Undernourishment (PoU)

PoU is an estimate of the proportion of the population whose habitual food consumption is insufficient to provide the dietary energy levels that are required to maintain a normal active and healthy life. The computation of Indicator 2.1.1 is based on a model determining the probability that a randomly selected individual in a population regularly consumes a quantity of food that is insufficient to meet his/her normal energy requirements. Due to the probabilistic nature of the inference and the margins of uncertainty associated with estimates of each of the parameters in the model, the theoretical margins of errors for the PoU would very likely exceed plus or minus 2.5 percent in most cases. For this reason, FAO does not publish national PoU estimates that are lower than 2.5 percent.

The parameters used for the computation of the PoU (and their main data sources) include:

- Average dietary energy consumption (DEC) per capita per day – food balance sheets or dietary intake survey data (both with limitations; thus, the indicator is usually reported as a three-year average);
- Coefficient of variation (CV) of dietary energy consumption – household income expenditure surveys (HIES);
- Skewness of dietary energy consumption (SK) – HIES;
- Minimum dietary energy requirement (MDER) per day – demographic data, the UN Population Division's World Population Prospects data (age, sex, height).

SDG Indicator 2.1.2: Prevalence of moderate or severe food insecurity, based on the food insecurity experience scale (FIES)

Indicator 2.1.2 measures the percentage of individuals in a population who have experienced food insecurity (constrained access to food due to a lack of money or other resources) at moderate or severe levels during the reference period.

Data to compute this indicator are collected using a module with eight questions. The responses to these questions are analysed using the item response theory (Rasch model) to obtain measures of the severity of food insecurity of household or individuals (treated as a latent trait) that can be compared between countries. The module (available in about 200 languages) should be incorporated into large-scale, nationally representative population surveys. To fill gaps until all countries collect

their own FIES data, FAO has been including this module in the Gallup World Poll since 2014, and collects data at the national level for about 140 countries.

SDG Indicator 2.3.1: Productivity of small-scale food producers

To compute Indicator 2.3.1, small-scale food producers are defined as those falling in the bottom 40 percent of the cumulative distribution of land size, livestock heads and total on-farm revenues (with a total revenue cap of PPP USD 34 387). In line with recommendations from the Manual for Measuring Productivity published by the Organisation for Economic Co-operation and Development in 2001, productivity is measured as the value of agricultural output (in PPP USD) divided by labour input (in annual number of working days). Agricultural output is calculated as the quantity of agricultural products produced by small-scale food producers, multiplied by the constant sales price received during the same year.

Given that Indicator 2.3.1 is measured for a specific population of producers i.e. those considered small-scale, the ideal data source for measuring this indicator is a single survey that collects all the required information with reference to individual production units. The most appropriate data source for collecting information on the total volume of agricultural production and on labour inputs on agricultural holdings are agricultural surveys. Other possible sources are household surveys with an integrated agricultural module, and agricultural censuses.

SDG Indicator 2.3.2: Average income of small-scale food producers

As for Indicator 2.3.1, small-scale food producers are defined as those falling in the bottom 40 percent of the cumulative distribution of land size, livestock heads and total on-farm revenues (with a total revenue cap of PPP USD 34 387). In line with the resolution adopted by the Seventeenth International Conference of Labour Statisticians, income is calculated as the gross on-farm income of an agricultural holding, which is defined as the operating surplus (revenues minus operating costs) and expressed in constant PPP USD.

Given that Indicator 2.3.2 is measured for a specific population of producers i.e. those considered small-scale, the ideal data source for measuring this indicator is a single survey that collects all the required information with reference to individual production units. The most appropriate data source for collecting information on the total volume of agricultural production and associated costs are agricultural surveys. Other possible sources are household surveys with an integrated agricultural module, agricultural censuses and administrative records that integrate other sources.

SDG Indicator 2.4.1: Proportion of agricultural area under productive and sustainable agriculture

This indicator is calculated as the area under productive and sustainable agriculture (assessed based on 11 subindicators covering the economic, social and environmental dimensions), divided by the

total agricultural land area (according to the World Census of Agriculture definition). The preferred data collection instrument is farm surveys, which should include a minimum set of questions needed to compute Indicator 2.4.1. To this end, FAO has prepared a sample survey questionnaire, whereas the indicator is also aligned with efforts supported by FAO to develop farm surveys as the most relevant instrument for the collection of agricultural data (see the AGRISurvey programme and the 50x2030 Initiative).

At present, very few countries have enough data to produce all 11 metrics selected to track agricultural sustainability, despite FAO's efforts to strengthen countries' capacities and improve data collection on SDG Indicator 2.4.1. To address this issue, FAO has developed a methodology to produce a provisional proxy of the indicator that, though not meant to replace SDG Indicator 2.4.1, is able to provide a good estimate of countries' progress towards sustainable and productive agriculture. The proposed proxy consists of a set of eight established measures of sustainability and productivity in agriculture that are based on widely available national statistics linked to FAO's consolidated statistical reporting processes (some of which are related to other SDG indicators). The eight chosen measures mirror, to the extent possible, the 11 subindicators of Indicator 2.4.1, maintaining a good balance between the social, economic and environmental dimensions recognized as the three pillars of sustainable development. They are based on extensive analysis carried out by FAO over the past two years, which has led to the Progress Towards Sustainable Agriculture (PROSA) analytical framework. Contrary to SDG Indicator 2.4.1, whose 11 subindicators are meant to be collected at farm level, data for the eight proxy measures are collected and analysed at the national level.

SDG Indicator 2.5.1.a: Plant genetic resources for food and agriculture

Indicator 2.5.1.a measures the total number of unique accessions of plant genetic resources with an actual or potential value for food and agriculture secured in medium- or long-term conservation facilities. The indicator provides an indirect measurement of the total genetic diversity that is secured for future use. Positive variations of the indicator are associated with an increase in secured agrobiodiversity, while negative variations are associated with a loss.

Official national focal points and managers of regional or international gene banks are requested to provide the list of accessions in medium- or long-term conservation facilities. Data are reported to and accessible from the World Information and Early Warning System (WIEWS), a platform established by FAO to facilitate information exchange and enable periodic assessments of the state of the world's plant genetic resources for food and agriculture.

SDG Indicator 2.5.1.b: Animal genetic resources for food and agriculture

Indicator 2.5.1.b measures the total number of animal genetic resources for food and agriculture secured in medium- or long-term conservation facilities. The indicator provides an indirect measurement of the total genetic diversity that is secured for future use. Positive variations of the indicator are associated with an increase in secured agrobiodiversity, while negative variations are

associated with a loss. The indicator is calculated as the number of local breeds with enough genetic material stored in gene banks to allow the recreation of a breed in case of extinction. A local breed is a breed of mammalian or avian livestock that is found only in a particular country.

National governments nominate national coordinators for the management of animal genetic resources, who provide data to FAO's Domestic Animal Diversity Information System (DAD-IS).

SDG Indicator 2.5.2: Proportion of local breeds classified as being at risk of extinction

Indicator 2.5.2 monitors the percentage of local livestock breeds with a known risk status that are classified as being at risk of extinction at a certain moment in time.

The indicator focuses on the number of live animals kept on farms or in the field (in situ, in vivo), but also includes the number of animals kept under ex situ, in vivo programmes, such as in zoos. The indicator divides breeds into three categories, according to their level of risk of extinction: not at risk, at risk and unknown. The data needed to compute Indicator 2.5.2 can be collected using livestock population surveys or breed censuses that integrate complementary data from breeders' associations. Data are reported to FAO's DAD-IS by the same national coordinators for the management of animal genetic resources as those for Indicator 2.5.1.b, nominated by their governments.

SDG Indicator 2.a.1: Agriculture orientation index for government expenditures

Indicator 2.a.1 is defined as the share of agriculture in overall government expenditure, divided by the share added by agriculture to gross domestic product (GDP). Agricultural activities are defined according to the International Standard Industrial Classification of All Economic Activities (ISIC Rev. 4) and include agriculture, forestry, fishing and hunting. The measure is a currency-free index, calculated as the ratio of two shares. An agriculture orientation index (AOI) greater than one reflects a stronger orientation towards the agriculture sector, which receives a share of government spending that is higher than its relative contribution to the economy. An AOI of less than one reflects a weaker orientation towards agriculture, while an AOI equal to one reflects neutrality in a government's orientation to the agriculture sector.

National governments are requested to compile government expenditure data according to the Government Finance Statistics (GFS) and the Classification of the Functions of Government (COFOG), and data on agriculture value added share of GDP according to the System of National Accounts (SNA). Data on government expenditure are collected from national governments using the annual Government Expenditure in Agriculture (GEA) questionnaire developed by FAO. Comparable data can also be derived from the International Monetary Fund's (IMF) database on GFS. Data on agriculture value added are obtained from the UN Statistics Division (UNSD), which provides national accounts estimates for 220 countries and territories.

SDG Indicator 2.c.1: Indicator of food price anomalies (IFPA)

Indicator 2.c.1 measures the number of price anomalies in a food commodity price series over a given period of time, where a price anomaly is defined as a weighted compound growth rate (CGR) that is greater than the historic mean CGR by one standard deviation or more. The indicator measures price anomalies for five staple cereal commodities (maize, rice, wheat, sorghum and millet), as well as officially reported general food price indices (food consumer price index or CPI). The same indicator can be used by countries to monitor any other food commodity that they consider critical and/or at risk of high price volatility.

Commodity level price data are harvested from national market information systems and national statistical agencies' websites. Food CPI data originate from the IMF and UNSD (for countries not covered by the IMF). FAO's food CPI dataset consists of a complete and consistent set of time series from January 2000 onwards.

In this edition of FAO's progress report, the progress assessment is performed on an indicator derived from SDG Indicator 2.c.1, measuring the percentage of countries in a region recording abnormally high or moderately high food prices.

SDG Indicator 5.a.1: Women's ownership of agricultural land

Indicator 5.a.1 is divided into two subindicators: (a) proportion of the total agricultural population with ownership or secure rights over agricultural land, by sex; and (b) share of women among owners or rights bearers of agricultural land, by type of tenure.

The indicator considers as owners or holders of tenure rights all individuals in a reference population (adult agricultural population) who meet at least one of these conditions: a) being listed as owners or holders on a certificate that testifies security of tenure over agricultural land; b) having the right to sell agricultural land; and c) having the right to bequeath agricultural land.

The adult agricultural population is composed of all adult individuals (over 18 years old) belonging to an agricultural household. Agricultural households are defined as households who operated land for agricultural purposes and/or raised or tended livestock during the past 12 months, regardless of the final destination of the production. It is important to note that households whose members were engaged in agriculture only through wage labour are excluded from the reference population.

Preferred data sources for computing Indicator 5.a.1 are agricultural surveys, integrated or multipurpose household surveys, population censuses and agricultural censuses. Given the limited number of surveys providing data to compute the two subindicators, FAO has started using demographic and health surveys (DHS) to compute proxies of 5.a.1. These surveys, which collect standardized information in a considerable number of countries, allow measuring self-reported (agricultural and non-agricultural) land ownership in the adult agricultural population. Using DHS

surveys, the agricultural population is represented by all individuals belonging to households where at least one member owned agricultural land or livestock, or was self-employed in agriculture, during the past 12 months. FAO's 2023 SDG Progress Report includes a proxy for Indicator 5.a.1 for Afghanistan, Albania, Armenia, Burundi, Cambodia, Cameroon, Chad, Comoros, Democratic Republic of the Congo, the Gambia, Guatemala, Haiti, Honduras, India, Kenya, Kyrgyzstan, Lesotho, Liberia, Madagascar, Mauritania, Mozambique, Myanmar, Namibia, Nepal, Pakistan, Papua New Guinea, Rwanda, Togo and Zambia.

SDG Indicator 5.a.2: Women's equal rights to agricultural land

Indicator 5.a.2 measures the extent to which a country's legal framework supports women's land rights by testing the framework against six proxies drawn from international law and internationally accepted good practices. For each country, the indicator gives values from 1 to 6, according to the number of proxies that are included in its legal framework, with a value of 1 corresponding to the absence of all proxies, and 6 indicating their full inclusion:

- Mandatory joint registration, or economic incentives for the joint registration of land;
- Spousal consent for land transactions;
- Equal rights to inherit for women and girls;
- Budgetary commitments to strengthen equal land rights for women;
- Where customary systems are in place, women's land rights are protected;
- Mandatory quotas to increase the participation of women in land institutions.

This indicator is computed based on the assessment of a country's laws by official national legal experts, who use the methodological guidelines and questionnaire developed by FAO for this purpose.

SDG Indicator 6.4.1: Change in water use efficiency over time

Indicator 6.4.1 provides a measure of water use efficiency over time. It is computed as the ratio between the value added of a given major industrial sector (according to ISIC Rev. 4) and the volume of water used by that sector (USD/m^3). Water used is defined as the water that is abstracted directly or received by an industry or by households from another industry. This is different from water abstraction or water withdrawal, which is defined as the water removed from a river, lake, reservoir or aquifer.

Data on water use are collected by national institutions and communicated to FAO using the AQUASTAT Water and Agriculture questionnaire. Data on value added for each sector are obtained from UNSD, which provides national accounts estimates for 220 countries and territories.

As few countries publish data on water use by sector on a regular basis, one of the main constraints for the computation of this indicator is the difficulty to obtain up-to-date data. Furthermore, data on

the numerator (value added) on the one hand and those on the denominator (water use) on the other may refer to different years, thus requiring imputation.

SDG Indicator 6.4.2: Level of water stress

Indicator 6.4.2 measures the level of water stress, or freshwater withdrawal as a proportion of a country's available renewable freshwater resources. This is computed as the ratio between total freshwater withdrawn by all major industrial sectors (according to ISIC Rev. 4) and total renewable freshwater resources, taking into account environmental flow requirements. Values of the indicator are assessed against five levels of severity stress: less than 25 percent (no stress), 25 to 50 percent (low stress), 50 to 75 percent (medium stress), 75 to 100 percent (high stress) and over 100 percent (critical).

Data for this indicator are usually collected by national ministries and institutions with water-related mandates, such as national statistical offices and ministries for water resources, agriculture or the environment. Official counterparts at country level are the national statistics office and/or the line ministry for water resources. FAO requests countries to nominate a national correspondent to act as focal point for data collection and communication. Data are mainly published within national statistical yearbooks, national water resources and irrigation master plans, and other reports (such as those from projects, international surveys or results and publications from national and international research centres). Data for the indicator are collected through FAO's AQUASTAT Water and Agriculture questionnaires, which are filled out by the relevant institutions in each country.

SDG Indicator 12.3.1.a: Food Loss Index (FLI)

Indicator 12.3 is divided into two subindicators covering different stages of the supply chain. Subindicator 12.3.1.a, the food loss index (FLI), focuses on food losses that occur from production up to (but not including) the retail level. This indicator measures the change in percentage losses for a basket of ten main commodities (by country) in comparison with the baseline of 2015. Meanwhile, subindicator 12.3.1.b focuses on food waste, and covers the retail and consumption levels. While indicator 12.3.1.a is under FAO's custodianship, indicator 12.3.1.b is under the custodianship of the United Nations Environment Programme.

The FLI is a composite of ten commodities, by value of production, within five commodity groups. Each country defines its own basket of commodities by selecting the two most important commodities per commodity group. The commodities in the basket are then weighted according to their economic value. Thus, the FLI covers a wide diversity of diets, while being comparable at the aggregate level.

Currently, the primary data source for the index are the estimated loss quantities in the food balance sheets collected by FAO under the annual production questionnaires it sends to countries. However, as countries usually report on only a limited number of commodities in food balance sheets, FAO

advocates the collection of nationally representative data on the top two commodities for each of the main commodity groups, based on surveys with a frequency of three to five years.

SDG Indicator 14.4.1: Proportion of fish stocks within biologically sustainable levels

Indicator 14.4.1 measures the sustainability of the world's marine capture fisheries based on their abundance. A fish stock whose abundance is at or greater than the level that can produce the maximum sustainable yield (MSY) is classified as biologically sustainable. In contrast, when abundance falls below the MSY level, the stock is considered biologically unsustainable.

MSY is defined as the greatest amount of catch that can be harvested continuously from a stock under constant and current environmental conditions (e.g. habitat, water conditions, species composition and interactions, and anything that could affect birth, growth or death rates of the stock) without affecting the long-term productivity of the stock. The indicator measures the sustainability of fish resources based on a good balance between human use and ecological conservation.

Given the highly migratory nature of many fish stocks, the indicator has hitherto been monitored at global and regional levels only. However, in 2019 FAO launched a new effort to collect national data on fish stocks that are found only within one country's exclusive economic zone. The indicator requires the development of a reference list of stocks and, for each stock included, the completion of a stock assessment that uses fish catch statistics, fishing effort data, biological information and surrogate biomass measures.

SDG Indicator 14.6.1: Combating illegal, unreported and unregulated fishing

Indicator 14.6.1 reflects the progress made by countries towards the implementation of international instruments aiming to combat illegal, unreported and unregulated (IUU) fishing. The indicator is based on the replies of countries to selected sections of the questionnaire on the implementation of the Code of Conduct for Responsible Fisheries and related instruments (CCRF). The responses to the questionnaire are converted into five scores with different associated weights, indicating the:

- Adherence and implementation of the 1982 United Nations Convention on the Law of the Sea (10%);
- Adherence and implementation of the 1995 United Nations Fish Stocks Agreement (10%);
- Development and implementation of a national plan of action to combat IUU fishing in line with the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (30%);
- Adherence to and implementation of the 2009 FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (30%);
- Implementation of flag state responsibilities in the context of the 1993 FAO Compliance Agreement and FAO Voluntary Guidelines for Flag State Performance (20%).

Depending on their responses regarding the adherence to and implementation of these instruments, countries score an indicator value between 0 and 1. Based on this score, each country is categorized into one of five levels of implementation, ranging from 1 (lowest) to 5 (highest).

SDG Indicator 14.7.1: Sustainable fisheries as a percentage of GDP

Indicator 14.7.1 measures the contribution of sustainable marine capture fishing to countries' GDP. It is computed by adjusting the value added of marine capture fishery with a sustainability multiplier that is based on an assessment of fish stock sustainability within FAO fishing areas. A country's sustainability multiplier is the average sustainability of stocks, weighted according to the share of overall marine capture in each fishing area where the country performs fishing activities. When a country fishes in only one FAO fishing area, its sustainability multiplier will be equal to the average sustainability of stocks in that area.

GDP and value added information is collected through national accounts, whereas the sustainability multiplier is currently based on the regional value of SDG Indicator 14.4.1, weighted according to the country's share in fish catch across major fishing areas. Nationally reported statistics are taken as the first component of this indicator and are used to estimate fisheries and aquaculture as a percentage of GDP. This result is then transformed into a final estimate of sustainable fisheries as a percentage of GDP, using catch data published by FAO. The latter are a combination of nationally reported data and estimates, and data on stock status published by FAO.

SDG Indicator 14.b.1: Promoting small-scale fisheries

Indicator 14.b.1 is based on responses by FAO Members to the sections of the CCRF questionnaire that cover the implementation of three key measures to promote and facilitate access rights to small-scale fisheries. Responses are converted using an algorithm into a score, with each measure having a different weight:

- Existence of instruments that specifically target or address the small-scale fisheries sector (40 percent).
- On-going specific initiatives to implement the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (SSF) (30 percent).
- Mechanisms to allow small-scale fishers and fish workers to contribute to decision-making processes (30 percent).

The score ranges from 0 to 1, based on which each country is categorized into one of five levels of implementation, ranging from the lowest (1) to the highest (5).

The indicator is based on the biennial questionnaire of the CCRF, a common, long-standing data reporting mechanism. The questionnaire is sent to all FAO Members since 1995. In 2016, a new

module was added to the questionnaire to collect information on the implementation status of the three variables on the promotion of small-scale fisheries, and produce the indicator's baseline.

SDG Indicator 15.1.1: Forest area as a proportion of total land area

Indicator 15.1.1 measures the share of forest area in total land area. Forest area is defined as land spanning more than 0.5 hectares, with trees higher than 5 m and a canopy cover of more than 10 percent, or with trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.

Data to compute Indicator 15.1.1 are collected through FAO's Global Forest Resources Assessment (FRA). All data are provided to FAO by official national focal points in the form of standardized country reports, which include the original data and reference sources, as well as descriptions of how these have been used to estimate forest area for different points in time.

SDG Indicator 15.2.1: Sustainable forest management

Indicator 15.2.1 provides a proxy of countries' progress towards sustainable forest management by means of five subindicators:

- Forest area annual net change rate (Percent);
- Above-ground biomass stock in forests, per hectare (Tonnes per hectare);
- Proportion of forest area located within legally established protected areas (Percent);
- Proportion of forest area under a long-term forest management plan (Percent);
- Forest area under an independently verified forest management certification scheme (Thousands of hectares).

Data on all five subindicators are collected every five years through FAO's FRA (with the exception of the subindicator on the proportion of forest area under a long-term management plan, which was not collected in 2015). All data are provided to FAO by official national focal points in the form of standardized country reports, which include the original data and reference sources, as well as descriptions of how these have been used to estimate forest area for different points in time.

SDG Indicator 15.4.2: (a) Mountain green cover index; and (b) Proportion of degraded mountain area

The indicator is composed of two sub-indicators to monitor progress towards the conservation of mountain ecosystems:

- Sub-indicator 15.4.2.a measures changes in the area of green vegetation in mountain areas (forest, shrubs, pastureland and cropland). The mountain green cover index (MGCI) is defined as the share of green cover area in the total surface of the mountain area of a country for a given reporting year, where the green cover area is all mountain area covered by

cropland, grassland, forest and wetland. The aim of the index is to monitor the evolution of the green cover and thus assess the conservation status of mountain ecosystems.

- Sub-indicator 15.4.2b, proportion of degraded mountain land, is designed to monitor the extent of degraded mountain land as a result of land cover change in a given country and for given reporting year. Mountain ecosystem degradation and recovery is assessed based on the definition of land cover type transitions that indicate improving, stable or degrading conservation status. The definition of degradation adopted for the computation of this indicator is the one established by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

FAO calculates the indicator using the land cover products of the European Space Agency Climate Change Initiative (ESA CCI), which have been produced using a combination of RS data such as the 300 m MERIS, 1 km SPOT-VEGETATION, 1 km PROBA-V and 1 km AVHRR. The ESA CCI products consist of a series of annual land cover maps at 300 m resolution, covering the period from 1992 to 2018. However, the data source is not prescriptive, provided that countries adhere to the methodology. FAO shares country figures with the SDG focal points in national statistical offices for validation before publication. On this same occasion, FAO requests countries to provide their own estimates for the indicator, if available.

A.1.2 Non-FAO indicators

SDG Indicator 1.4.2: Proportion of total adult population with secure tenure rights to land, (a) with legally recognized documentation, and (b) who perceive their rights to land as secure, by sex and type of tenure

Custodian agency: UN-Habitat and World Bank.
Contributing agency: FAO

Indicator 1.4.2 measures land ownership as the most the relevant component of Target 1.4 (ensure men and women have equal rights to economic resources, as well as access to …, ownership of and control over land and other forms of property, inheritance, natural resources). It is an outcome indicator that measures the results of policies aiming to strengthen tenure security for all, including women and other vulnerable groups.

It covers: (a) all types of land use (such as residential, commercial, agricultural, forestry, grazing, wetlands based on standard land-use classification) in both rural and urban areas; and (b) all land tenure types recognized at country level, such as freehold, leasehold, public land, customary land. An individual can hold land in his/her own name, jointly with other individuals, as a member of a household, or collectively as member of group[1], cooperative or other type of association. Secure tenure rights are measured through two sub-components, both necessary to provide a full measurement of tenure security: (i) legally recognized documentation; and (ii) perception of the security of tenure.

For the purpose of constructing the indicator, perceptions of rights to land are considered secure if:

- The landholder does not report a fear of involuntary loss of the land within the next five years due to, for example, intra-family, community or external threats; and
- The landholder reports having the right to bequeath the land

The data sources used to inform the indicator are census, multi-topic household surveys conducted by national statistical organizations and, depending on availability, administrative data on land tenure reported by national land institutions (in most cases land registries and cadasters).

Since this indicator and indicator 5.a.1 are interlinked, the custodian agencies of 1.4.2 and 5.a.1 have agreed to work closely with country and regional statistical agencies and global partners to support for country data collection, analysis and reporting. In particular, they have developed a joint module that can help countries to collect both indicators using the same survey instrument and a handbook that provide guidance on the implementation modalities (FAO, The World Bank & UN-Habitat, 2019). Similar capacity building support will be developed for land agencies to set up gender disaggregated electronic reporting systems.

SDG Indicator 1.5.2: Direct economic loss attributed to disasters in relation to global gross domestic product (GDP)

Custodian agency: United Nations Office for Disaster Reduction (UNISDR)
Contributing agency: FAO

This indicator measures the ratio of direct economic loss attributed to disasters in relation to GDP. Direct economic loss refers to the monetary value of total or partial destruction of physical assets existing in the affected area. The Sendai Framework for Disaster Risk Reduction 2015-2030 was adopted by UN Member States in March 2015 as a global policy agenda of disaster risk reduction. Among the global targets, "Target C: Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030" will contribute to sustainable development and strengthen economic, social, health and environmental resilience, as well as climate change adaptation.

The open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction (OIEWG) established by the General Assembly (resolution 69/284) has developed a set of indicators to measure global progress towards the implementation of the Sendai Framework, which was endorsed by the UNGA (UNDRR, 2016). The relevant global indicators for the Sendai Framework are used to report for this indicator.

Disaster loss data is greatly influenced by large-scale catastrophic events. UNISDR recommends countries report the data by event, so that complementary analysis can be undertaken to obtain trends and patterns in which such catastrophic events (that can represent outliers in terms of damage) can be included or excluded.

FAO has developed an e-learning course to support countries to generate precise and holistic data for the agricultural sector ("Introduction to FAO's damage and loss assessment methodology" (FAO, 2020). This course can be used for national Disaster Risk Reduction/Management, resilience and to help monitor the achievement of global targets.

SDG Indicator 2.b.1: Agricultural export subsidies

Custodian agency: World Trade Organization

Agricultural export subsidies are defined as budgetary outlays (direct payments, export loans, tax benefits) given to traders to cover the difference between internal market prices and world market prices and therefore to subsidize exports.

For this indicator, data are available by country and by products or groups of products. The purpose of this indicator is to give detailed information on the level of export subsidies applied annually per product or group of products, as notified by WTO Members.

An overall global indicator measuring the total annual applied export subsidies budgetary outlays is calculated by summing all the available data after having converted them into a single currency (US$).

SDG Indicator 10.a.1: Proportion of tariff lines applied to imports from least developed countries and developing countries with zero-tariff

Custodian agency: International Trade Centre (ITC), United Nations Conference on Trade and Development (UNCTAD), The World Trade Organization (WTO)

The indicator is defined as the proportion of the total number of tariff lines applied to products imported from least developed and developing countries corresponding to a 0 percent tariff rate in HS chapter 01-97.

The main information used to calculate indicators 10.a.1 is import tariff data. Information on import tariffs might be retrieved by contacting directly National statistical offices, permanent country missions to the UN, regional organizations or focal points within the customs, ministries in charge of customs revenues (Ministry of economy/finance and related revenue authorities) or, alternatively, the Ministry of trade.

The calculation of this indicator will allow observing on how many products Developing countries and LDCs will have free access to Developed countries markets. When compared to the tariff rates applied to other countries, this indicator will allow assessing to which extent special and differential treatment has been accorded in terms of import tariffs. The evolution of this indicator will indicate progress on the phasing out of tariff rates on goods imported from developing and least developed countries.

SDG Indicator 15.3.1: Proportion of land that is degraded over total land area

Custodian agency: United Nations Convention to Combat Desertification (UNCCD)
Contributing agency: FAO, Conservation International, European Space Agency, Group on Earth Observation Land Degradation Neutrality Initiative, International Soil Reference and Information Centre, International Union for Conservation of Nature, Joint Research Centre of the European Commission, United Nations Statistics Division, United Nations Development Programme, United Nations Environment, World Resources Institute, United Nations Framework Convention on Climate Change and Convention on Biological Diversity (CBD).

SDG Indicator 15.3.1 is a binary - degraded/not degraded – measure based on the analysis of available data for three sub-indicators to be validated and reported by national authorities. These sub-indicators (trends in land cover, land productivity and carbon stocks) were adopted by the UNCCD's Governing Body in 2013 as part of its monitoring and evaluation approach.

The method of computation for this indicator follows the "One Out, All Out" (1OAO) statistical principle and is based on the baseline assessment and evaluation of change in the sub-indicators to determine the extent of land that is degraded over total land area.

The 1OAO principle is applied taking into account changes in the sub-indicators which are depicted as (i) positive or improving; (ii) negative or declining; or (iii) stable or unchanging. If one of the sub-indicators is negative (or stable when degraded in the baseline or previous monitoring year) for a particular land unit, then the unit would be considered as degraded subject to validation by national authorities.

National data on the three sub-indicators is collected through existing sources (e.g., databases, maps, reports), including participatory inventories on land management systems as well as remote sensing data collected at the national level. Datasets that complement and support existing national indicators, data and information are likely to come from multiple sources, including statistics and estimated data for administrative or national boundaries, ground measurements, earth observation and geospatial information.

SDG Indicator 15.6.1: Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits

Custodian agency: Convention on Biological Diversity.
Contributing agency: FAO, International Treaty on Plant Genetic Resources for Food and Agriculture.

This indicator is defined as the number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits. It refers to the efforts by countries to implement the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity (2010), and the International Treaty on Plant Genetic Resources for Food and Agriculture (2001).

The International Treaty on Plant Genetic Resources for Food and Agriculture stipulates that contracting parties ensure the conformity of their laws, regulations and procedures with their obligations under the International Treaty (Article 4). Under the Multilateral System of Access and Benefit-Sharing (Articles 10 to 13), countries grant each other facilitated access to their plant genetic resources, while users of plant genetic material from the multilateral system are encouraged to share their benefits with this system. Such benefits should primarily flow to farmers in developing countries who promote the conservation and sustainable use of plant genetic resources. Pursuant to Article 21, the Governing Body has adopted procedures and operational mechanism to promote compliance and address issues of non-compliance. The monitoring and reporting procedures request each contracting party to submit a report on the measures it has taken to implement its obligations under the Treaty, including access and benefit-sharing measures. Contracting parties report using a standard format and through the Online Reporting System on Compliance. Additionally, information

on the number of standard material transfer agreements is gathered from the data store of the Treaty through Easy-SMTA. The SMTA is a mandatory contract that contracting parties of the Treaty have agreed to use whenever plant genetic resources falling under the multilateral system are made available.

Annex A.2 – Methods to assess the current status and trend of SDG indicators

Monitoring the implementation of the 2030 Agenda is a cornerstone in the global SDG framework. It enables the assessment of whether the established SDG targets will be achieved or not, and at which level (global, regional or national), by the end of 2030 (Gennari and D'Orazio, 2020). To do so, two distinct measurement objectives should be addressed:

- (i) monitoring the level of achievement of an SDG target, i.e. assessing the current status of an indicator as described by the latest available data; and
- (ii) assessing whether the target can be achieved by 2030, i.e. measuring and/or forecasting progress over time.

The following sections discuss the statistical approaches adopted by FAO to implement these two components of progress assessment at indicator level. Section A.2.1 discusses the method used for evaluating the current status of achievement of SDG targets. Section A.2.2 presents the indicator-level trend assessment methodology. Section A.2.3 provides indicator-specific fiches, with details on the specific combination of methods used in view of the characteristics of each indicator (normative direction, nature of indicator, existence of a numerical yardstick).

A.2.1 Methods for current status assessment at indicator level

Indicators with a numerical target

The assessment of the level of achievement of an SDG indicator consists in measuring how close its latest available value is to the ideal value. When this ideal value is explicitly set in the formulation of the relevant target, the current status is assessed measuring the normalized difference between the indicator value for a given country i in year t (x_{it}) to its target value in the same country x_i^*. It should be noted that, in the case of absolute numerical targets i.e. when all countries in the world should achieve the same aspirational value of the indicator by the end of 2030, $x_i^* = x^* \; \forall \; i$. In symbols, the normalized distance can be expressed as:

$$d_{it} = \begin{cases} \dfrac{x_i^* - x_{it}}{d_{max}} = \dfrac{x_i^* - x_{it}}{x_i^* - x^{(w)}} \; when\; normative\; direction = increase\; over\; time \\ \dfrac{x_{it} - x_i^*}{dmax} = \dfrac{x_{it} - x_i^*}{x^{(w)} - x_i^*} \; when\; normative\; direction = decrease\; over\; time \end{cases}$$

where $x^{(w)}$ is the indicator value producing the maximum theoretical distance from the target.

For indicators expressed as proportions i.e. indicators with theoretical values ranging between 0 and 1, this is equivalent to computing a simple distance measure, in symbols:

$$d_{it} = \begin{cases} x_i^* - x_{it}\; when\; normative\; direction = increase\; over\; time \\ x_{it} - x_i^*\; when\; normative\; direction = decrease\; over\; time \end{cases}$$

Both expressions take the value 0 for indicators having already reached the target at the time of the assessment.

Analogously, the distance of a generic region g from the target in year t can be measured as:

$$d_{gt} = \begin{cases} \dfrac{x_g^* - x_{gt}}{d_{max}} = \dfrac{x_g^* - x_{gt}}{x_g^* - x^{(w)}} \; when\; normative\; direction = increase\; over\; time \\ \dfrac{x_{gt} - x_g^*}{dmax} = \dfrac{x_{gt} - x_g^*}{x^{(w)} - x_g^*} \; when\; normative\; direction = decrease\; over\; time \end{cases}$$

for indicators expressed as counts, totals, means or scores, and as

$$d_{gt} = \begin{cases} x_g^* - x_{gt}\; when\; normative\; direction = increase\; over\; time \\ x_{gt} - x_g^*\; when\; normative\; direction = decrease\; over\; time \end{cases}$$

for indicators expressed as proportions.

According to values obtained for d_{vt} ($v = i$ for countries, and $v = g$ for regions), countries and regions are classified according to the following categories:

Symbol	Meaning	General outcome
+++	Target already met	Optimal
++	Close to the target	Very positive
+	Moderate distance to the target	Positive
-	Far from the target	Negative
--	Very far from the target	Very negative

Indicators without a numerical target

In the case of indicators without a numerical target, the distance to the target cannot be calculated. However, for analytical purposes, it is useful to provide a summary picture that describes the current worldwide distribution of the indicator. For this reason, FAO's Progress Assessment associates each country with its corresponding quintile. Quintiles divide the entire distribution of countries into five equal groups, according to their indicator value: the first quintile contains the bottom fifth of countries on the indicator scale (i.e. the first 20 percent of countries with the lowest value), the second quintile represents the second fifth (from 20 to 40 percent) and so on, with the fifth quintile representing the top 20 percent countries with the highest values. Quintiles are calculated at country level only. Regions and the world are treated as "average countries" and assigned to the corresponding quintile. The following labels can be used to interpret results:

1) **At the Global level for indicators with an increasing normative direction:**

$q_{80\%} < x_{it} \leq q_{100\%}$	Not applicable
$q_{60\%} < x_{it} \leq q_{80\%}$	Above median of country values
$q_{40\%} < x_{it} \leq q_{60\%}$	At median of country values
$q_{20\%} < x_{it} \leq q_{40\%}$	Below median of country values
$q_{0\%} \leq x_{it} \leq q_{20\%}$	Not applicable

2) **At the Global level for indicators with a decreasing normative direction:**

$q_{0\%} \leq x_{it} \leq q_{20\%}$	Not applicable
$q_{20\%} < x_{it} \leq q_{40\%}$	Above median of country values
$q_{40\%} < x_{it} \leq q_{60\%}$	At median of country values
$q_{60\%} < x_{it} \leq q_{80\%}$	Below median of country values
$q_{80\%} < x_{it} \leq q_{100\%}$	Not applicable

3) At the regional and country level with an increasing normative direction

$q_{80\%} < x_{it} \leq q_{100\%}$	Best performers
$q_{60\%} < x_{it} \leq q_{80\%}$	Above median performers
$q_{40\%} < x_{it} \leq q_{60\%}$	Median performers
$q_{20\%} < x_{it} \leq q_{40\%}$	Below median performers
$q_{0\%} \leq x_{it} \leq q_{20\%}$	Worst performers

4) At the regional and country level with a decreasing normative direction

$q_{0\%} \leq x_{it} \leq q_{20\%}$	Best performers
$q_{20\%} < x_{it} \leq q_{40\%}$	Above median performers
$q_{40\%} < x_{it} \leq q_{60\%}$	Median performers
$q_{60\%} < x_{it} \leq q_{80\%}$	Below median performers
$q_{80\%} < x_{it} \leq q_{100\%}$	Worst performers

A.2.2 – Methods for trend assessment at indicator level

Indicators with a numerical target

A simple method for assessing the trend of numerical indicators having a numerical target consists in comparing the actual growth of an indicator with the growth required to reach the target.

Under this approach, the FAO progress assessment methodology assumes geometric growth over time, which allows deriving the following two mathematical expressions:

Actual growth: (setting t_0 as baseline year)

$$CAGR_a = \left(\frac{x_{it}}{x_{it_0}}\right)^{\frac{1}{t-t_0}} - 1$$

Required growth:

$$CAGR_r = \left(\frac{x_i^*}{x_{it_0}}\right)^{\frac{1}{2030-t_0}} - 1$$

where x_{it} and x_i^* (with $x_i^* = x^*$ for absolute targets) are defined as in the previous section, and x_{i0} indicates the value of an SDG indicator in the baseline year t_0

When the SDG target is 0 ($x^* = 0$), it is necessary to replace x^* with a value very close to it, but strictly greater than 0, to obtain a meaningful estimate of $CAGRr$. This is justified also on theoretical grounds, given the measurement errors associated with the SDG indicator estimation process.

The ratio between the actual and required annual compound growth rate is then used for the assessment.

Ratio actual vs. required:

$$CR = \frac{CAGR_a}{CAGR_r}$$

Indicators expressed as scores require an ad-hoc procedure which consists in categorizing all the possible combinations of the latest and baseline values taken by the score. More details are provided in the indicator-specific fiches presented in Annex A.2.3.

Indicators without a numerical target

In the case of indicators without a numerical target, only the actual growth since the baseline year can be assessed:

$$CAGR_a = \left(\frac{x_{it}}{x_{it_0}}\right)^{\frac{1}{t-t_0}} - 1$$

Different criteria can be used to assess the $CAGRa$, depending on the sign of the normative direction. For some indicators, an unchanged situation over time can be judged positively.

Legend and interpretation of symbols related to trend assessment

Symbol	Meaning	General outcome	Note
TAM	Target already met	Positive	ONLY for indicators having a numerical target explicitly defined by the 2030 Agenda.
>>	Significant improvement	Positive	
>	Slight improvement	Positive	
>=	Slight or no improvement	Positive	Needed only for indicators where the no-change over time is a positive outcome (normative direction of the indicator is "NO increase" or "NO decrease" over time; the target of the indicator include terms like "maintain").
=	No improvement (stagnation)	Negative	
<	Slight deterioration	Negative	
<<	Significant deterioration	Negative	

A.2.3 – Indicator-specific methodologies

SDG 2.1.1

Target value: 0 percent (operationalized with a target of 2.5 percent to account for measurement errors and allow the CR computation).

Normative direction: decrease

Last available data refer to 2022 for regions, 2021 for countries (three-year average 2020–2022).

Assessment of the current status (last available data): simple distance from the target (x^*).

Criteria for assessing the current distance from the target

Bounds	Group	Symbol
$d_{it} = 0$	$PoU \leq 2.5$	+++
$0 < d_{it} \leq 0.05$	Close to the target	++
$0.05 < d_{it} \leq 0.10$	Moderate distance to the target	+
$0.10 < d_{it} \leq 0.25$	Far from the target	-
$d_{it} > 0.25$	Very far from the target	--

Assessment of the trend from 2015 (baseline year): actual growth compared to the required growth to reach the target (CR).

Criteria for assessing the trend by comparing actual with required growth

Level or ratio CR	Colour	Assessment category
$x \leq x^*$	Dark green	$PoU \leq 2.5$
$CR \geq 0.95$	Green	On-track to achieve the target (>>)
$0.10 < CR < 0.95$	Yellow	On-path, but too slow to achieve the target (>)
$-0.10 \leq CR \leq 0.10$	Orange	No improvement (stagnation) since baseline (=)
$CR < -0.10$	Red	Deterioration/movement away from the target (<<)

SDG 2.1.2

Target value: 0 percent (operationalized with a target of 5 percent to account for measurement errors and allow the CR computation).

Normative direction: decrease.

Last available data refer to 2022 for regions, 2021 for most countries (three-year average 2020–2022).

Assessment of the current status (last available data): simple distance from the target (x^*).

Criteria for assessing the current distance from the target

Bounds	Group	Symbol
$d_{it} \leq 0$	Target already met	+++
$0 < d_{it} \leq 0.05$	Close to the target	++
$0.05 < d_{it} \leq 0.10$	Moderate distance to the target	+
$0.10 < d_{it} \leq 0.25$	Far from the target	-
$d_{it} > 0.25$	Very far from the target	--

Assessment of the trend from 2015 (baseline year): actual growth compared to the required growth to reach the target (CR).

Criteria for assessing the trend by comparing actual with required growth

Level or ratio CR	Colour	Assessment category
$x \leq x^*$	Dark green	Target already met (TAM)
$CR \geq 0.95$	Green	On-track to achieve the target (>>)
$0.10 < CR < 0.95$	Yellow	On-path, but too slow to achieve the target (>)
$-0.10 \leq CR \leq 0.10$	Orange	No improvement (stagnation) since baseline (=)
$CR < -0.10$	Red	Deterioration/movement away from the target (<<)

SDG 2.3.1

Target value: double the value of the baseline year (relative target).

Normative direction: increase

Last available data referred to different years in different countries (sparse data).

Assessment of the current status (last available data): normalized distance to the target (x_i^*)

Criteria for assessing the current distance from the target

Bounds	Group	Symbol
$d_{it} \leq 0$	Target already met	+++
$0 < d_{it} \leq 0.20$	Close to the target	++
$0.20 < d_{it} \leq 0.40$	Moderate distance to the target	+
$0.40 < d_{it} \leq 0.60$	Far from the target	-
$d_{it} > 0.60$	Very far from the target	--

Assessment of the trend from baseline year: actual growth compared to the required growth to reach the target (CR).

Criteria for assessing the trend by comparing actual with required growth

Level or ratio CR	Colour	Assessment category
$x \geq x^*$	Dark green	Target already met (TAM)
$CR \geq 0.95$	Green	On-track to achieve the target (>>)
$0.10 < CR < 0.95$	Yellow	On-path, but too slow to achieve the target (>)
$-0.10 \leq CR \leq 0.10$	Orange	No improvement (stagnation) since baseline (=)
$CR < -0.10$	Red	Deterioration/movement away from the target (<<)

SDG 2.5.1.a

Target value: n.a.

Normative direction: no decrease

Last available data refer to 2021

Assessment of the current status (last available data): quintiles of the distribution of country values (no assessment at regional and global level).

Assessment of trend from 2016 (baseline year): actual growth (compound annual growth rate or $CAGR_a$).

Criteria for assessing the actual growth ($CAGR_a$)

Values of actual growth rate	Colour	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$-0.005 \leq CAGR_a \leq 0.01$	Green	Slight or no-improvement since baseline-year (>=)
$-0.01 \leq CAGR_a < -0.005$	Orange	Slight deterioration since baseline-year (<)
$CAGR_a < -0.01$	Red	Deterioration since baseline-year (<<)

SDG 2.5.1.b

Target value: n.a.

Normative direction: no decrease.

Last available data refer to 2023

Assessment of the current status (last available data): quintiles of the distribution of country values (no assessment at regional and global levels). The assessment was not performed due to the flat distribution of the indicator, which does not allow to identify quintiles.

Assessment of trend from 2020[11] (baseline year): actual growth ($CAGR_a$).

Criteria for assessing the actual growth ($CAGR_a$)

Values of actual growth rate	Colour	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$-0.005 \leq CAGR_a \leq 0.01$	Green	Slight or no-improvement since baseline-year (>=)
$-0.01 \leq CAGR_a < -0.005$	Orange	Slight deterioration since baseline-year (<)
$CAGR_a < -0.01$	Red	Deterioration since baseline-year (<<)

[11] Most countries included in the assessment reported the indicator for the first time in 2020.

SDG 2.5.2

Target value: n.a.

Normative direction: no increase.

Last available data refer to 2023.

Assessment of the current status (last available data): quintiles of the distribution of country values. Regions and the world are treated as "average countries" and assigned to the corresponding quintile.

Assessment of trend from 2015 (baseline year): actual growth ($CAGR_a$). Assessment at global level was not conducted due to insufficient data.

Criteria for assessing the actual growth ($CAGR_a$)

Values of actual growth rate	Colour	Assessment category
$CAGR_a < -0.01$	Dark green	Improvement since baseline-year (>)
$-0.01 \leq CAGR_a \leq 0.005$	Green	Slight or no-improvement since baseline-year (>=)
$0.005 < CAGR_a \leq 0.01$	Orange	Slight deterioration since baseline-year (<)
$CAGR_a > 0.01$	Red	Deterioration since baseline-year (<<)

SDG 2.a.1

Target value: n.a.

Normative direction: increase.

Last available data refer to 2021.

Assessment of the current status (last available data): quintiles of the distribution of country values. Regions and the world are treated as "average countries" and assigned to the corresponding quintile.

Assessment of trend from 2015 (baseline year): actual growth ($CAGR_a$).

Criteria for assessing the actual growth ($CAGR_a$)

Values of actual growth rate	Colour	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$0.005 < CAGR_a \leq 0.01$	Green	Slight improvement since baseline-year (>)
$-0.005 \leq CAGR_a \leq 0.005$	Yellow	No improvement since baseline-year (=)
$-0.01 \leq CAGR_a < -0.005$	Orange	Slight deterioration since baseline-year (<)
$CAGR_a < -0.01$	Red	Deterioration since baseline-year (<<)

SDG 2.c.1

Indicator considered for progress assessment: Proportion of countries recording abnormally high or moderately high food prices, according to the SDG Indicator 2.c.1 on food price anomalies.

Target value: 0 (operationalized with a target of 1 percent to allow the CR computation)

Normative direction: decrease.

Last available data refer to 2021.

Assessment of the current status (last available data): simple distance from the target (x^*) computed on regional aggregates.

Criteria for assessing the current distance from the target

Bounds	Group	Symbol
$d_{it} \leq 0$	Target already met	+++
$0 < d_{it} \leq 0.05$	Close to the target	++
$0.05 < d_{it} \leq 0.10$	Moderate distance to the target	+
$0.10 < d_{it} \leq 0.25$	Far from the target	-
$d_{it} > 0.25$	Very far from the target	--

Assessment of the trend from 2015 (baseline year): actual growth compared to the required growth to reach the target (CR) based on regional aggregates.

Criteria for assessing the trend by comparing actual with required growth

Level or ratio CR	Colour	Assessment category
$x \leq x^*$	Dark green	Target already met (TAM)
$CR \geq 0.95$	Green	On-track to achieve the target (>>)
$0.10 < CR < 0.95$	Yellow	On-path, but too slow to achieve the target (>)
$-0.10 \leq CR \leq 0.10$	Orange	No improvement (stagnation) since baseline (=)
$CR < -0.10$	Red	Deterioration/movement away from the target (<<)

SDG 6.4.1

Target value: n.a.

Normative direction: increase

Last available data refer to 2020

Assessment of the current status (last available data): quintiles of the distribution of country values. Regions and the world are treated as "average countries" and assigned to the corresponding quintile.

Assessment of the trend from 2015 (baseline year): actual growth ($CAGR_a$).

Criteria for assessing the actual growth ($CAGR_a$)

Values of actual growth rate	Colour	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$0.005 < CAGR_a \leq 0.01$	Green	Slight improvement since baseline-year (>)
$-0.005 \leq CAGR_a \leq 0.005$	Yellow	No improvement since baseline-year (=)
$-0.01 \leq CAGR_a < -0.005$	Orange	Slight deterioration since baseline-year (<)
$CAGR_a < -0.01$	Red	Deterioration since baseline-year (<<)

SDG 6.4.2

Target value: n.a.

Normative direction: decrease if indicator value >25%.

Last available data refer to 2020

Assessment of the current status (last available data): quintiles of the distribution of country values. Regions and the world are treated as "average countries" and assigned to the corresponding quintile.

Assessment of the trend from 2015 (baseline year): actual growth ($CAGR_a$).

Criteria for assessing the actual growth ($CAGR_a$)

Values of actual growth rate	Colour	Assessment category
$CAGR_a < -0.01$	Dark green	Improvement since baseline-year (>>)
$-0.01 \leq CAGR_a < -0.005$	Green	Slight improvement since baseline-year (>)
$-0.005 \leq CAGR_a \leq 0.005$	Yellow	No improvement since baseline-year (=)
$0.005 < CAGR_a \leq 0.01$	Orange	Slight deterioration since baseline-year (<)
$CAGR_a > 0.01$	Red	Deterioration since baseline-year (<<)

SDG 12.3.1.a

Target value: n.a.

Normative direction: decrease

Last available data refer to 2021

Assessment of the current status (last available data): not performed, country level data available only for a few countries.

Assessment of the trend from 2016 (baseline year): actual growth ($CAGR_a$) for regions and the world. Country level data not available.

Criteria for assessing the actual growth ($CAGR_a$)

Values of actual growth rate	Colour	Assessment category
$CAGR_a < -0.01$	Dark green	Improvement since baseline-year (>>)
$-0.01 \leq CAGR_a < -0.005$	Green	Slight improvement since baseline-year (>)
$-0.005 \leq CAGR_a \leq 0.005$	Yellow	No improvement since baseline-year (=)
$0.005 < CAGR_a \leq 0.01$	Orange	Slight deterioration since baseline-year (<)
$CAGR_a > 0.01$	Red	Deterioration since baseline-year (<<)

SDG 14.4.1

Target value: 100 percent (operationalized with a target of 95 percent to account for measurement errors).

Normative direction: increase

Last available data refer to 2019

Assessment of the current status (last available data): distance to the target (x^*). Data available only at global level and for marine zones.

Criteria for assessing the current distance from the target

Bounds	Group	Symbol
$d_{it} \leq 0$	Target already met	+++
$0 < d_{it} \leq 0.10$	Close to the target	++
$0.10 < d_{it} \leq 0.20$	Moderate distance to the target	+
$0.20 < d_{it} \leq 0.30$	Far from the target	-
$d_{it} > 0.30$	Very far from the target	--

Assessment of the trend from 2015 (baseline year): actual growth compared to the required growth to reach the target (CR). Data available only at global level and for marine zones.

Criteria for assessing the trend by comparing actual with required growth

Level or ratio CR	Colour	Assessment category
$x \geq x^*$	Dark green	Target already met (TAM)
$CR \geq 0.95$	Green	On-track to achieve the target (>>)
$0.10 < CR < 0.95$	Yellow	On-path, but too slow to achieve the target (>)
$-0.10 \leq CR \leq 0.10$	Orange	No improvement (stagnation) since baseline (=)
$CR < -0.10$	Red	Deterioration/movement away from the target (<<)

SDG 14.6.1

Target value: 5 (maximum value of the score).

Normative direction: increase

Last available data refer to 2022

Assessment of the current status (last available data): normalized distance to the target ($x^* = 5$).

Criteria for judging the current distance from the target

Bounds	Group	Symbol
$d_{it} = 0$	Target already met	+++
$d_{it} = 0.25$	Close to the target	++
$d_{it} = 0.5$	Moderate distance to the target	+
$d_{it} = 0.75$	Far from the target	
$d_{it} = 1$	Very far from the target	--

Assessment of the trend from 2018 (baseline year): comparison of scores.

Criteria for assessing the trend by comparing the latest score with the previous score

Rule	Colour	Assessment category
Baseline=1 to 5 AND Latest=5	Dark green	Target already met (TAM)
(Latest-Baseline) ≥ 2 AND Latest<5	Green	Improvement (>>)
(Latest-Baseline)=1 AND Latest<5	Yellow	Slight improvement (>)
Baseline=Latest (both NOT equal to 5)	Orange	No improvement (stagnation) since baseline (=)
Latest<Baseline	Red	Deterioration/movement away from the target (<<)

SDG 14.7.1

Target value: n.a.

Normative direction: increase

Last available data refer to 2019

Assessment of the current status (last available data): quintiles of the distribution of country values. Regions and the world are treated as "average countries" and assigned to the corresponding quintile.

Assessment of the trend from 2015 (baseline year): actual growth ($CAGR_a$).

Criteria for assessing the actual growth ($CAGR_a$)

Values of actual growth rate	Colour	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>)
$0.005 < CAGR_a \leq 0.01$	Green	Slight improvement since baseline-year (>)
$-0.005 \leq CAGR_a \leq 0.005$	Yellow	No improvement since baseline-year (=)
$-0.01 \leq CAGR_a < -0.005$	Orange	Slight deterioration since baseline-year (<)
$CAGR_a < -0.01$	Red	Deterioration since baseline-year (<<)

SDG 14.b.1

Target value: 5 (maximum value of the score).

Normative direction: increase

Last available data refer to 2022

Assessment of the current status (last available data): normalized distance to the target ($x^* = 5$).

Criteria for judging the current distance from the target

Bounds	Group	Symbol
$d_{it} = 0$	Target already met	+++
$d_{it} = 0.25$	Close to the target	++
$d_{it} = 0.5$	Moderate distance to the target	+
$d_{it} = 0.75$	Far from the target	-
$d_{it} = 1$	Very far from the target	--

Assessment of the trend from 2018 (baseline year): comparison of scores.

Criteria for assessing the trend by comparing the latest score with the previous score

Rule	Colour	Assessment category
Baseline=1 to 5 AND Latest=5	Dark green	Target already met (TAM)
(Latest-Baseline)≥2 AND Latest<5	Green	Improvement (>>)
(Latest-Baseline)=1 AND Latest<5	Yellow	Slight improvement (>)
Baseline=Latest (both NOT equal to 5)	Orange	No improvement (stagnation) since baseline (=)
Latest<Baseline	Red	Deterioration/movement away from the target (<<)

SDG 15.1.1

Target value: n.a.

Normative direction: no decrease

Last available data refer to 2020

Assessment of the current status (last available data): quintiles of the distribution of country values. Regions and the world are treated as "average countries" and assigned to the corresponding quintile.

Assessment of the trend from 2015 (baseline year): actual growth ($CAGR_a$).

Criteria for assessing the actual growth ($CAGR_a$)

Values of actual growth rate	Colour	Assessment category
$CAGR_a > 0.001$	Dark green	Improvement since baseline-year (>>)
$-0.0005 \leq CAGR_a \leq 0.001$	Green	Slight or no-improvement since baseline-year (>=)
$-0.001 \leq CAGR_a < -0.0005$	Orange	Slight deterioration since baseline-year (<)
$CAGR_a < -0.001$	Red	Deterioration since baseline-year (<<)

SDG 15.2.1

SDG Indicator 15.2.1 measures "Progress towards sustainable forest management" through five sub-indicators:

- forest area annual net change rate (percent);
- above-ground biomass stock in forests, per hectare (tonnes per hectare);
- proportion of forest area located within legally established protected areas (percent);
- proportion of forest area under a long-term forest management plan (percent); and
- forest area under an independently verified forest management certification scheme (thousands of hectares).

Starting from these five metrics, a dashboard of traffic lights is used, with green, yellow, and red indicating the direction and rate of change in each of the sub indicators at the regional level. Thus, the indicator methodology embeds a progress assessment approach that is not wholly in line with the methodology proposed by FAO to assess progress in the 21 SDG indicators under its custodianship. In order to avoid confusing messages and inconsistencies, the analysis of the current status and trend of this SDG indicator is not included in the FAO SDG Progress Report.

SDG 15.3.1

Target value: 0 percent (operationalized with a target of 1 percent to account for measurement errors and allow the CR computation).

Normative direction: decrease

Last available data refer to 2019

Assessment of the current status (last available data): distance to the target (x^*).

Criteria for assessing the current distance from the target

Bounds	Group	Symbol
$d_{it} \leq 0$	Target already met	+++
$0 < d_{it} \leq 0.10$	Close to the target	++
$0.10 < d_{it} \leq 0.20$	Moderate distance to the target	+
$0.20 < d_{it} \leq 0.30$	Far from the target	-
$d_{it} > 0.30$	Very far from the target	--

Assessment of the trend from 2015 (baseline year): actual growth compared to the required growth to reach the target (CR).

Criteria for assessing the trend by comparing actual with required growth

Level or ratio CR	Colour	Assessment category
$x \leq x^*$	Dark green	Target already met (TAM)
$CR \geq 0.95$	Green	On-track to achieve the target (>>)
$0.10 < CR < 0.95$	Yellow	On-path, but too slow to achieve the target (>)
$-0.10 \leq CR \leq 0.10$	Orange	No improvement (stagnation) since baseline (=)
$CR < -0.10$	Red	Deterioration/movement away from the target (<<)

SDG 15.4.2.a

Target value: n.a.

Normative direction: no decrease

Last available data refer to 2018

Assessment of the current status (last available data): quintiles of the distribution of country values. Regions and the world are treated as "average countries" and assigned to the corresponding quintile.

Assessment of the trend from 2015 (baseline year): actual growth ($CAGR_a$).

Criteria for assessing the actual growth ($CAGR_a$)

Values of actual growth rate	Colour	Assessment category
$CAGR_a > 0.001$	Dark green	Improvement since baseline-year (>>)
$-0.0005 \leq CAGR_a \leq 0.001$	Green	Slight or no-improvement since baseline-year (>=)
$-0.001 \leq CAGR_a < -0.0005$	Orange	Slight deterioration since baseline-year (<)
$CAGR_a < -0.001$	Red	Deterioration since baseline-year (<<)

SDG 15.4.2.b

Target value: 0 percent (operationalized with a target of 1 percent to account for measurement errors and allow the CR computation).

Normative direction: decrease

Last available data refer to 2018

Assessment of the current status (last available data): simple distance from the target (x^*).

Criteria for assessing the current distance from the target

Bounds	Group	Symbol
$d_{it} \leq 0$	Target already met	+++
$0 < d_{it} \leq 0.05$	Close to the target	++
$0.05 < d_{it} \leq 0.10$	Moderate distance to the target	+
$0.10 < d_{it} \leq 0.15$	Far from the target	-
$d_{it} > 0.15$	Very far from the target	--

Assessment of the trend from 2015 (baseline year): actual growth compared to the required growth to reach the target (CR).

Criteria for assessing the trend by comparing actual with required growth

Level or ratio CR	Colour	Assessment category
$x \leq x^*$	Dark green	Target already met (TAM)
$CR \geq 0.95$	Green	On-track to achieve the target (>>)
$0.10 < CR < 0.95$	Yellow	On-path, but too slow to achieve the target (>)
$-0.10 \leq CR \leq 0.10$	Orange	No improvement (stagnation) since baseline (=)
$CR < -0.10$	Red	Deterioration/movement away from the target (<<)

SDG 15.6.1

Indicator 15.6.1 is monitored by three subindicators.

I1: Countries that have legislative, administrative and policy framework or measures reported through the Online Reporting System on Compliance of the International Treaty on Plant Genetic Resources for Food and Agriculture.

Target value: n.a.

Normative direction: no decrease

Last available data refer to 2022

Assessment of the current status (last available data): not performed due to methodological reasons.

Assessment of the trend from 2016 (baseline year): actual growth ($CAGR_a$) (only at regional and global levels considering the number of countries that possess the attribute within the geographical aggregate, no assessment at country level).

Criteria for assessing the trend by comparing actual with required growth

Values of actual growth rate	Colour	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$-0.005 \leq CAGR_a \leq 0.01$	Green	Slight or no-improvement since baseline-year (>=)
$-0.01 \leq CAGR_a < -0.005$	Orange	Slight deterioration since baseline-year (<)
$CAGR_a < -0.01$	Red	Deterioration since baseline-year (<<)

I2: Countries that are contracting parties to the International Treaty on Plant Genetic Resources for Food and Agriculture.

Target value: n.a.

Normative direction: no decrease

Last available data refer to 2022

Assessment of the current status (last available data): not performed due to methodological reasons.

Assessment of the trend from 2015 (baseline year): actual growth ($CAGR_a$) (only at regional and global levels considering the number of countries that possess the attribute within the geographical aggregate, no assessment at country level).

Criteria for assessing the trend by comparing actual with required growth

Values of actual growth rate	Colour	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$-0.005 \leq CAGR_a \leq 0.01$	Green	Slight or no-improvement since baseline-year (>=)
$-0.01 \leq CAGR_a < -0.005$	Orange	Slight deterioration since baseline-year (<)
$CAGR_a < -0.01$	Red	Deterioration since baseline-year (<<)

I3: Total reported number of standard material transfer agreements transferring plant genetic resources for food and agriculture to the country (number).

Target value: n.a.

Normative direction: no decrease

Last available data refer to 2022

Assessment of the current status (last available data): quintiles of the distribution of country values (no assessment at regional and global levels). The assessment was not performed due to the flat distribution of the indicator, which does not allow to identify quintiles.

Assessment of the trend from 2015 (baseline year): actual growth ($CAGR_a$).

Criteria for assessing the actual growth ($CAGR_a$)

Values of actual growth rate	Colour	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$-0.005 \leq CAGR_a \leq 0.01$	Green	Slight or no-improvement since baseline-year (>=)
$-0.01 \leq CAGR_a < -0.005$	Orange	Slight deterioration since baseline-year (<)
$CAGR_a < -0.01$	Red	Deterioration since baseline-year (<<)

Source: Gennari P. & D'Orazio M. 2020. A statistical approach for assessing progress towards the SDG targets. *Statistical Journal of the IAOS*, 36: 1129–1142. Doi: 10.3233/sji-200688

Annex A.3. Methodology for current status and trend assessment at target and goal level

Currently there is no internationally agreed method for producing an assessment at the levels of Sustainable Development Goals (SDGs) and targets. To fill this gap, FAO has proposed a simple method for producing a goal-level assessment that can be summarized as follows:

- the trend and current status assessment is implemented for all indicators under a given target (as described in Annex A.2);
- then, the estimated progress values are inserted into a scoring function that linearly normalizes the values of the current status and trend on a continuous scale from 0 to 4.
- for targets monitored by more than one indicator, the single scores are averaged into target-level scores. Finally, the scores for all targets under a given goal are summarized through the arithmetic mean, yielding an overall goal-level assessment.

A.3.1 Method for trend assessment at target and goal level

In this case too, the implementation of the approach starts from the distinction of indicators underpinning targets with and without a numerical yardstick.

Indicators with a numerical target

As seen in Annex A.2, for SDG indicators with a fixed numerical target, the trend is assessed by comparing the actual growth since the baseline year, with the growth that would be required to achieve the target by 2030. Assuming a geometrical growth over time, the compound ratio (CR) for a given indicator is categorized into one of the six classes reported in the first two columns of Table A.3.1. It should be noted that the boundaries of CR intervals reported in the first column of the table are indicator specific. Table A.3.1 presents the intervals used for assessing the trends of Indicators 2.1.1 and 2.1.2 as an example.

Table A.3.1. CR thresholds and categories and corresponding linearized scores

Level or ratio CR	Colour	Assessment category	Score
$x_{i,t} = x_i^*$	Dark green	Target already met (TAM)	4
$CR \geq 0.95$	Green	On-track to achieve the target (>>)	[3–4)
$0.10 < CR < 0.95$	Yellow	On-path, but too slow to achieve the target (>)	(2–3)
$-0.10 \leq CR \leq 0.10$	Orange	No improvement (stagnation) since baseline (=)	[1–2]
$CR < -0.10$	Red	Deterioration/movement away from the target (<<)	[0–1)

Then, in order to produce the input to assess the trend at target and goal level, the CR is linearly rescaled into a range from 0 to 4 using the following min/max approach:

$$CR_{Score} = \frac{(max_s - min_s)}{(max_{CR} - min_{CR})} * (CR - min_{CR}) + min_s$$

where:

- min_{CR} and max_{CR} are respectively the minimum and the maximum values of the CR delimiting the corresponding assessment interval. For example, for a CR equal to 0.6, $min_{CR} = 0.1$ and $max_{CR} = 0.95$. Given that the CR can potentially take any value in the real scale, in the light green class (indicator value on track to achieve the target) max_{CR} is operationally set equal to 1.50. Analogously, in the red class (indicator value indicating deterioration from the target), min_{CR} is operationally set equal to –0.5.
- min_s and max_s are respectively the minimum and the maximum value of the score delimiting the corresponding assessment interval for the CR. For example, for a CR equal to 0.6, $min_s = 2$ and $max_s = 3$.

Indicators without a numerical target

For SDG indicators without a fixed numerical yardstick, only the numerator of the CR ($CAGR_a$) can be computed and assessed against the normative direction of the indicator (decrease or increase), as reported in the first two columns of Table A.3.2 and Table A.3.3.

With indicators having an increasing normative direction, in order to produce the input to assess the trend at target and goal level, the $CAGR_a$ is linearly rescaled into a range from 0 to 4 using the same min/max approach used to linearize the CR:

$$CAGR_{a\,Score} = \frac{(max_s - min_s)}{(max_{CAGR_a} - min_{CAGR_a})} * (CAGR_a - min_{CAGR}) + min_s$$

where:

- min_{CAGR_a} and max_{CAGR_a} are respectively the minimum and the maximum values of the $CAGR_a$ delimiting the corresponding assessment interval. For example, for a $CAGR_a$ equal to 0.009, $min_{CAGR_a} = 0.005$ and $max_{CAGR_a} = 0.01$. Given that the $CAGR_a$ can potentially take any real value, in the light green class (improvement since the baseline year) max_{CAGR_a} is operationally set equal to 0.05. Analogously, in the red class (deterioration since baseline year), min_{CAGR_a} is operationally set equal to -0.05.
- min_s and max_s are respectively the minimum and the maximum value of the score delimiting the corresponding assessment interval for the $CAGR_a$. For example, for a $CAGR_a$ equal to 0.009, $min_s = 2$ and $max_s = 3$.

Table A.3.2. $CAGR_a$ thresholds and categories and corresponding linearized scores in correspondence of an increasing normative direction

Levels of actual growth rate	Colour	Assessment category	Score
$CAGR_a > 0.01$	Green	Improvement since baseline-year (>>)	(3–4]
$0.005 < CAGR_a \leq 0.01$	Yellow	Slight improvement since baseline-year (>)	(2–3]
$-0.01 \leq CAGR_a \leq 0.005$	Orange	Slight deterioration or No improvement since baseline-year (< or =)	[1–2]
$CAGR_a < -0.01$	Red	Deterioration since baseline-year (<<)	[0–1)

With indicators having a decreasing normative direction (Table A.3.3), i.e. in situations where a decrease in the indicator value corresponds to a positive outcome, the min/max approach is implemented adopting a slightly different expression:

$$CAGR_{a\,Score} = \frac{-(max_s - min_s)}{(max_{CAGR_a} - min_{CAGR_a})} * (CAGR_a - min_{CAGR}) + max_s$$

Table A.3.3. $CAGR_a$ thresholds and categories and corresponding linearized scores in correspondence of a decreasing normative direction

Levels of actual growth rate	Colour	Assessment category	Score
$CAGR_a < -0.01$	Green	Improvement since baseline-year (>>)	(3–4]
$-0.01 \leq CAGR_a < -0.005$	Yellow	Slight improvement since baseline-year (>)	(2–3]
$-0.005 \leq CAGR_a \leq 0.01$	Orange	Slight deterioration or No improvement since baseline-year (< or =)	[1–2]
$CAGR_a > 0.01$	Red	Deterioration since baseline-year (<<)	[0–1)

A.3.2 Method for current status assessment at target and goal level

Indicators with a numerical target

As previously discussed (Annex A.2), when the target monitored through a given indicator underpins a numerical yardstick, the current status is assessed measuring the normalized distance d_{it} between the indicator value for a given country i in year t (x_{it}) to its target value in the same country x_i^*.

According to its value, the distance for a given indicator is categorized in one of the classes reported in the first two columns of Table A.3.4. It should be noted that the boundaries of distance intervals reported in the first column of the table are indicator specific. As an example, Table A.3.4 presents the intervals used for the assessment of the current status of Indicators 2.1.1 and 2.1.2.

Then, in order to produce the inputs to assess the current status at target and goal level, the distance d_{it} is linearly rescaled into a range from 0 to 4 considering the following min/max expression:

$$score_d = \frac{-(max_s - min_s)}{(max_{dist} - min_{dist})} * (d_{it} - min_{dist}) + max_s$$

where:

- min_{dist} and max_{dist} are respectively the minimum and the maximum values of d_{it} delimiting the corresponding assessment interval. For example, for $d_{it} = 0.06$, $min_{dist} = 0.05$ and $max_{dist} = 0.10$. Given that d_{it} can potentially take any value in the real scale, in the dark green class (target already met) min_{dist} is operationally set equal to 0. Analogously, in the red class (very far from the target), max_{dist} is operationally set equal to 0.50 for the absolute distance and 0.80 for the normalized distance.
- min_s and max_s are respectively the minimum and the maximum value of the score delimiting the corresponding assessment interval for the distance. For example, for $d_{it} = 0.06$, $min_s = 2$ and $max_s = 3$.

Table A.3.4. Distance thresholds and categories and corresponding linearized scores

Level distance	Colour	Assessment category	Score
$d_{it} \leq 0$	Dark green	Target already met (+++)	4
$0 < d_{it} \leq 0.05$	Green	Close to the target (++)	[3–4)
$0.05 < d_{it} \leq 0.10$	Yellow	Moderate distance to the target (+)	[2–3)
$0.10 < d_{it} \leq 0.25$	Orange	Far from the target (-)	[1–2)
$d_{it} > 0.25$	Red	Very far from the target (--)	[0–1)

Indicators without a numerical target

As discussed in Annex A.2, in absence of a numerical yardstick, the distance to the target cannot be calculated. In this circumstance, each country is associated to the corresponding quintile of the indicator distribution.

It should be noted that quintiles are calculated using country values only. Then, the regional and global aggregates are associated to the corresponding quintiles according to their values.

After associating each country, region and the world to the corresponding quintile, a linearization into a range from 0 to 4 is performed using the same min/max approaches illustrated above according to the normative direction of the indicator. More precisely, the expression that should be considered for indicators with an increasing normative direction is:

$$Q_{Score} = \frac{(max_s - min_s)}{(max_Q - min_Q)} * (x_Q - min_Q) + min_s$$

On the other hand, the expression to be used for indicators with a decreasing normative direction is:

$$Q_{Score} = \frac{-(max_s - min_s)}{(max_Q - min_Q)} * (x_Q - min_Q) + max_s$$

Table A.3.5. Quintiles and categories and corresponding linearized scores with increasing normative direction

Quintile	Colour	Assessment category	Score
$q_{80\%} < x_{it} \leq q_{100\%}$	Dark green	Fifth quintile	4
$q_{60\%} < x_{it} \leq q_{80\%}$	Green	Fourth quintile	[3–4]
$q_{40\%} < x_{it} \leq q_{60\%}$	Yellow	Third quintile	[2–3]
$q_{20\%} < x_{it} \leq q_{40\%}$	Orange	Second quintile	[1–2]
$q_{0\%} \leq x_{it} \leq q_{20\%}$	Red	First quintile	[0–1]

Table A.3.6. Quintiles and categories and corresponding linearized scores with decreasing normative direction

Quintile	Colour	Assessment category	Score
$q_{0\%} \leq x_{it} \leq q_{20\%}$	Dark green	First quintile	4
$q_{20\%} < x_{it} \leq q_{40\%}$	Green	Second quintile	[3–4)
$q_{40\%} < x_{it} \leq q_{60\%}$	Yellow	Third quintile	[2–3)
$q_{60\%} < x_{it} \leq q_{80\%}$	Orange	Fourth quintile	[1–2)
$q_{80\%} < x_{it} \leq q_{100\%}$	Red	Fifth quintile	[0–1)

A.3.3 Aggregation at target and goal levels

For targets monitored by one indicator only, the scores obtained with methods described in Annexes A.3.1 and A.3.2 can be used to perform the assessment at the target level. On the other hand, for targets monitored by more than one indicator, the scores are averaged into a target-level score. The goal level assessment is then performed by computing the arithmetic mean of the target-level scores.

After computing the target and goal level trend and current status scores, these are categorized in the five classes reported in Table A.3.7.a, Table A.3.7.b, Table A.3.8.a and Table A.3.8.b.

Table A.3.7.a. Trend scores and categories at the goal level and for targets with a numerical yardstick

Score	Assessment category
4	Target achieved
[3–4)	Improvement towards the Target /Goal
[2–3)	Slight improvement towards the Target /Goal
[1–2)	No improvement towards the Target /Goal
[0–1)	Deterioration away from the Target/Goal

Table A.3.7.b. Trend scores and categories for targets without a numerical yardstick

Score	Assessment category
[3–4]	Improvement
[2–3)	Slight improvement
[1–2)	No improvement
[0–1)	Deterioration

Table A.3.8.a. Current status scores and categories at the goal level and for targets with a numerical yardstick

Score	Assessment category
4	Target/Goal achieved
[3–4)	Close to achieving the Target/Goal
[2–3)	Moderate distance to achieving the Target/Goal
[1–2)	Far from achieving the Target/Goal

Score	Assessment category
[0–1)	Very far from achieving the Target/Goal

Table A.3.8.b. Current status scores and categories for targets without a numerical yardstick

Score	Assessment category
4	Best performers
[3–4)	Above median performers
[2–3)	Median performers
[1–2)	Below median performers
[0–1)	Worst performers

The target and goal level assessment methodology is implemented only when:

- a minimum of 50 percent of all the indicators under a target are available;
- a minimum of 50 percent of all the targets under a goal are assessable.

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