Food and Agriculture Organization of the United Nations

SUSTAINABLE DEVELOPMENT GOALS

Tracking progress on food and agriculture-related SDG indicators 2021

A report on the indicators under FAO custodianship

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Contents

Foreword

The year 2020 was an extraordinary year in recent history. The devastating COVID-19 virus wreaked havoc across the world, on health and the economy alike, severely affecting every aspect of human life.

The pandemic has already shaken the 2030 Agenda for Sustainable Development to its very core and, as it continues, the full effect on the progress towards the achievement of the Sustainable Development Goals (SDGs) is still to be determined.

Where we stand now

In September 2019, the High-Level Political Forum noted that the world is "off track" to meeting the SDGs. The situation has not significantly improved this year – on the contrary, the impact of the COVID-19 pandemic is being felt across several SDG indicators, whose progress has deteriorated. **The COVID-19 pandemic might have pushed an additional 83-132 million into chronic hunger in 2020.**

Overall, progress remains insufficient in the food and agriculture domain, suggesting that the related SDG targets are beyond reach at a global level, unlesscorrective actions are urgently taken.

The COVID-19 pandemic propelled world hunger in 2020, which increased from 8.4 to as much as 10.4 percent of the global population in just one year, after remaining virtually stagnant for five years.

At the same time, **the percentage of food lost after harvest on-farm and at the transport, storage and processing stages stands at 13.8 percent globally,** amounting to over USD 400 billion a year.

While the prevalence of moderate or severe food insecurity has been slowly rising globally since 2014, the increase in 2020 was equal to that of the previous five years combined.

Systematic disparities are observed in the incomes and productivity of small-scale and large-scale food producers, with the former lagging behind on both fronts in all surveyed developing countries.

Women small-scale food producers in developing countries consistently earn less than men, even though their productivity is often on par or even higher than men. Gender disparities in agricultural land ownership also persist globally: in 29 out of the 33 countries assessed, relatively fewer women have such rights compared to their male counterparts. The degree to which legal frameworks guarantee women's equal rights to land ranges from very low to medium in more than 60 percent of the 36 assessed

countries.

Over the past decade, these trends have emerged even though government spending on agriculture has grown compared to the share of agriculture in global GDP, reaching levels similar to those observed in the early 2000s.

The growth rate of global holdings of plant genetic resources has slowed in the past decade, reaching its lowest level ever at 0.2 percent in 2020. Only 2.6 percent of global local livestock breeds have sufficient material in genebanks to reconstitute the breed in case of extinction - a wholly inadequate situation given that 74 percent of assessed local livestock breeds are at risk of extinction.

Globally, **the proportion of countries afflicted by high or moderately high general food prices increased** sharply in 2020 after years of a decreasing trend.

Global water stress remains at a safe 18.4 percent according to 2018 estimates. This represents a 0.2 percent increase since 2015, with certain regions like Western and Northern Africa and Southern Asia registering an extremely high water stress level of over 70 percent. Meanwhile, water use efficiency rose by 10 percent across all economic sectors.

Between 2018 and 2020, there has been global progress in the implementation of regulatory and institutional frameworks that **protect access rights for small-scale fisheries and international instruments to combat illegal, unreported and unregulated (IUU) fishing.** The proportion of fish stocks within biologically sustainable levels fell to 65.85 percent globally, the lowest level yet in the downward trend observed since 1974.

While the rate of deforestation has slowed in the last decade in tropical regions, **forest area fell from 31.9 percent of total land area in 2000 to 31.2 percent in 2020,** representing a net loss of almost 100 million hectares of the world's forests. Above-ground forest biomass per hectare, the proportion of forest area in protected areas and under long-term management plans, as well as certified forest area all increased or remained stable at the global level and in most of the regions of the world, demonstrating progress towards sustainable forest management.

Satellite imagery data reveals that **the world's mountain green coverage has remained stable globally,** at about 73 percent between 2000 and 2018.

Additional indicators provide valuable insights

In 2021, FAO adopted a new Strategic Framework with SDGs 1, 2 and 10 as its core pillars. To provide a more comprehensive picture of the progress made towards the Agenda 2030 in addressing rural poverty and inequality, this report also discusses, for the first time, selected indicators for which FAO is a contributing agency and/or have key implications for food and agriculture across these Goals.

These additional indicators provide valuable information on agricultural losses due to

disasters, the distribution of land tenure rights, and the impact of international trade policies and regulations on agricultural trade, especially in developing and Least Developed Countries (LDCs).

The role of the private sector

This report was launched during the high-level week of the Food Systems Summit in September 2021. The Summit brings together the efforts and contributions of a global engagement process to transform food systems with bold, innovative solutions.

A key actor in this effort, whose specific role is not yet sufficiently defined in the SDG agenda, is the private sector. To this end, this report also includes a special chapter on measuring the contribution of the private sector to the SDGs in the food and agriculture domain. FAO's new *Guidance on core indicators for agrifood systems – Measuring the private sector's contribution to the Sustainable Development Goals* (FAO, 2021a) provides practical guidance on how to measure the contribution of private actors to the SDGs in a consistent and comparable manner across countries.

Pietro Gennari, Chief Statistician

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, progress towards ending poverty in all its forms had slowed, and the world was not on track to ending extreme poverty by 2030. Before the pandemic, global extreme poverty had fallen from 10.1 percent in 2015 to 8.4 percent in 2019, which is equivalent to 643 million people living on less than USD 1.90 a day. Now, the COVID-19 pandemic is set to increase the number of poor in 2020 by between 119 and 124 million people, causing the extreme poverty rate to rise for the first time in a generation, from 8.4 percent in 2019 to between 9.1 and 9.4 percent in 2020 based on nowcasts.

The triple threat of COVID-19, conflict and climate change makes the global goal of ending poverty by 2030 beyond reach unless immediate and substantial policy actions are implemented. As the economic impacts of the pandemic begin to be felt more strongly, the importance of robust social protection systems for safeguarding the poor and vulnerable is becoming clearer than ever. Although many new social protection measures have been introduced in 2020, 4 billion people worldwide are still left without any social protection, the majority of whom are poor and vulnerable.

Also fundamental is the need for effective emergency preparedness, both for future pandemics and other hazards that cause disasters. Proactive risk reduction is imperative in joint efforts to design a sustainable future, preventing potentially hazardous events from devolving into full-blown disasters. Nowhere is this more evident than in agriculture, which underpins the livelihoods of over 2.5 billion people worldwide and provides nourishment for all 7.9 billion people on the planet. Based on the latest reports under the Sendai Framework, direct economic losses amounting to USD 7.6 billion were reported by 35 countries for 2020, of which close to 50 percent (USD 3.7 billion) were recorded in the agricultural sector. The growing frequency and intensity of disasters are putting at risk those communities and the food system at large, highlighting the urgency of building more resilient agricultural systems.

Adequate rights to economic resources and access to basic services for the most vulnerable members of society are necessary for ensuring progress towards reducing

poverty and financial insecurity. Despite the critical role of agriculture in supporting rural livelihoods, the security of tenure rights is far from universal, especially in developing countries. The share of population with legal documentation of land rights is often extremely low in developing countries, although in many cases this is compensated to some degree with a higher proportion of people having informal arrangements for land tenure and thus perceiving their rights to be secure.

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

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

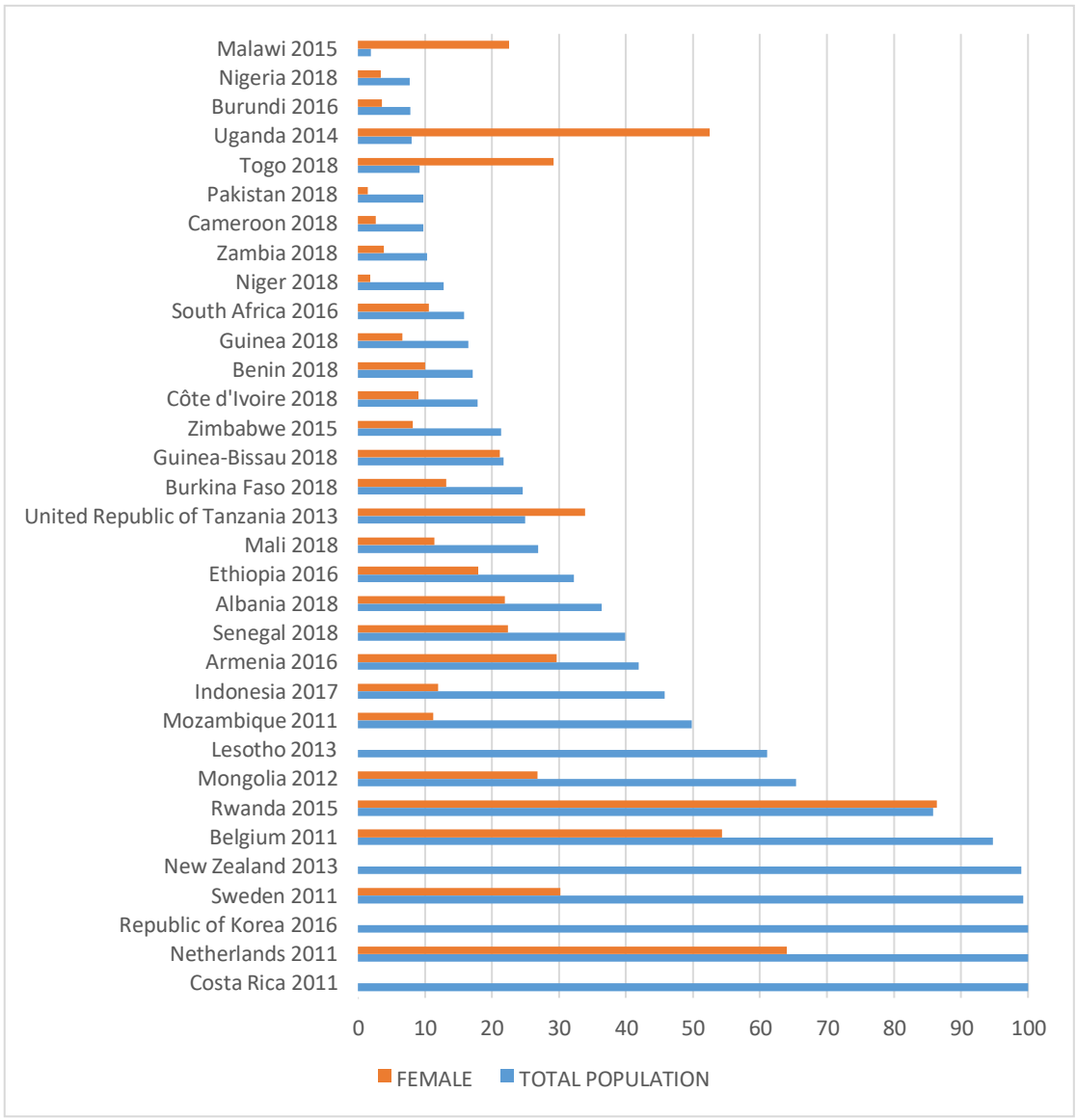
The proportion of women with legally recognized documentation of their tenure rights to land is significantly lower than the average for the adult population in most surveyed countries

Land is a key asset for poverty reduction, yet systemic discrimination has tended to reproduce prevailing inequalities in land access, ownership and control between men and women. The governance of tenure is therefore a crucial element in determining if and how people, communities and others 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 through "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.

The proportion of women with legally recognized documentation of their tenure rights to land is significantly lower than the average for the adult population in most surveyed countries. Data disaggregated by sex is available for 34 countries but only for the sub-indicator that measures legally documented tenure rights to land; the share of people who perceive their rights to be secure (22 countries) is not yet available on a sex-disaggregated basis (UNSD). 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, with the exception of Malawi, Uganda, Togo, United Republic of Tanzania and Rwanda (Figure 1). This finding corroborates the figures for SDG indicators 5.a.1 that deal more specifically with agricultural land, and provide a measure of the share of women among agricultural land owners, and indicator 5.a.2 on the strength of legal frameworks including customary laws across countries guarantying women's and girl's equal rights to land ownership and/or control respectively (see section 5 of this report).

SDG indicator 1.4.2 is under the co-custodianship of UN-Habitat and the World Bank. A collaborative effort by custodian for 1.4.2 and FAO, the custodian for SDG 5.a.1, and with the support of the Global Land Indicators Initiative and the Global Land Tool Network; developed a joint module for measuring individual land rights to provide consistent data on indicators 1.4.2 and 5.a.1 (FAO *et al.*, 2019). The joint module, now available in 5 UN languages, provides national data and statistical organisations with globally approved methodology by IAEG-SDGs and tools that can be customized for data collection and reporting on the two indicators in a more efficient and cost-effective way. The custodian agencies continue to work together in disseminating the joint module and providing technical support for national level data and statistics institutions to fast track data collection and reporting on these indicators. Although several countries already reported on indicator 1.4.2 to the UNSD, available data is not current enough to support meaningful policy reform at a national level and to realize the global aspiration of sustainable development that leaves no one behind. This calls for UN Member States to prioritise and devolve more resources to ensure regular reporting on this indicator and using such data as a tool for policy decisions.

Figure 1: Proportion of people with legally recognized documentation of their rights to land out of total adult population by sex (%)



SOURCE: UNSD Global Database, World Bank and UN-Habitat data, last accessed 8 June 2021.

SDG INDICATOR 1.5.2

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

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

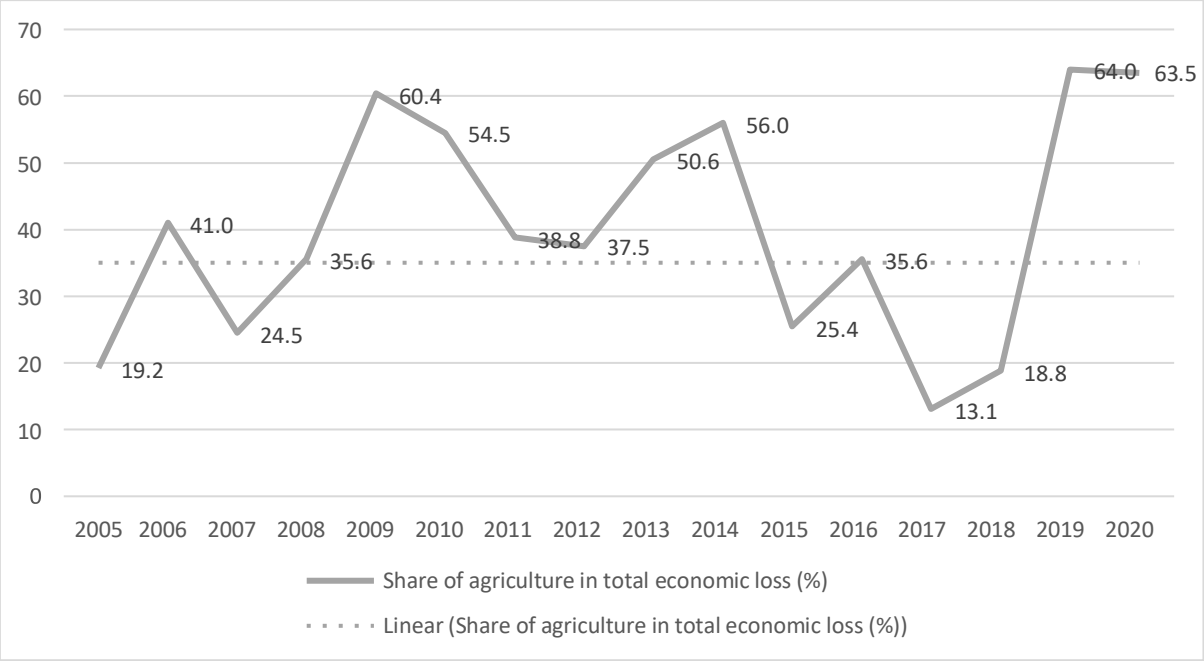
On average, since 2005, agriculture incurs over one third of total economic losses due to disasters

The adverse impacts of disasters on societies economies pose a major obstacle to poverty and hunger reduction. The effects of the COVID-19 pandemic are slowing down economic growth and development trajectories. With its cascading and devastating impacts across entire economies, COVID-19 demonstrates the interconnected nature of risk today, highlighting the urgent need for a concerted global effort to accelerate risk reduction activities through collective commitments.

Based on the latest reports under the Sendai Framework monitoring process (UN Office for Disaster Risk Reduction, 2021) from 35 countries in 2020, direct economic losses attributed to disasters amounted to USD 7.6 billion, of which agricultural losses constituted USD 3.7 billion. Wide variations exist in disaster loss data across time and regions since they are greatly influenced by large-scale catastrophic events. Furthermore, the number of countries that report data on economic loss from disasters varies significantly across the years, with a peak of 86 countries reporting for 2010, and 35 reporting for 2020 as per reporting received by the end of March 2021.

Although 2020 losses are relatively smaller than the levels observed in the quinquennium 2015–2019, where total losses amounted to over USD 343 billion, agricultural loss continues to constitute a significant proportion of the total economic loss, as evidenced from data from countries that report both types of losses (Figure 2). The significance of this share underscores agriculture's importance for the economic development of many countries across the globe, its innate interactions with the environment and its direct reliance on natural resources. Urgent and ambitious action is needed to build more resilient agricultural systems, which are currently bearing the brunt of economic losses due to disasters (FAO, 2021b).

Figure 2: Share of agricultural loss in total economic loss attributable to disasters



SOURCE: United Nations Office for Disaster Risk Reduction, 2021.

SUSTAINABLE DEVELOPMENT GOAL 2

Zero Hunger

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

SUMMARY TABLE

INDICATORS

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Overview

Just before the onset of the COVID-19 pandemic, close to 700 million people were going hungry and some 2 billion people were suffering from moderate or severe food insecurity—figures that have been rising gradually since 2014. The crisis has further compounded the threats to global food security and nutrition. Disrupted food supply chains and economic slowdowns have affected food systems worldwide and threatened people's access to food. In fact, the pandemic may have pushed an additional over 83–132 million people into chronic hunger in 2020, making the target of ending hunger even more challenging to achieve.

COVID-19 is expected to exacerbate all forms of malnutrition, in particular in children, due to a loss of household income, a lack of available and affordable nutritious food, reduced physical activity and disruptions in essential nutrition services. Urgent short-term actions are needed to avert the increase in world hunger; at the same time, a transformation of food systems is required to achieve a healthy and sustainable food future for all.

SDG INDICATOR 2.1.1

Prevalence of undernourishment (PoU)

Current status = Close to target[1]

Trend assessment = Deterioration

Target 2.1

[1] 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 the PoU lower than 2.5 percent. This prevent assessing whether a country has or has not already met the SDG target.

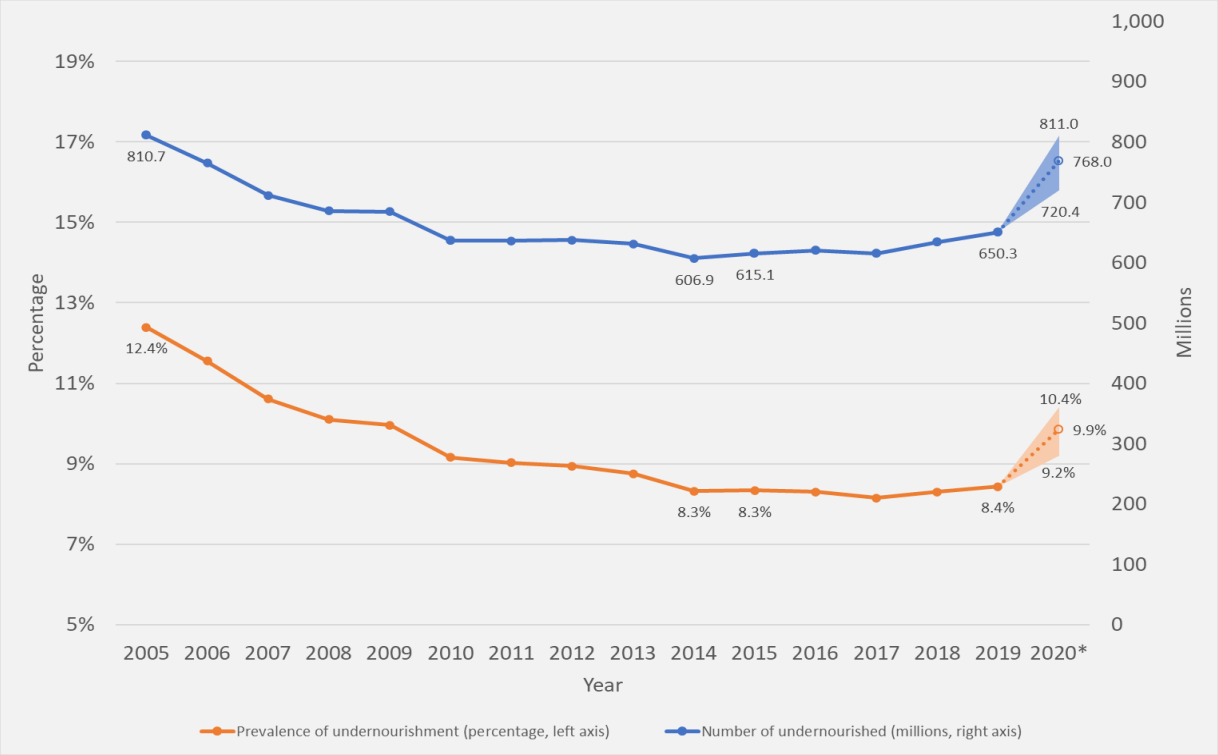
By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round

The number of undernourished people in the world continued to rise in 2020. Between 720 and 811 million people in the world faced hunger in 2020.

After remaining virtually unchanged for five years, the prevalence of undernourishment increased from 8.4 in 2019 to around 9.9 percent in 2020, heightening the challenge of achieving the Zero Hunger target by 2030. Between 720 and 811 million people in the world faced hunger in 2020. Considering the middle of the projected range (768 million), around 118 million more people were facing hunger in 2020 than in 2019 – or as many as 161 million more, considering the upper bound of the projected range.

The estimates of how many people were thrust into hunger and food insecurity globally in 2020 are affected by more uncertainty this year than in past years because of data and methodological challenges posed by the COVID-19 pandemic. The 2020 global prevalence of undernourishment (SDG indicator 2.1.1) is presented as an interval to reflect the added uncertainty around the hunger estimates induced by this unprecedented event.

Figure 3: Number and percentage of undernourished people in the world, 2005–2020



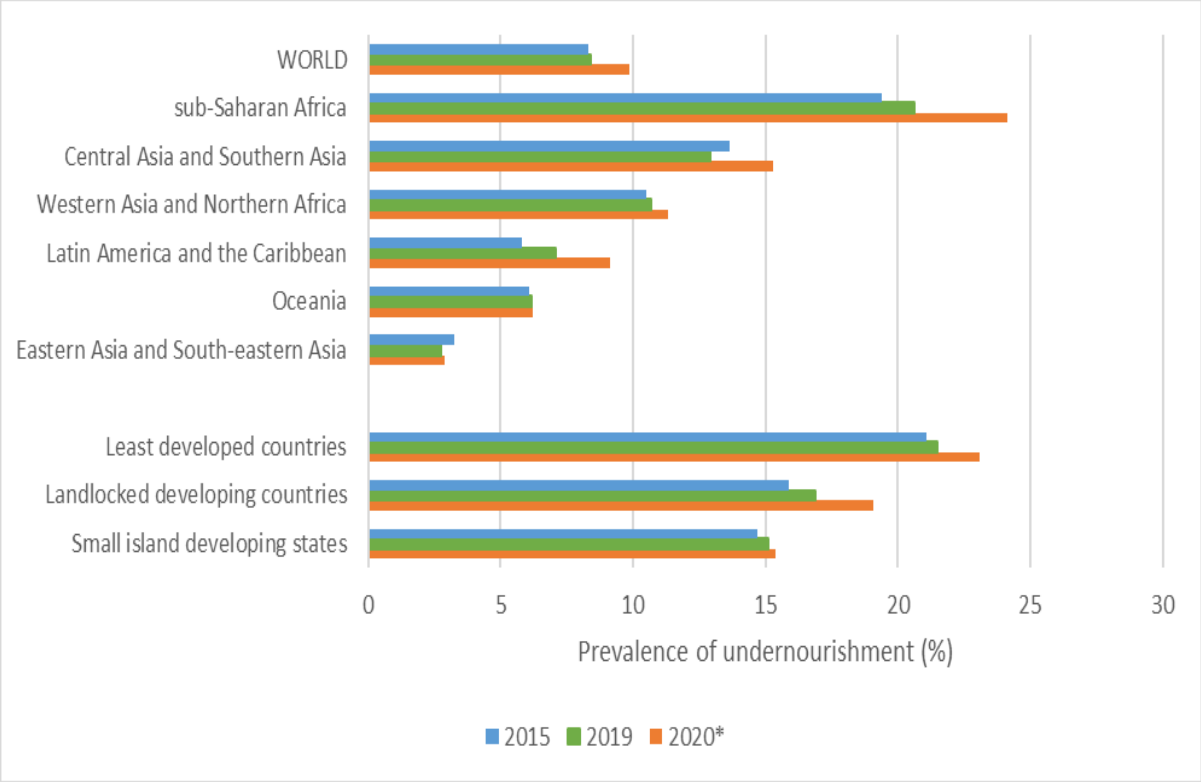
NOTE: * Projected values for 2020 in the figure are illustrated by dotted lines. Shaded areas show lower and upper bounds of the estimated range.
SOURCE: FAO, 2021c.

Hunger increased in every region of the world from 2015 to 2020 except Eastern Asia and South-eastern Asia, with sharp increases in sub-Saharan Africa and Latin America and the Caribbean from 2019 to 2020. The prevalence of undernourishment in sub- Saharan Africa was estimated to be 24.1 percent of the population in 2020, correspondingto nearly 264.2 million undernourished people, up 4.7 percentage points since 2015 – 3.5 percentage points from 2019 to 2020 alone. This is more than double that of Western Asia and Northern Africa (11.3 percent) and is the highest among all regions.

More that 40 percent of undernourished people in the world live in Central Asia and Southern Asia – an estimated 308 million people in 2020. It is the region with the second highest prevalence of undernourishment (15.3 percent) after sub-Saharan Africa.

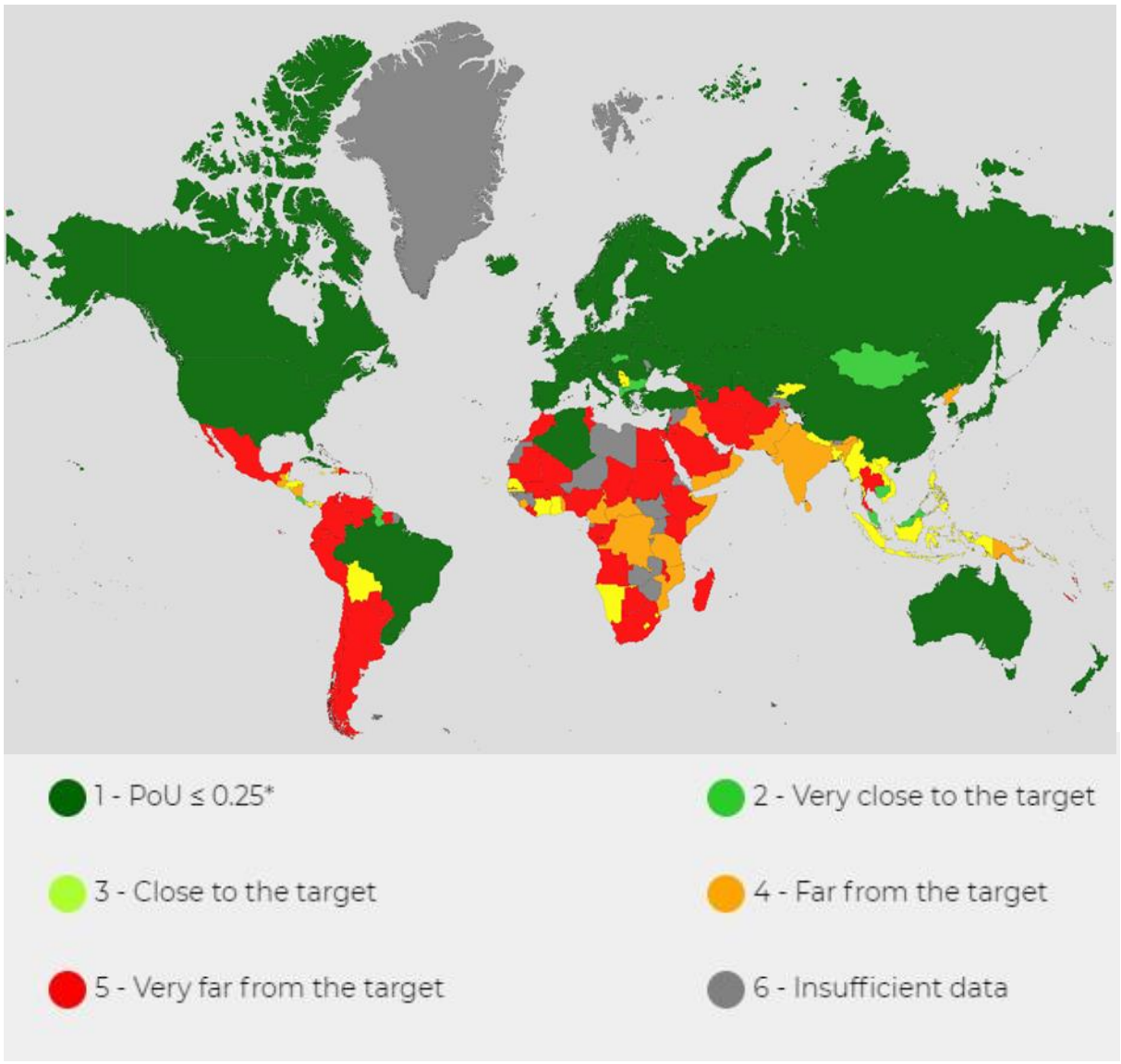
In Latin America and the Caribbean, the prevalence of undernourishment was 9.1 percent in 2020, below the global prevalence of 9.9 percent, which still translates into almost 60 million undernourished people. The number of undernourished people increased by more than 23 million between 2015 and 2020 – nearly 14 million from 2019 to 2020 alone.

Figure 4: Prevalence of undernourishment (%)



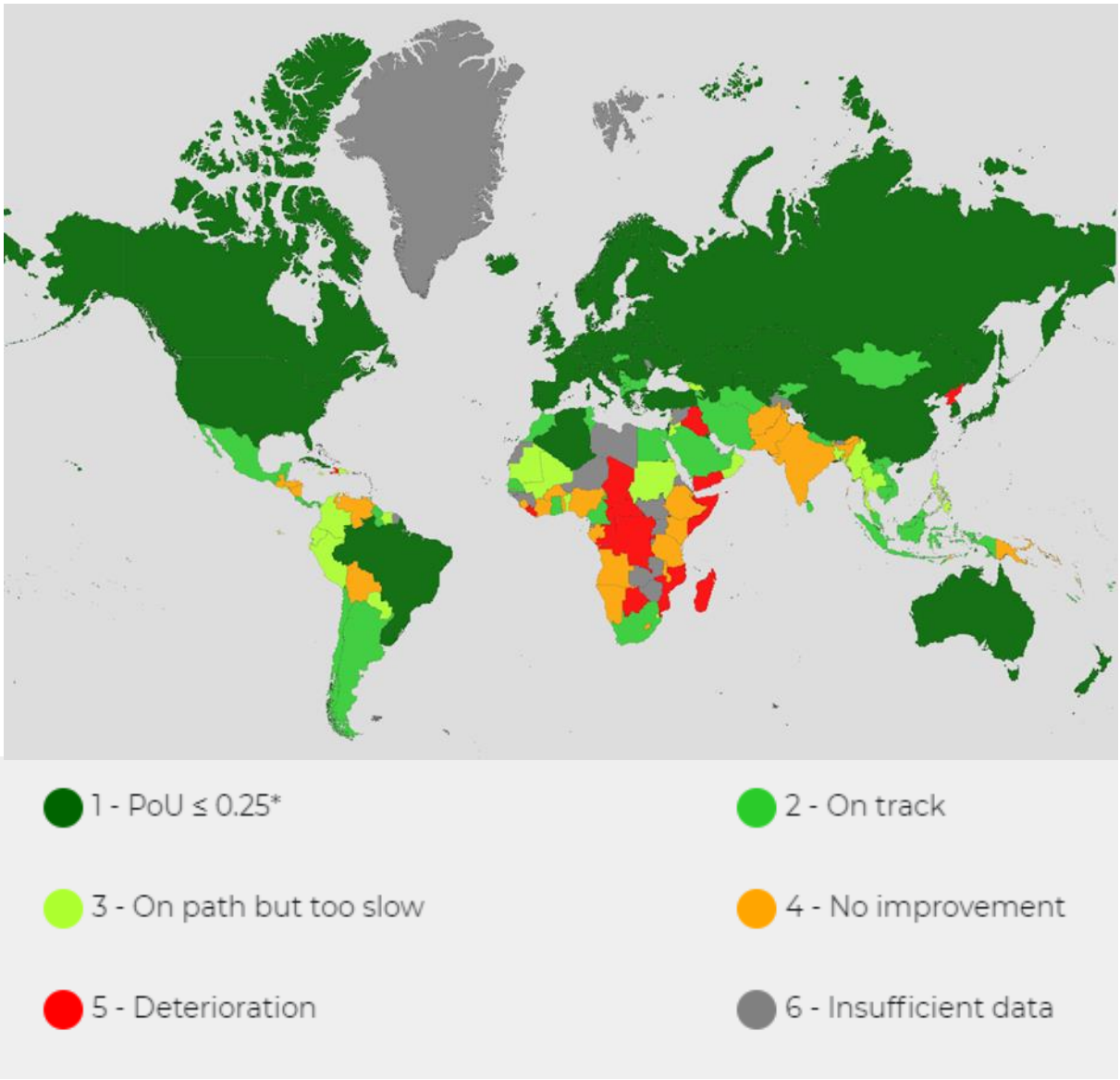
NOTE: * Projected values for 2020 in the figure are illustrated by dotted lines. Shaded areas show lower and upper bounds of the estimated range.
SOURCE: FAO, 2021c.

Figure 5: Current distance to the target of SDG indicator 2.1.1 on prevalence of undernourishment (2019 data)



NOTE: * 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 the PoU lower than 2.5 percent. This prevent assessing whether a country has or has not already met the SDG target.
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 2021c, modified to comply with UN Geospatial, 2021.

Figure 6: Progress towards eradicating hunger across the world, 2015–2019



NOTE: * 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 the PoU lower than 2.5 percent. This prevent assessing whether a country has or has not already met the SDG target.
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 2021c, modified to comply with UN Geospatial, 2021.

SDG INDICATOR 2.1.2

Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)

Current status = Very far from target

Trend assessment = Deterioration

Target 2.1

By 2030, end hunger and ensure access by all people, in particular the poor and people

round

It is estimated that nearly one in three people in the world did not have access to adequate food in 2020 – an increase of 320 million people in just one year, from 2.05 to 2.37 billion.

SDG Target 2.1 challenges the world to go beyond ending hunger. For optimal health and wellbeing, it is imperative to ensure access for all to safe, nutritious and sufficient food all year round. SDG indicator 2.1.2 – the prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES) – is used to monitor progress toward ensuring access to adequate food for all.

The estimates of the prevalence of food insecurity at severe levels only provide a supplementary lens for monitoring hunger to complement the prevalence of undernourishment (SDG indicator 2.1.1). Although obtained using very different data and methods, they are expected to closely correlate with the PoU across regions.

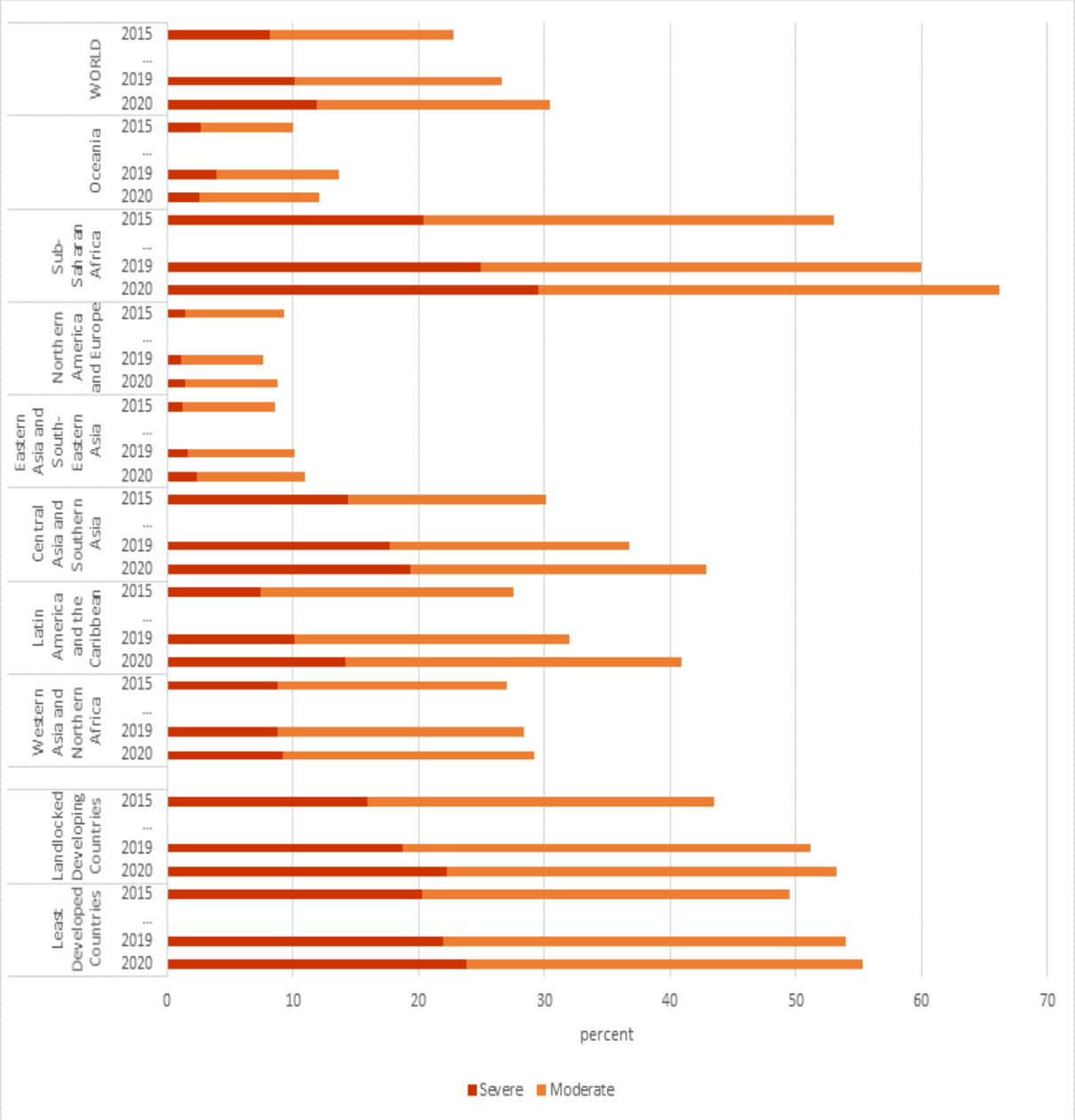
Since FAO first started collecting FIES data in 2014, moderate or severe food insecurity at the global level has been slowly on the rise, from 22.6 percent in 2014 to 26.6 percent in 2019. Then in 2020, the year the COVID-19 pandemic spread across the globe, it rose nearly as much as in the previous five years combined, to 30.4 percent. Thus, nearly one in three people in the world did not have access to adequate food in 2020 – an increase of 320 million people in just one year, from 2.05 to 2.37 billion (Figure 8).

Nearly 40 percent of those people – 11.9 percent of the global population, or almost 928 million – faced food insecurity at severe levels, indicating they had run out of food and, at worst, gone a day without eating. Like moderate or severe food insecurity, the increase in severe food insecurity from 2019 to 2020 was equal to the total increase in the preceding five years. Close to 148 million more people were severely food insecure in 2020 than in 2019.

The highest levels of moderate or severe food insecurity in 2020 were registered in sub-Saharan Africa (66.2 percent of the population), followed by Central Asia and Southern Asia (42.8 percent), and Latin America and Caribbean (40.8 percent). Although these regions were already experiencing high levels of food insecurity in 2019, there were sharp increases from 2019 to 2020 of between 6 and 9 percentage points.

Latin America and the Caribbean is the region where the prevalence of food insecurity is rising the fastest: from 27.5 percent in 2015 to 48.8 in 2020, due to a sharp increase in South America. In Northern America and Europe, while there was a gradual decreasing trend in the prevalence of food insecurity from 2015 to 2020, the trend reversed in 2020, increasing from 7.7 in 2019 to 8.8 percent in 2020.

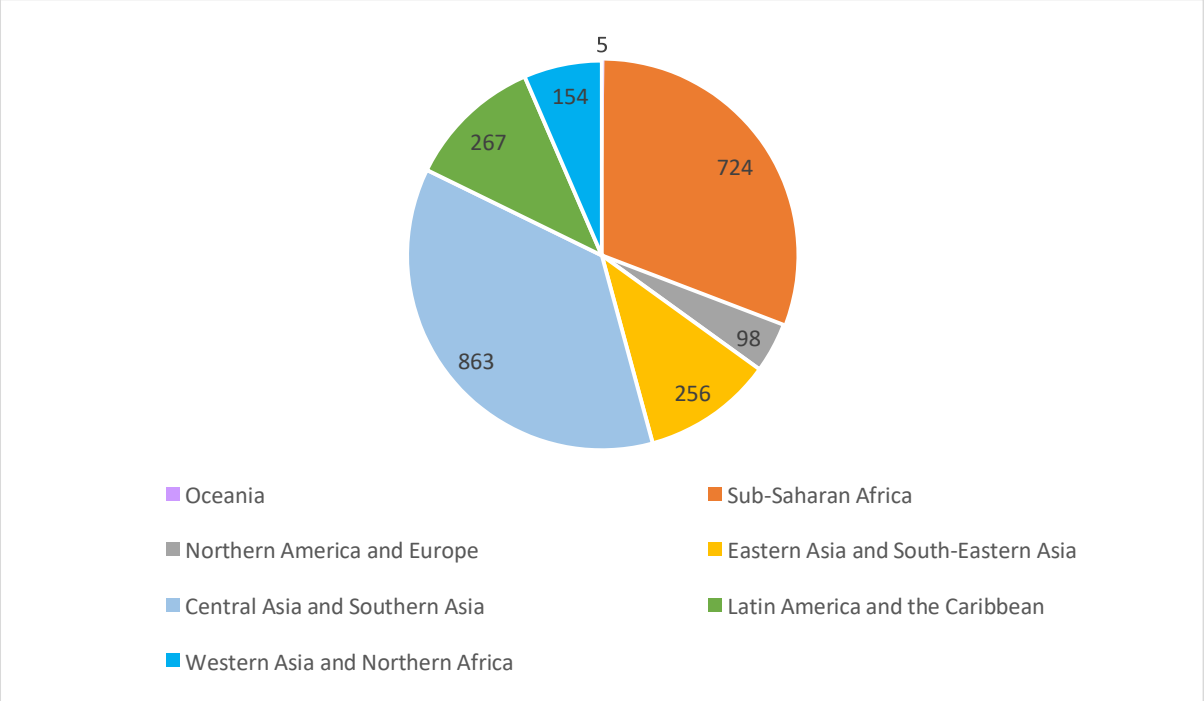
Figure 7: Prevalence of moderate or severe food insecurity by region in 2015, 2019 and 2020



SOURCE: FAO, 2021c.

In 2020, two thirds of the total number of people facing moderate or severe food insecurity in the world were living in Central Asia and Southern Asia or sub-Saharan Africa (Figure 8). Specifically, Central Asia and Southern Asia was home to 863 million food insecure people (36.5 percent of the world's total), and 724 million were living in sub-Saharan Africa (30.6 percent of the world's total). Latin America and the Caribbean, and Western Asia and Northern Africa, each accounted for about 11 percent of the moderately or severely food insecure people in the world.

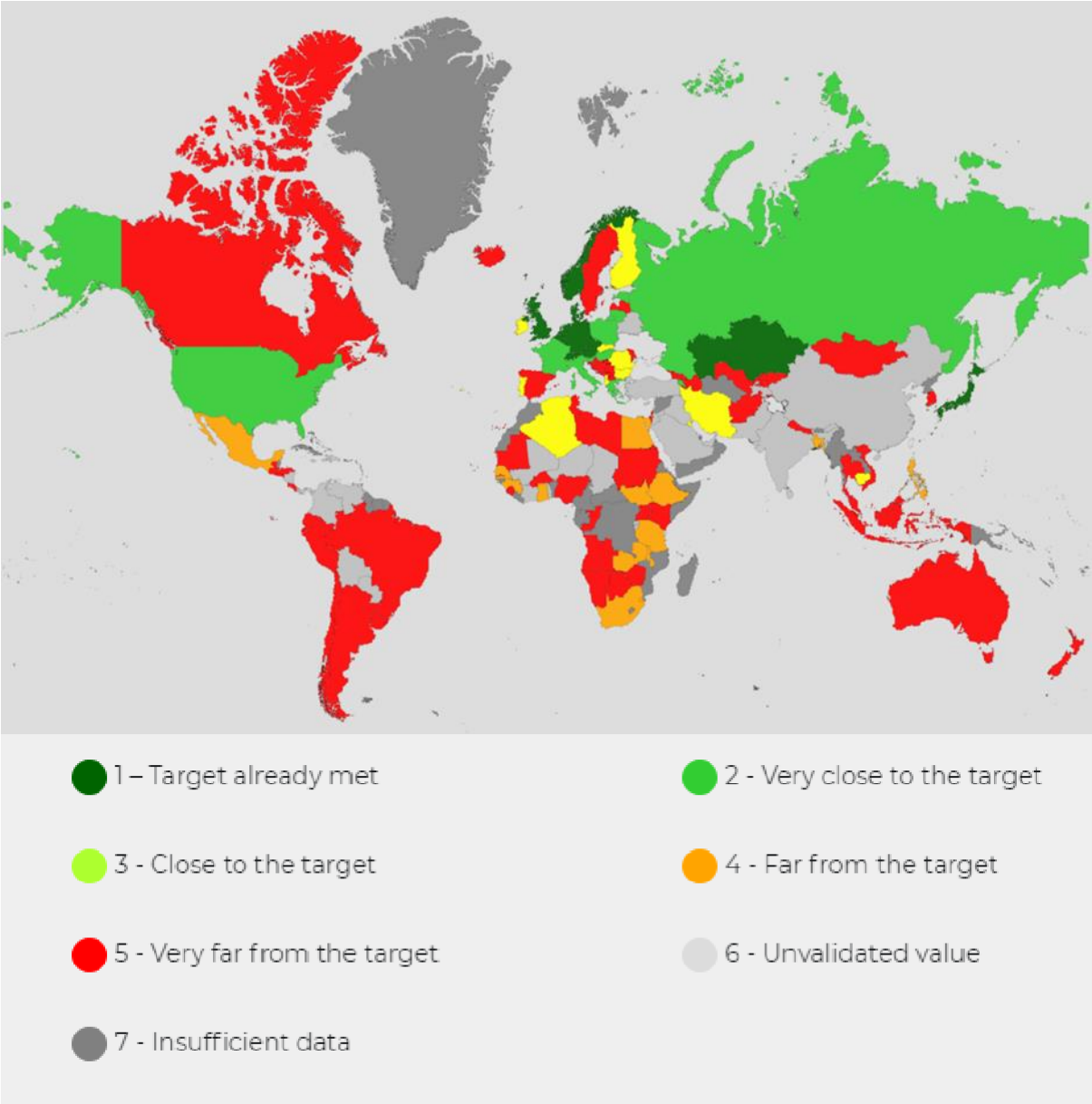
Figure 8: Regional distribution of the population affected by moderate or severe food insecurity, 2020 (millions)



SOURCE: FAO, 2021c.

Historically, women tend to be disproportionally affected by health and economic crises in many ways, including but not limited to increasing food insecurity and malnutrition, worsening health status and productive and economic opportunities. At the global level, the gender gap in the prevalence of moderate or severe food insecurity grew even larger in the year the COVID-19 pandemic spread across the world, with women being 10 percent more food insecure than men in 2020 versus 6 percent more than men in 2019. For severe food insecurity, the prevalence is also higher among women than men. This points to the disproportionate impact of COVID-19 on women's economic opportunities and access to nutritious foods.

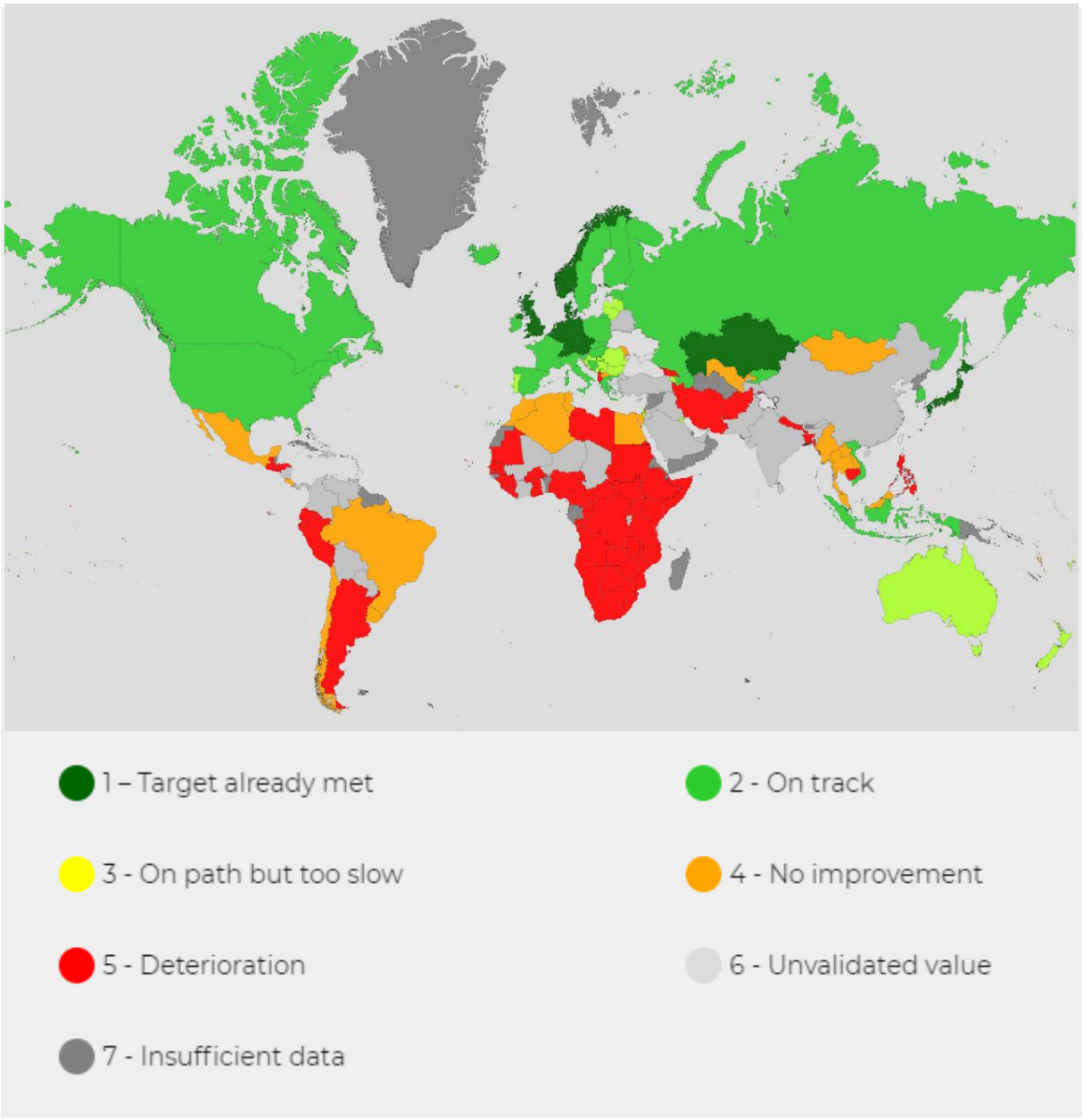
Figure 9: Current distance to the target indicator 2.1.2 on prevalence of food insecurity (2019 data)



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, 2021c, modified to comply with UN Geospatial, 2021.

Figure 10: Progress towards reducing moderate or severe food insecurity, 2015–2019



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, 2021c, modified to comply with UN Geospatial, 2021.

SDG INDICATOR 2.3.1

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

Status assessment = Not possible due to absence of numerical yardstick in target

Trend assessment = Not possible due to insufficient data

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

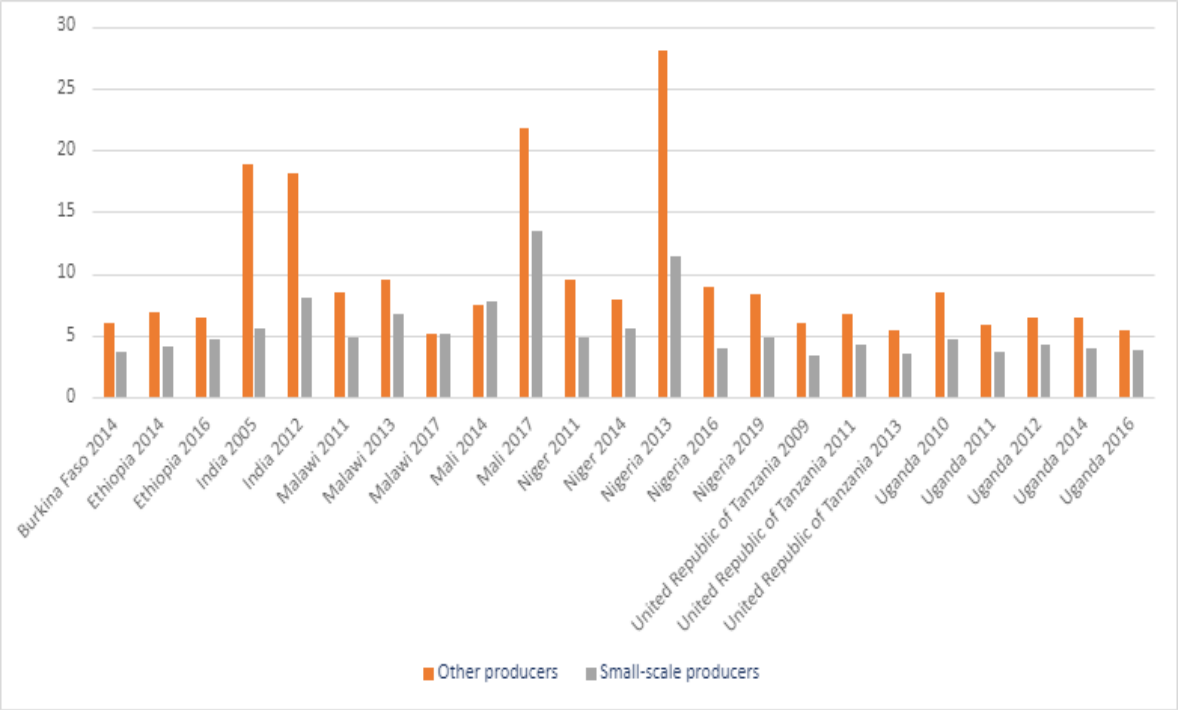
and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment

The productivity of small-scale producers is systematically lower, on average, than for larger food producers

Across developing regions, indicator 2.3.1, which measures average labor productivity of small-scale food producers, can range from around USD 3 a day in countries such as Burkina Faso, Nigeria, United Republic of Tanzania and Uganda, to USD 13.5 as in Mali in 2017. In developed countries, the productivity of small-scale food producers ranges from USD 45 a day in Hungary (2016) to USD 142 a day in Austria (2016).

In all developing countries, small-scale producers have a lower productivity than that of larger-scale producers (Figure 11). Countries with the largest differences in average productivity between small-scale producers and other producers include India and Malawi. By contrast, Uganda in the past years has been progressively closing the gap between small-scale producers and other producers.

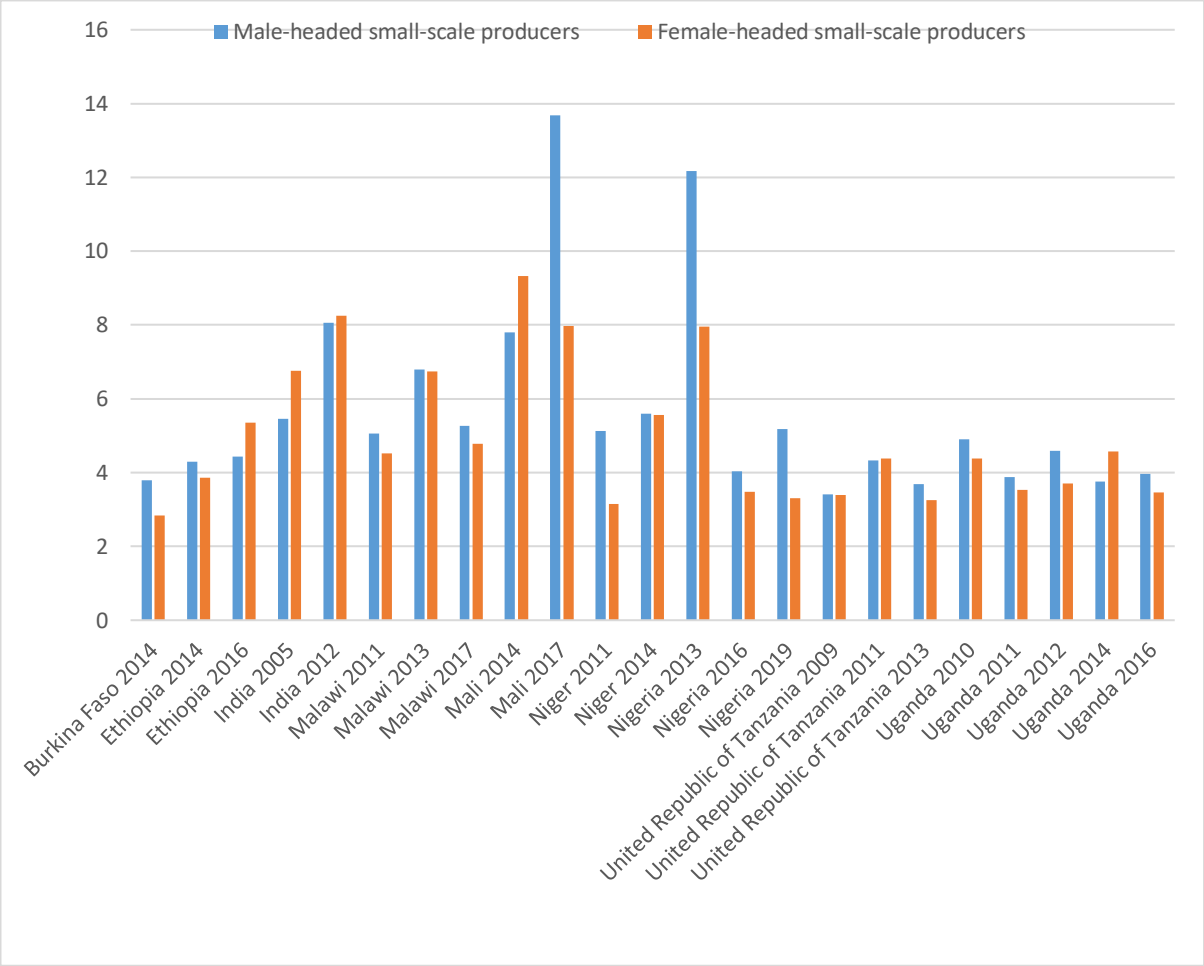
Figure 11: SDG indicator 2.3.1 Production per labour unit of small-scale food producers compared to other food producers, PPP (constant 2011 international USD)



SOURCE: FAO, 2021c.

In developing countries, sex-disaggregated data for the productivity of small-scale food producers does not reveal any particular pattern, suggesting that in many countries, the productivity of women small-scale food producers is on par or even exceeds the productivity of men small-scale producers (Figure 12.a). By contrast, based on data provided recently by Eurostat, the same is not the case in the EU, where men small-scale food producers systematically achieve higher productivity compared to women, with only one exception (Figure 12.b).

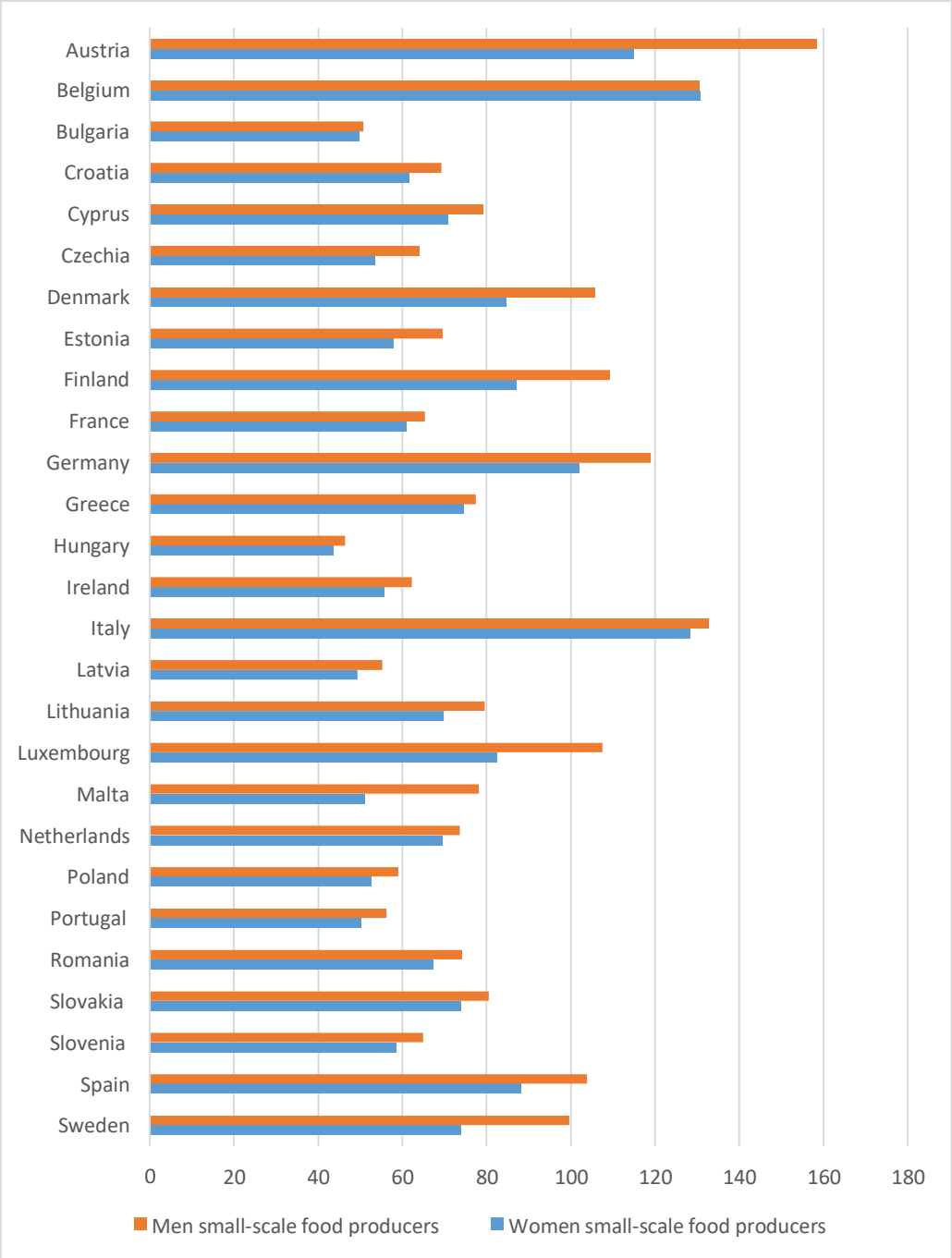
Figure 12.a: SDG indicator 2.3.1 Production per Labour Unit of Small-Scale Food Producers by sex of the household head in 2011 constant PPP USD (developing countries, multiple years)



SOURCE: FAO, 2021c.

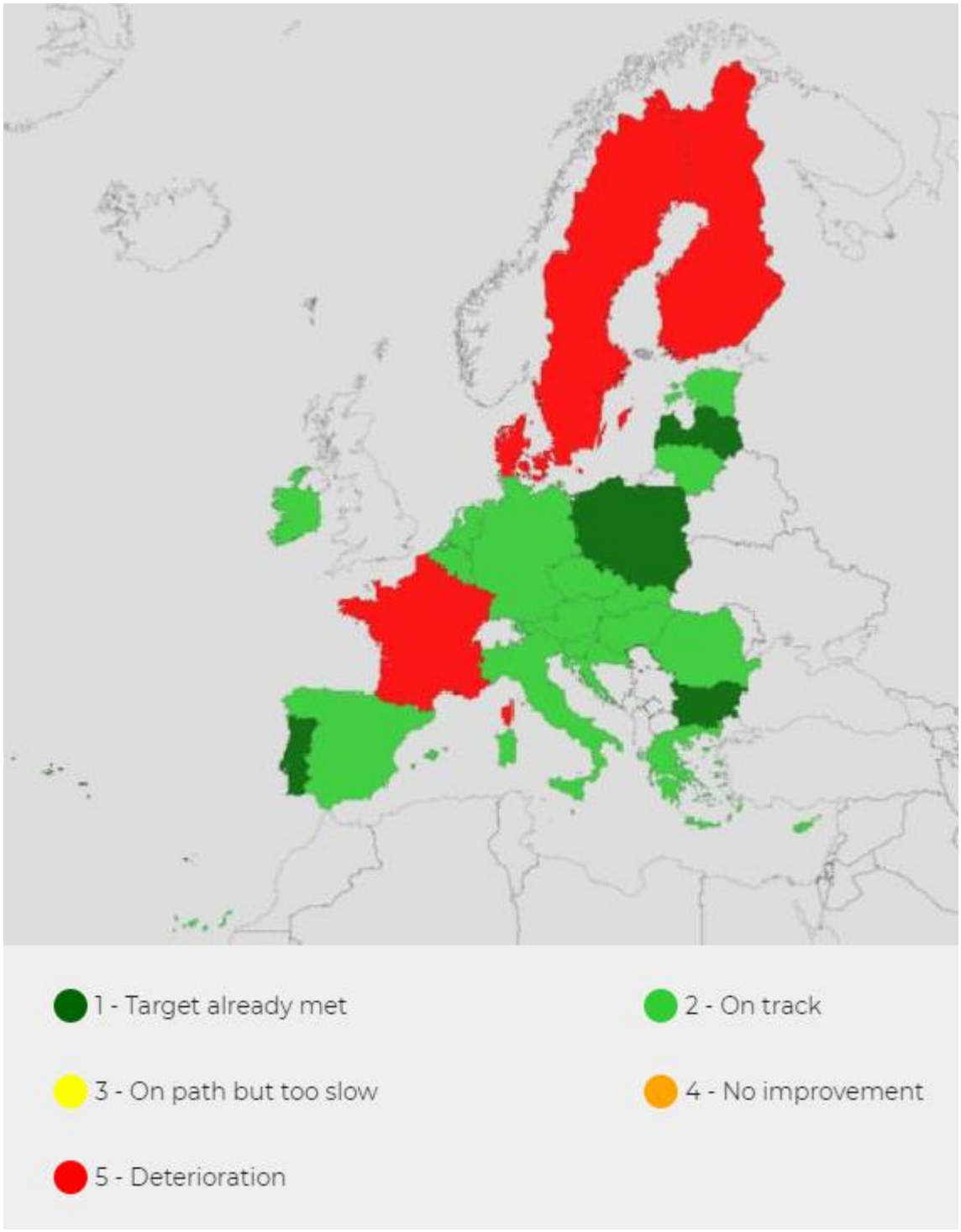
Measuring progress toward the SDG target 2.3 entails significant challenges. While relevant data is available for a wide range of countries in Africa, Asia, Europe and Latin America, the ideal type of farm-level information required, allowing to identity the population of small-scale producers and measure progress in the two indicators of target 2.3, is seldom available. This is particularly the case of indicator 2.3.1. Computing this indicator requires information on labour input and revenues to be simultaneously available for the same production unit. Available national agricultural surveys rarely collect these data. The evidence presented here is based on household surveys, which are a valid proxy for the indicators only to the extent to which households overlap with food production units. In the same line, the head of the household is assumed as a proxy to disaggregate the information by sex. No information is provided, in the available surveys, on the indigenous status of food producers.

Figure 12.b: SDG indicator 2.3.1 Production per labour unit of small-scale food producers by sex of the household head (EU countries, 2016)



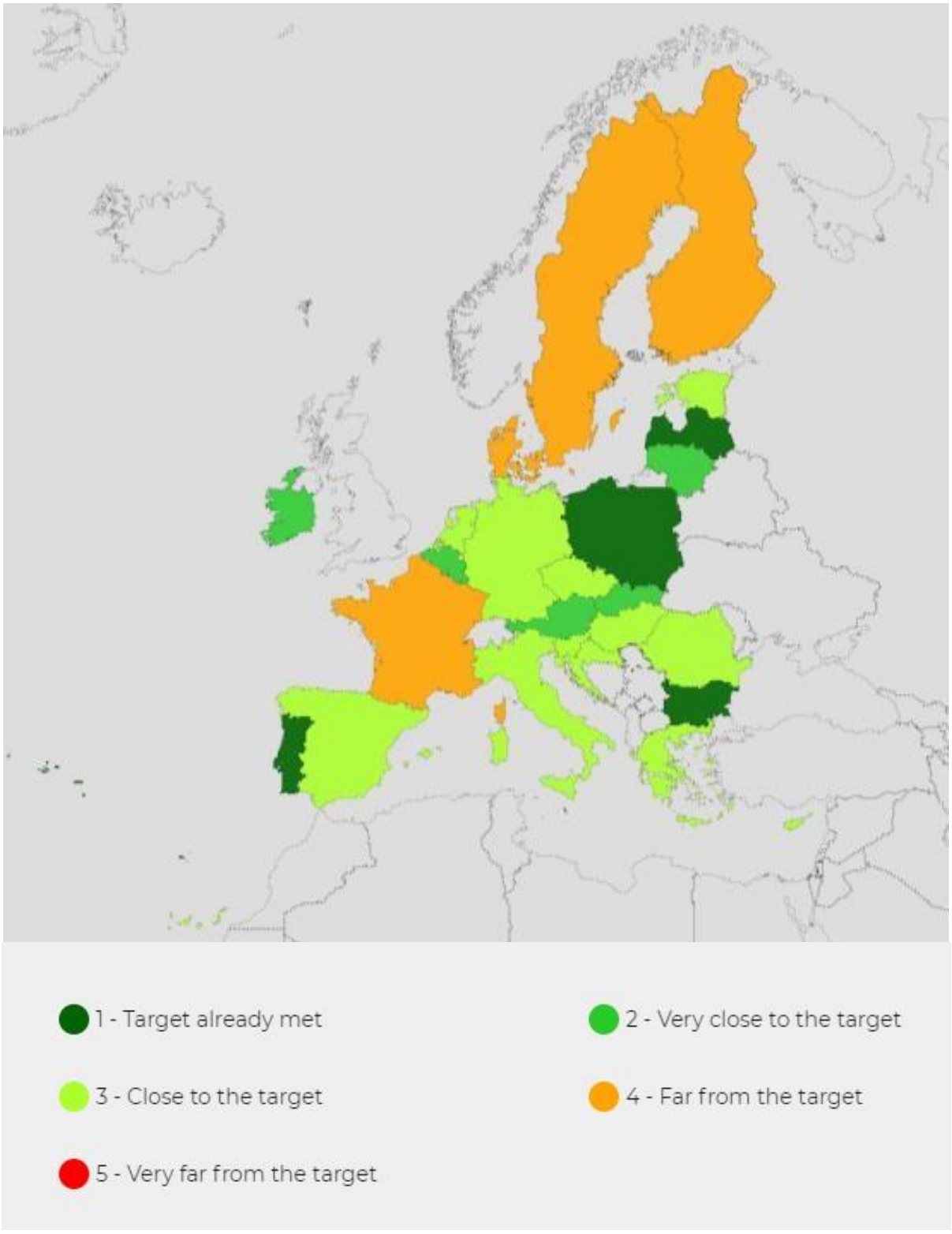
SOURCE: FAO, 2021c.

Figure 13.a: Progress towards doubling the productivity of small-scale food producers, European Union, 2010–2016



SOURCE: FAO, 2021c, modified to comply with UN Geospatial, 2021.

Figure 13.b: Current distance to the target of doubling the productivity of small-scale food producers, European Union, 2016



SOURCE: FAO, 2021c, modified to comply with UN Geospatial, 2021.

SDG INDICATOR 2.3.2

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

Status assessment: Not possible due to absence of numerical yardstick in target

Trend assessment: Not possible due to insufficient data

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

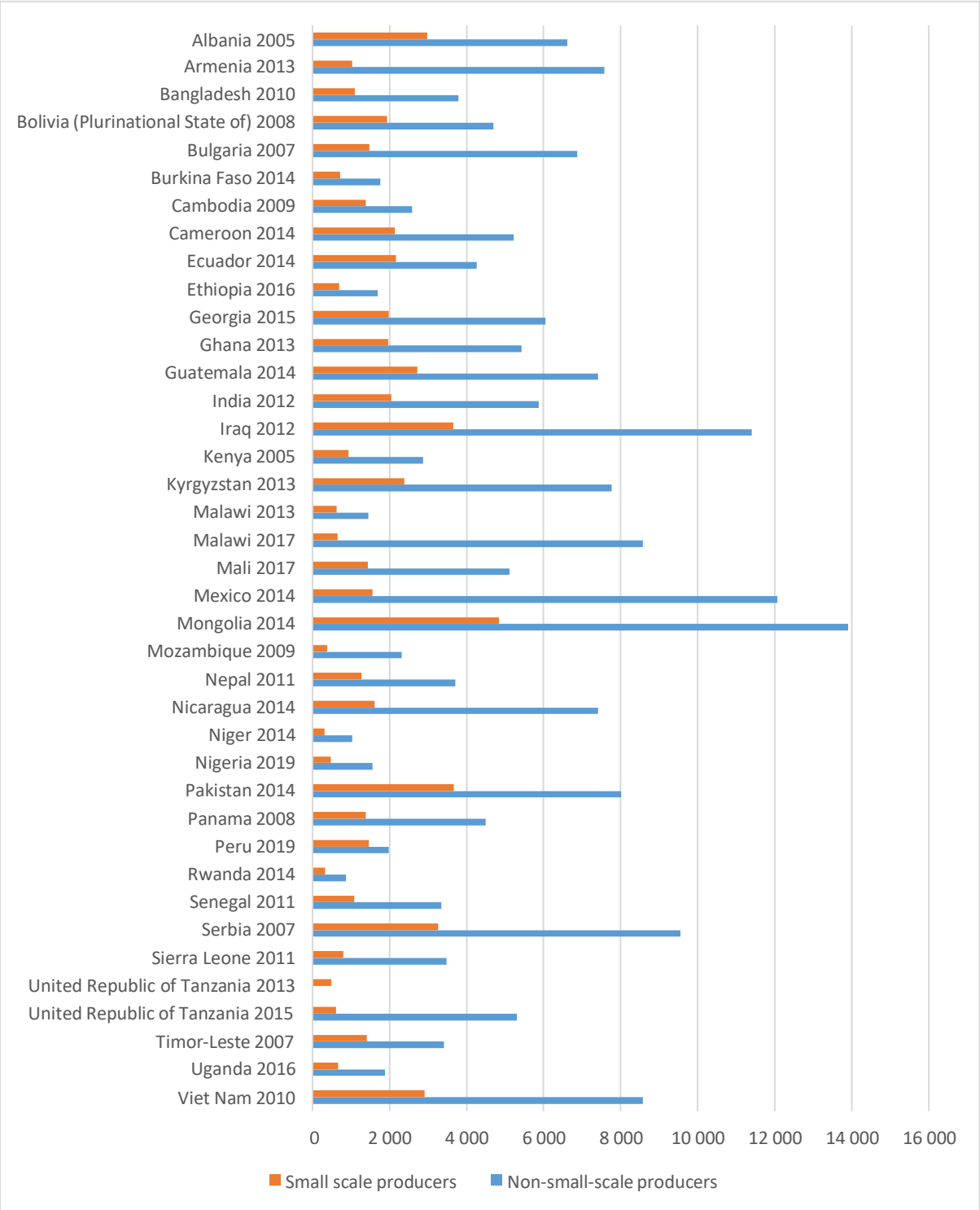
and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment

The incomes of small-scale food producers are, on average, less than half those of larger food producers, whereas the incomes of women small-scale food producers are systematically less than those of their male counterparts

Information on SDG indicator 2.3.2 - the income of small-scale producers - is available in a higher number of countries compared to the information available for indicator 2.3.1 on the productivity of small-scale food producers. The average annual income of small-scale producers ranges from around USD 300 (Malawi, Mozambique and Niger) to more than USD 3 000 (Albania, Guatemala, Iraq and Serbia). In most countries, larger-scale producers earn up to two or three times the annual income of small-scale producers. In Sierra Leone and Malawi, this difference is four-fold, in Mozambique it is six-fold, in Armenia seven-fold and in Mexico eight-fold (Figure 14).

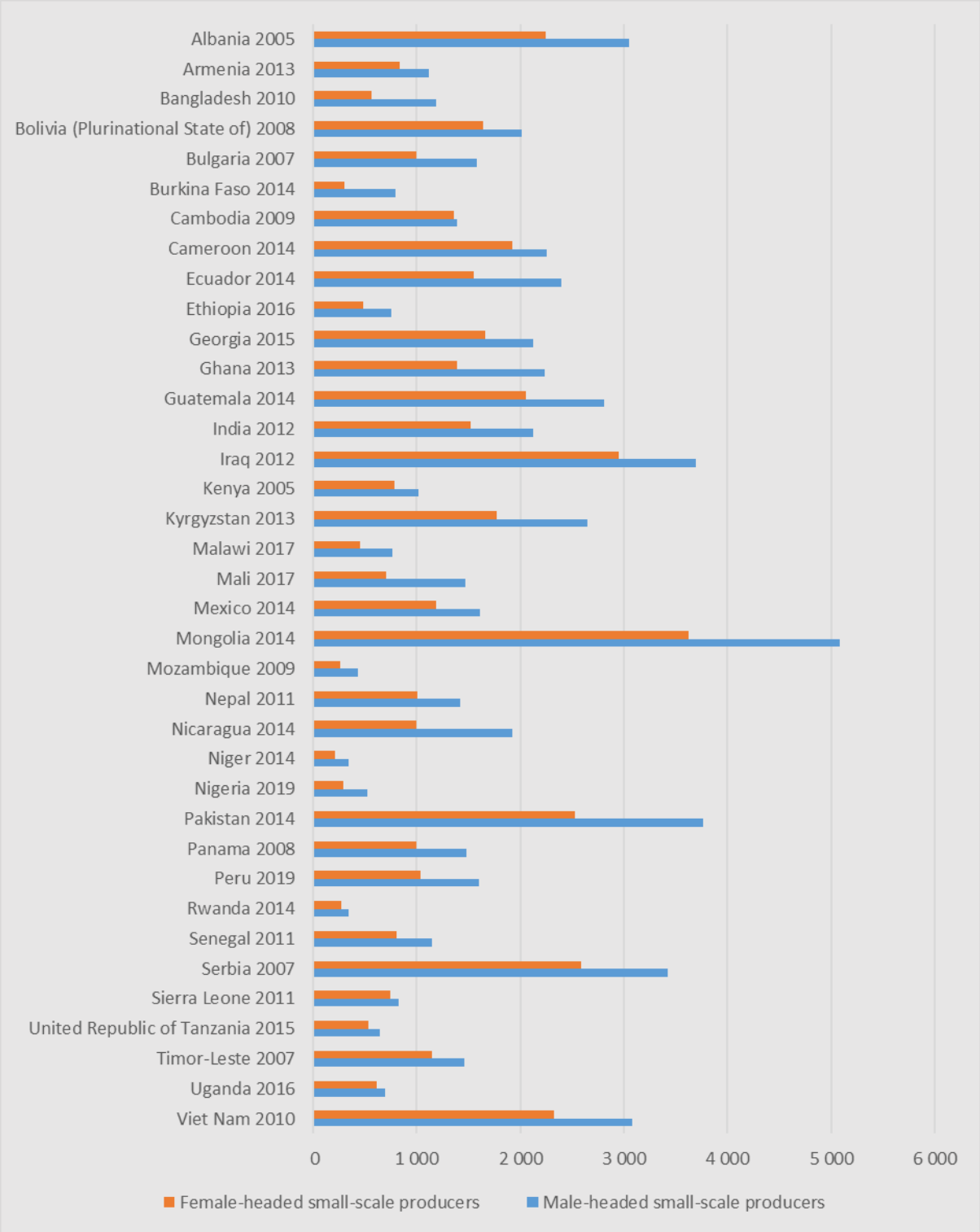
In all countries with available data, male-headed households present a larger annual income than female-headed households. This is a particularly worrisome finding given that, as revealed by SDG indicator 2.3.1, the productivity of women small-scale food producers are often on par or even exceeds the productivity of men small-scale food producers. In Bangladesh, female-headed households earn on average only half of the agricultural income earned by male-headed households, whereas in Bulgaria, they earn about one third of the income of male-headed households. In Rwanda and United Republic of Tanzania, the differences are smaller than in other countries.

Figure 14: SDG indicator 2.3.2 Average income small-scale food producers in PPPs (constant 2011 international USD)



SOURCE: FAO, 2021c.

Figure 15: SDG indicator 2.3.2 Average income of small-scale food producers by sex of the household head, PPPs (constant 2011 international USD)



SOURCE: FAO, 2021c.

SDG INDICATOR 2.5.1.A

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

Status assessment: Not possible due to absence of numerical yardstick in target

Trend assessment: Slight or no improvement

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.

COVID-19 has slowed down the growth rate of global holdings of plant genetic resources to its lowest level ever

Global holdings of plant genetic resources for food and agriculture in 2020 showed no significant changes over the previous year. Growth rate of the global holdings has decreased in the past ten years reaching its lowest level in 2020. The first year of the COVID-19 pandemic has likely accelerated this negative trend by affecting genebanks' operations, including new germplasm collecting and acquisition activities. The on-going preparatory process of *The Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture* has helped to increase the number of reporting countries from 103 to 114. The newly reporting countries were four from Central America, three from Western Africa and Central Asia, and one from Southeastern Asia.

Overall, diversity of crop wild relatives, wild food plants, and neglected and underutilized crop species continues to be under-represented in ex situ collections and this is of particular concern given the increasing pressure faced by these plant species in both natural and agricultural environments.

Plant genetic resources underpin the world's food security and nutrition, as well as the livelihoods of millions of farmers. They play a key role in the adaptation of crops to changing environments and the sustainable intensification of agricultural production.

At the end of 2020, 5.7 million accessions of plant genetic resources for food and agriculture were reportedly conserved under medium or long-term conditions in 831 genebanks by 114 countries and 17 regional and international research centres, about 0.2 percent increase on the previous year. Estimates were based on updated reports from 70 countries and 14 research centres, representing 82.6 percent of the total holdings, and on reports from recent years for the remaining countries and centres.

Net increases in genebank holdings with the highest relative increase (+22 percent) were observed in Oceania excluding Australia and New Zealand, followed by sub-Saharan Africa (+1.8 percent), Northern Africa (+1.3 percent) and Southern Asia (+1.1 percent). Over the year, conserved germplasm increased more than one percent in 19 out of 70 countries and 4 out of 14 regional or international centres.

Net decreases in genebank holdings, greater than one percent, occurred in seven countries, three in Europe (-11.4, -3.7 and -1.7 percent), two in Western Asia (-38 and -2.7 percent) and one each in South-eastern Asia (-12.1 percent) and South America (-3.5 percent). Losses were ascribed to the identification and elimination of duplicates in Europe and to insufficient human and financial resources in the remaining regions.

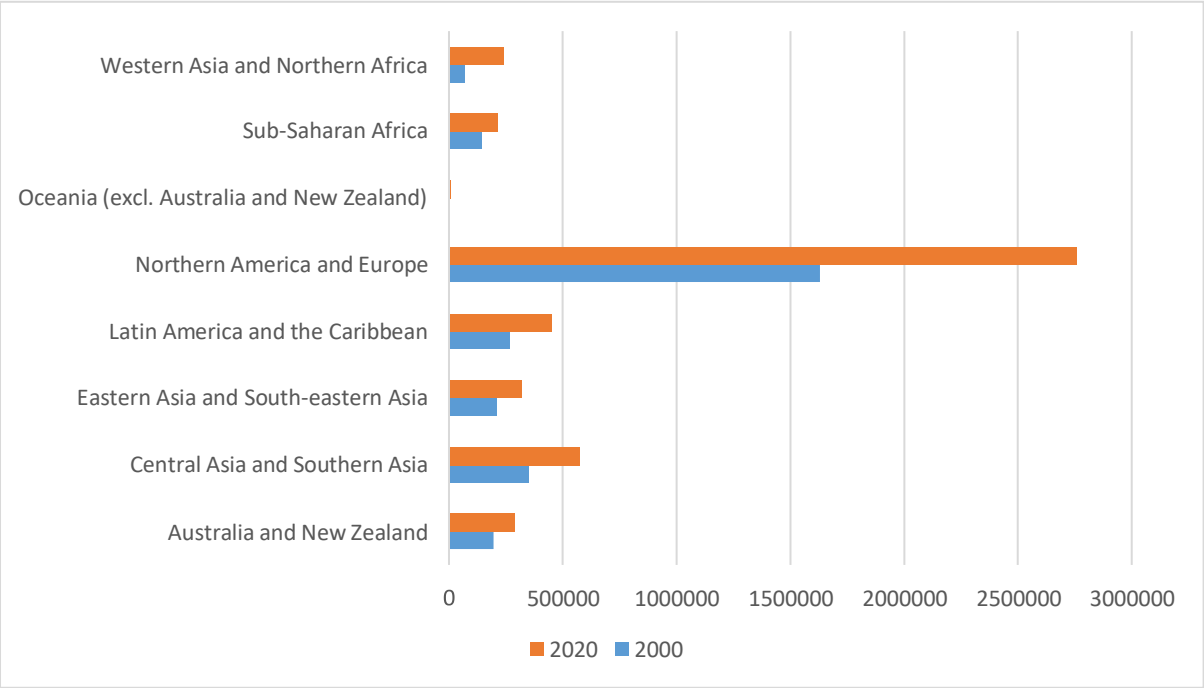
As of December 2020, 355 genebanks around the world conserved 125 027 samples from over 2 276 species listed in the International Union for Conservation of Nature (IUCN) categories of global major concern. Among these are underutilized crops and wild relatives of crops particularly important for global and local food security, as well as livelihood also in marginal environments, like arid and semi-arid zones. They include upland cotton, sweet potatoes, coffee, plums, apricots, Levant cotton, apples, mat beans and year-long beans, as well as wild relatives of wheat, oats, chickpeas, lupines and rice.

Over the last 25 years, the augmenting pressure posed by climate change to crop and crop-associated diversity under on-farm and wild conditions 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 in the gene bank collections or have their intraspecific diversity poorly represented.

Figure 16: Number of accessions of plant genetic resources secured in medium- or long-term conservation facilities in the world, 1995–2020

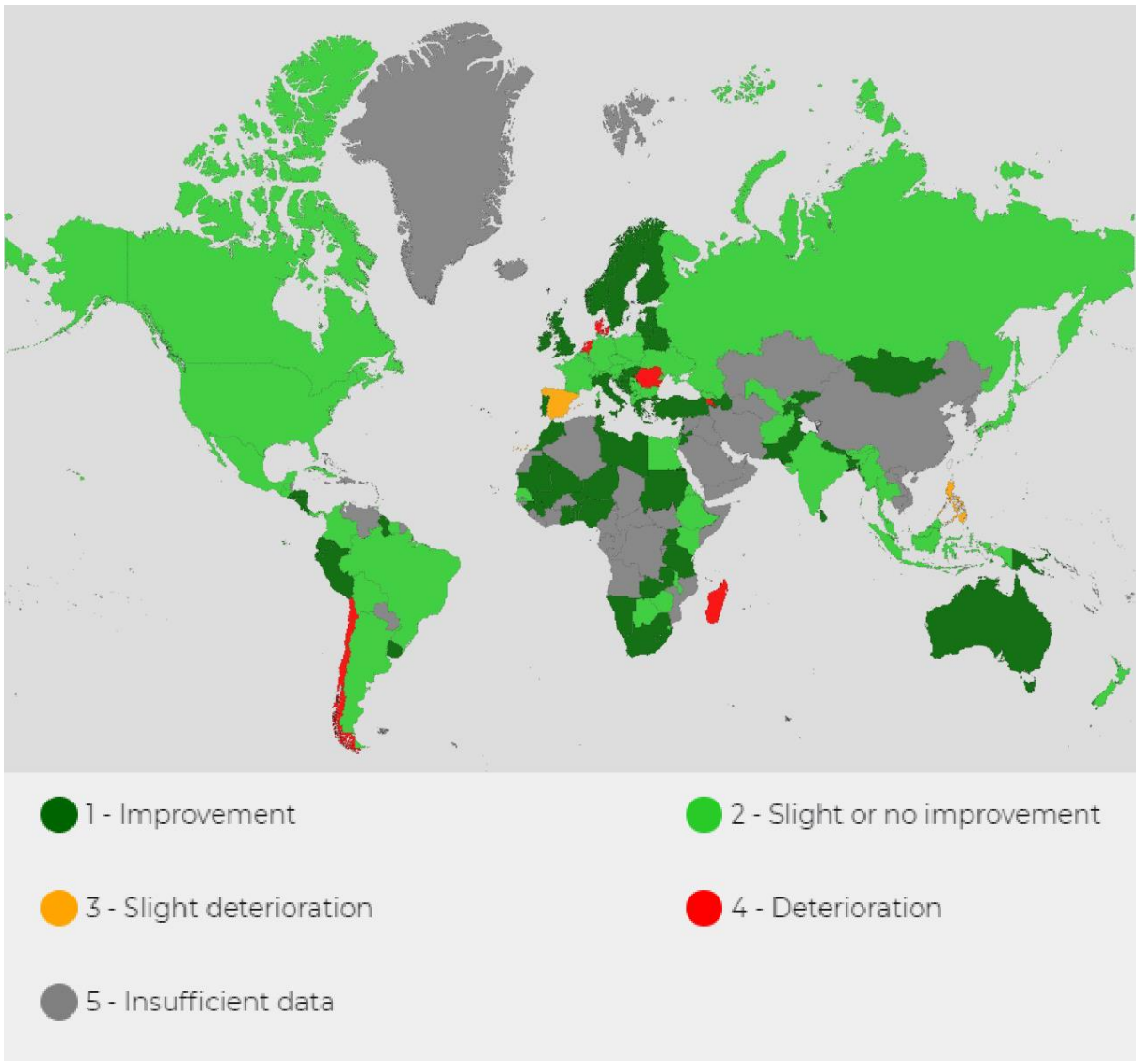
SOURCE: FAO, 2021c.

Figure 17: Plant genetic resources accessions stored *ex situ* (number)



SOURCE: FAO, 2021c.

Figure 18: Progress towards increasing the number of plant genetic resources secured in medium or long-term conservation facilities, 2016–2020



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, 2021c, modified to comply with UN Geospatial, 2021.

SDG INDICATOR 2.5.1.B

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

Status assessment: Not possible due to absence of numerical yardstick in target

Trend assessment: Not possible due to insufficient data

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.

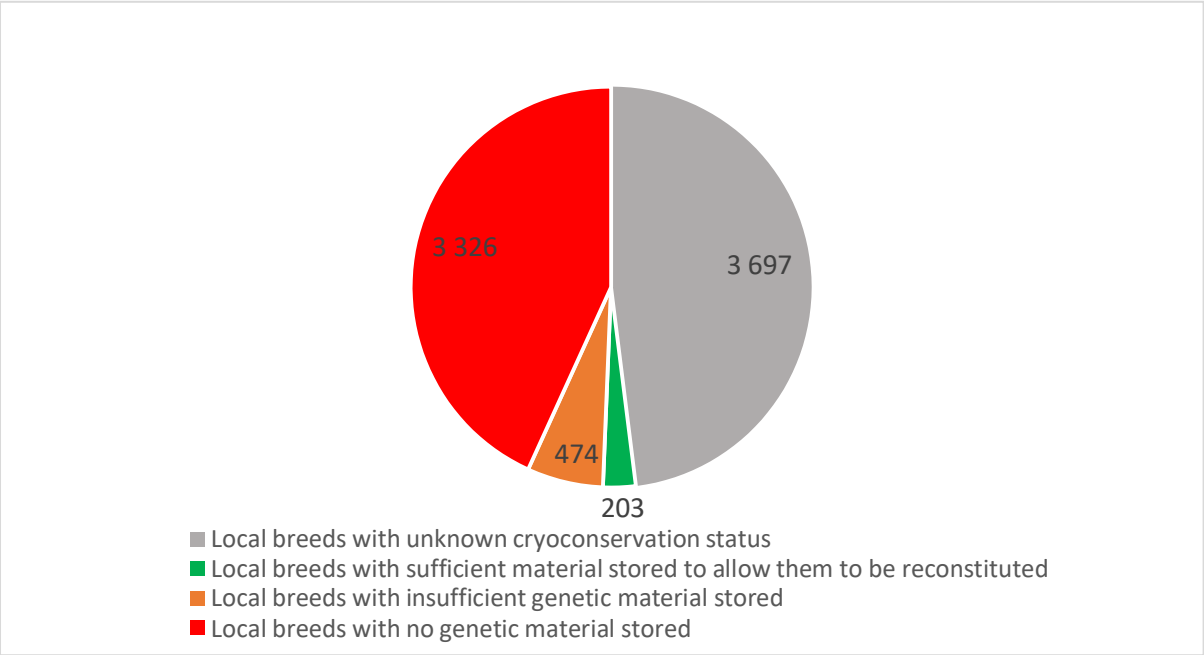
In addition to plant genetic resources, animal genetic resources are equally vital for the food security and livelihoods, allowing the adaptation of livestock to evolving environmental conditions and thus bolstering the resilience of food systems in the face of climate change

A good way to measure the conservation of animal genetic resources for food and agriculture is counting the number of local livestock breeds (i.e. breeds occurring in only one country) with sufficient material stored in genebanks to allow them to be reconstituted in case of extinction. This information is provided annually to FAO's Domestic Animal Diversity Information System (DAD-IS) by designated national focal points.

Between 2010 and 2021, the number of local breeds with sufficient material stored in genebanks increased from 10 to 203. This may appear like a significant increase, yet it represents a fraction of the approximately 7 700 breeds reported globally and is still a far cry from the SDG target calling on the international community to halt the loss of animal genetic resources for food and agriculture.

Out of a world total of 7 700 registered local breeds (including extinct ones), 8.7 percent are reported with some genetic material stored, out of which 2.7 percent are reported with sufficient material stored to allow them to be reconstituted. This reflects negligible progress compared to the preceding year, when only 5.2 percent of local animal breeds had some material stored, and only 1.3 percent had enough material to allow the breed to be reconstituted in case of extinction.

Figure 19: Proportions of local breeds (including extinct ones) with sufficient, insufficient and no genetic material stored, 2020



SOURCE: FAO, 2021c.

Challenges to measuring animal genetic resources in genebanks

Accurately measuring global efforts to conserve animal genetic resources in genebanks is hampered by under-reporting of national inventories. A staggering 56.5 percent of local livestock breeds have no information as to their conservation status. Only about 30 countries report data on this indicator – the majority of them in Western Europe – and even this data is not regularly updated. Ongoing efforts to preserve animal genetic resources appear inadequate in the face of climate change and the rising demand for livestock products.

SDG INDICATOR 2.5.2

Proportion of local breeds classified as being at risk of extinction

Status assessment: Not possible due to absence of numerical yardstick in target

Trend assessment: Not possible due to insufficient data

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.

Genetic diversity of farmed and domesticated animals remains under threat (or remains threatened)

Genetic diversity in live animal breeds is important to agriculture and food production. It enables livestock to be raised in various environments and provides a wide range of products and services (food, fibres, manure, draught power, etc.). While SDG indicator 2.5.1.b revealed that only a minute fraction of the local livestock breeds have sufficient material stored in case of extinction, SDG indicator 2.5.2 provides a measure of the actual risk of extinction for each living local livestock breed.

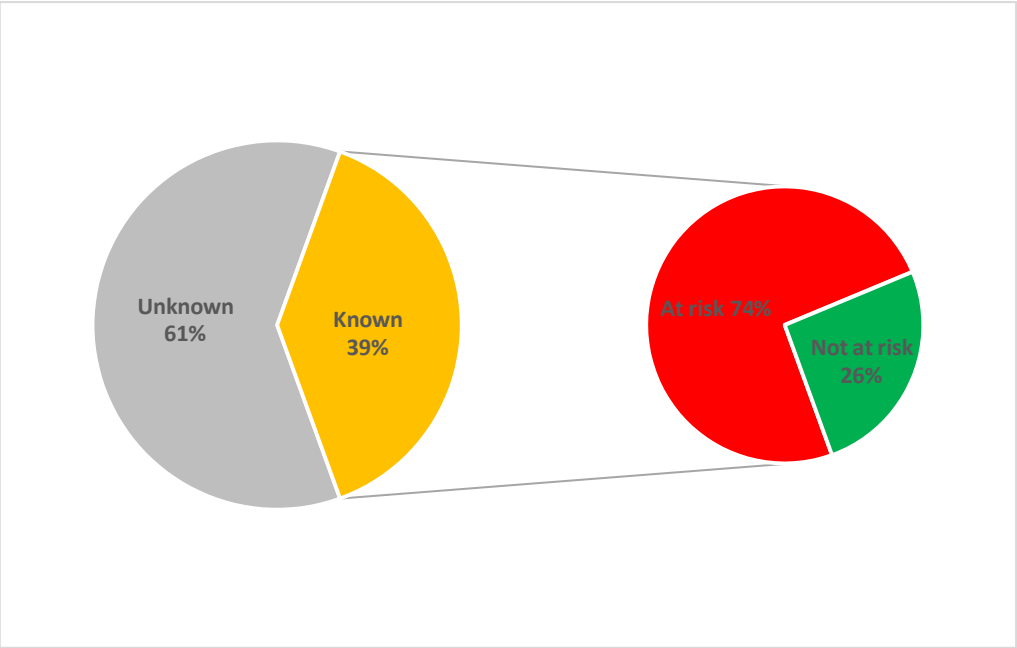
The fact that animal genetic resources are not being adequately conserved in medium- and long-term conservation facilities is particularly worrisome since, according to the latest country reports, an alarming proportion of local breeds are at risk of extinction.

Of the limited number of surveyed local livestock breeds, 74 percent are deemed at risk of extinction due to the number of living animals in a population falling below certain thresholds, whereas the risk status of 61 percent of local breeds across the world remains unknown.

Results between regions differ. Among breeds with known risk status: 84 percent are considered to be at risk in Europe; 42 percent are considered to be at risk in South America; 66 percent are considered to be at risk in Southern Africa.

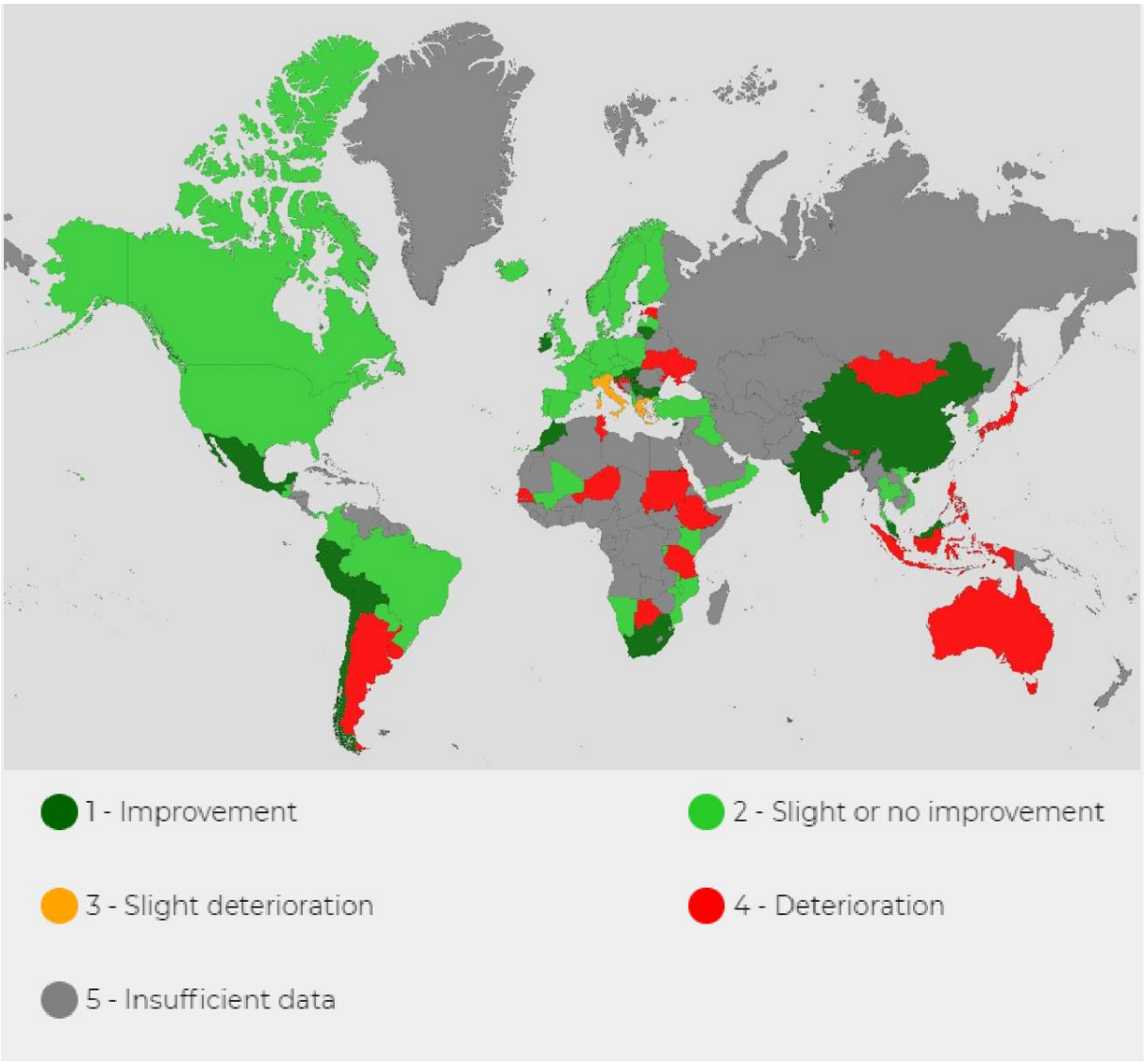
Due to the scarce information reported, results for other regions are considered to be not representative.

Figure 20: Proportion of local livestock breeds around the world by risk status, 2020



SOURCE: FAO, 2021c.

Figure 21: Progress toward the target of reducing the proportion of local breeds at risk of extinction, 2015–2021



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, 2021c, modified to comply with UN Geospatial, 2021.

SDG INDICATOR 2.A.1

Agriculture orientation index for government expenditure

Status assessment: Not possible due to absence of numerical yardstick in target

Trend assessment: Improvement

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

Globally, the agricultural orientation index has only marginally increased since 2001, but this masks wide variations across regions, with progress made in Asia, but declines noted in several other regions

Improved access to new agricultural technologies, credit services and information resources for farmers enhances agricultural productivity and incomes, contributing to inclusive economic growth and reduction in poverty, especially in the more economically vulnerable rural areas. Public investment in agriculture plays a critical role in providing agricultural workers with these inputs and also in attracting private investment.

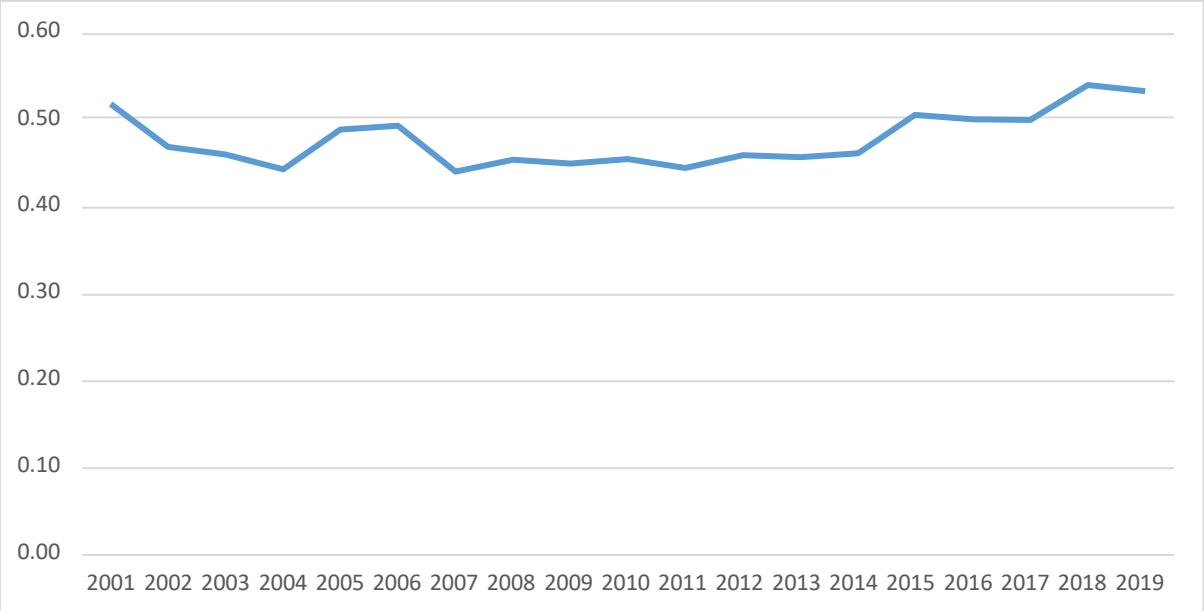
The agriculture orientation index (AOI) for government expenditure – that compares government expenditure for agriculture, fishing and forestry and the sector's contribution to GDP - registered a modest increase at the global level between 2001 and 2019 - from 0.52 to 0.53. This is the result of a small parallel increase in the value added share of agriculture, fishing and forestry, and an even greater increase of public expenditure dedicated to these sectors.

Notable increases in the regional AOI were reported for Eastern and South-eastern Asia, from 0.64 to 1.06 between 2001 and 2019, primarily driven by China. However, other regions such as sub-Saharan Africa reported a decline of AOI from 0.17 to 0.13 between 2001 and 2019. Similar decrease in AOI was observed in Oceania, and Europe and Northern America, during the same period.

Between 2001 and 2019, sub-regions that reported notable increases in AOI include the Caribbean (from 0.39 to 0.93), Central America (from 0.28 to 0.34), Central Asia (0.27 to 0.48), and Eastern Asia (from 0.73 to 1.21). The sub-regions of Europe (from 0.50 to 0.38) and Northern America (1.02 to 0.63) showed a declining trend in AOI.

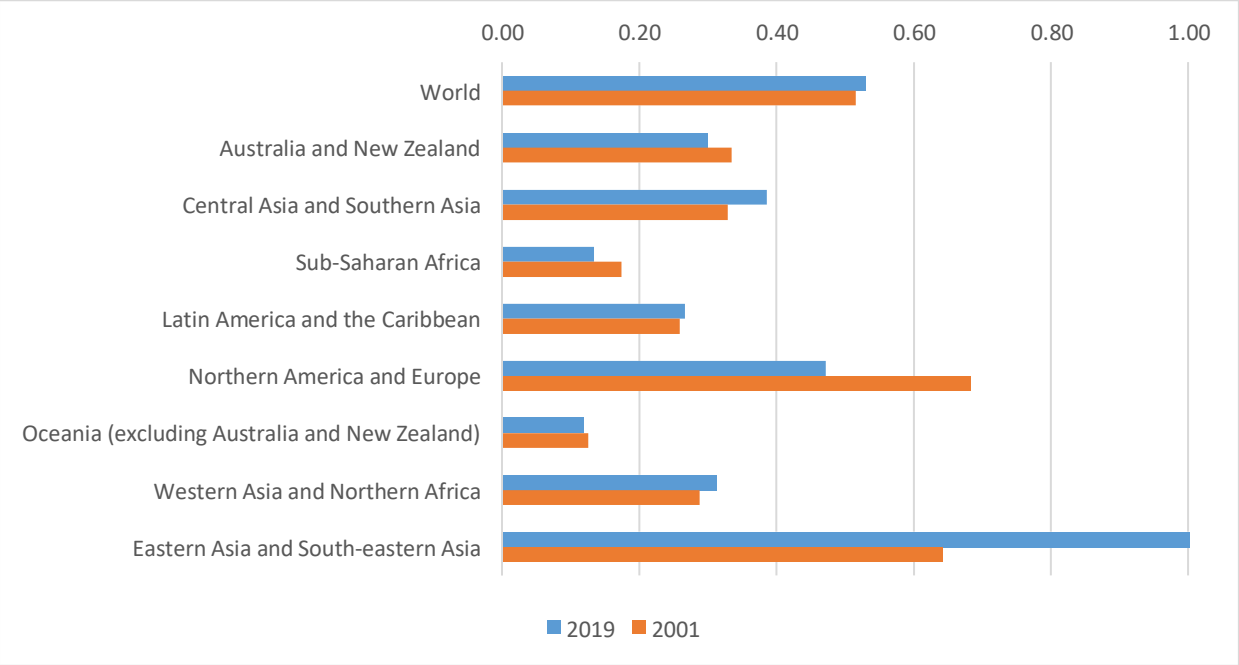
Both Land Locked Developing Countries (LLDCs) and Least Developed Countries (LDCs) showed a modest increase in AOI, from 0.22 to 0.28, and from 0.15 to 0.21, respectively, between 2001 to 2019.

Figure 22: Agricultural orientation index: Share of Government Expenditure in Agriculture in relation to Agriculture share of GDP, 2000–2019



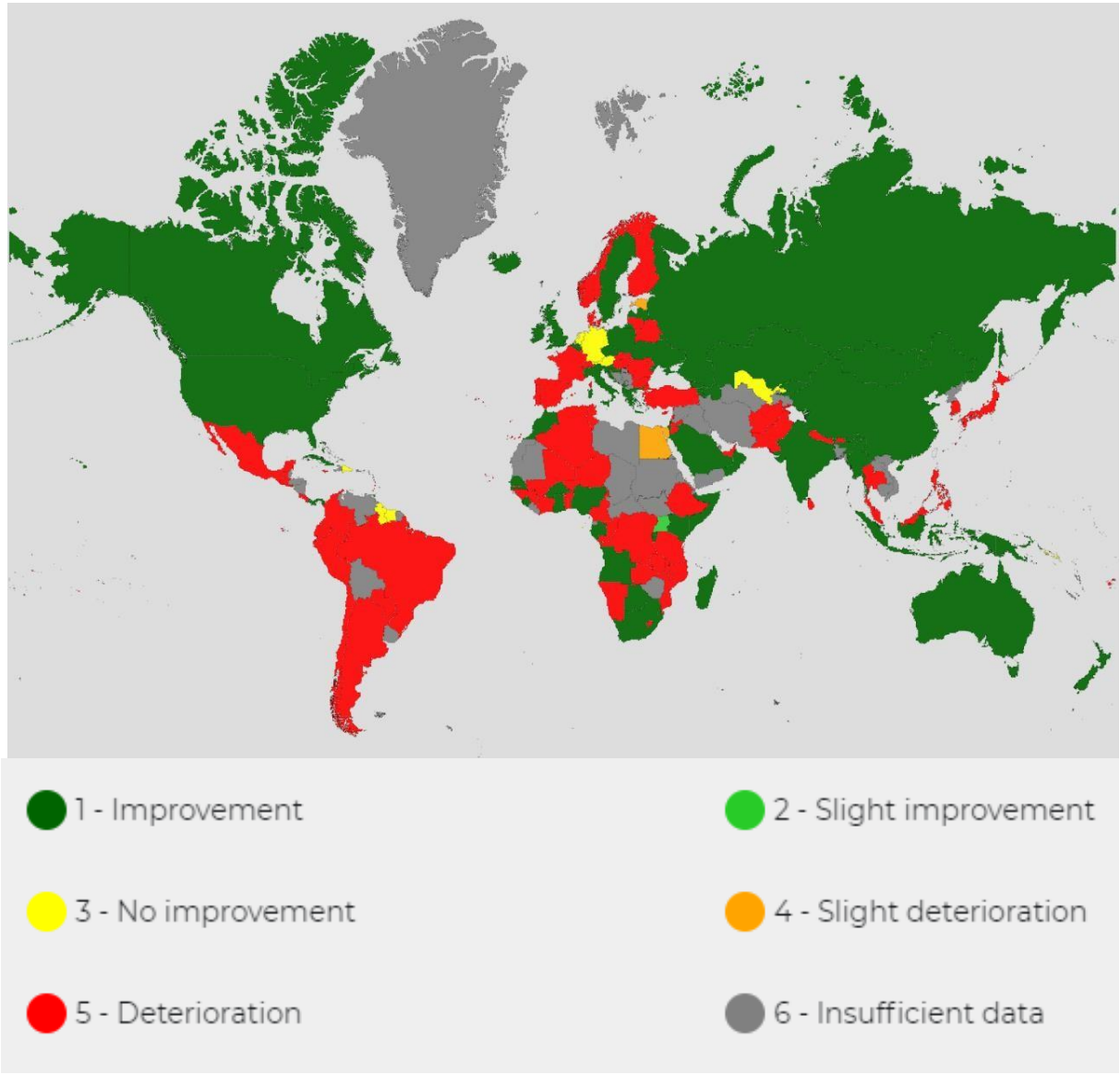
SOURCE: FAO, 2021c.

Figure 23: Agricultural orientation index by SDG sub-regions



SOURCE: FAO, 2021c.

Figure 24: Change in Agricultural orientation index, 2015–2019



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, 2021c, modified to comply with UN Geospatial, 2021.

SDG INDICATOR 2.C.1

Indicator of food price anomalies

Global assessment not possible due to the methodological characteristics of the indicator

Target 2.c

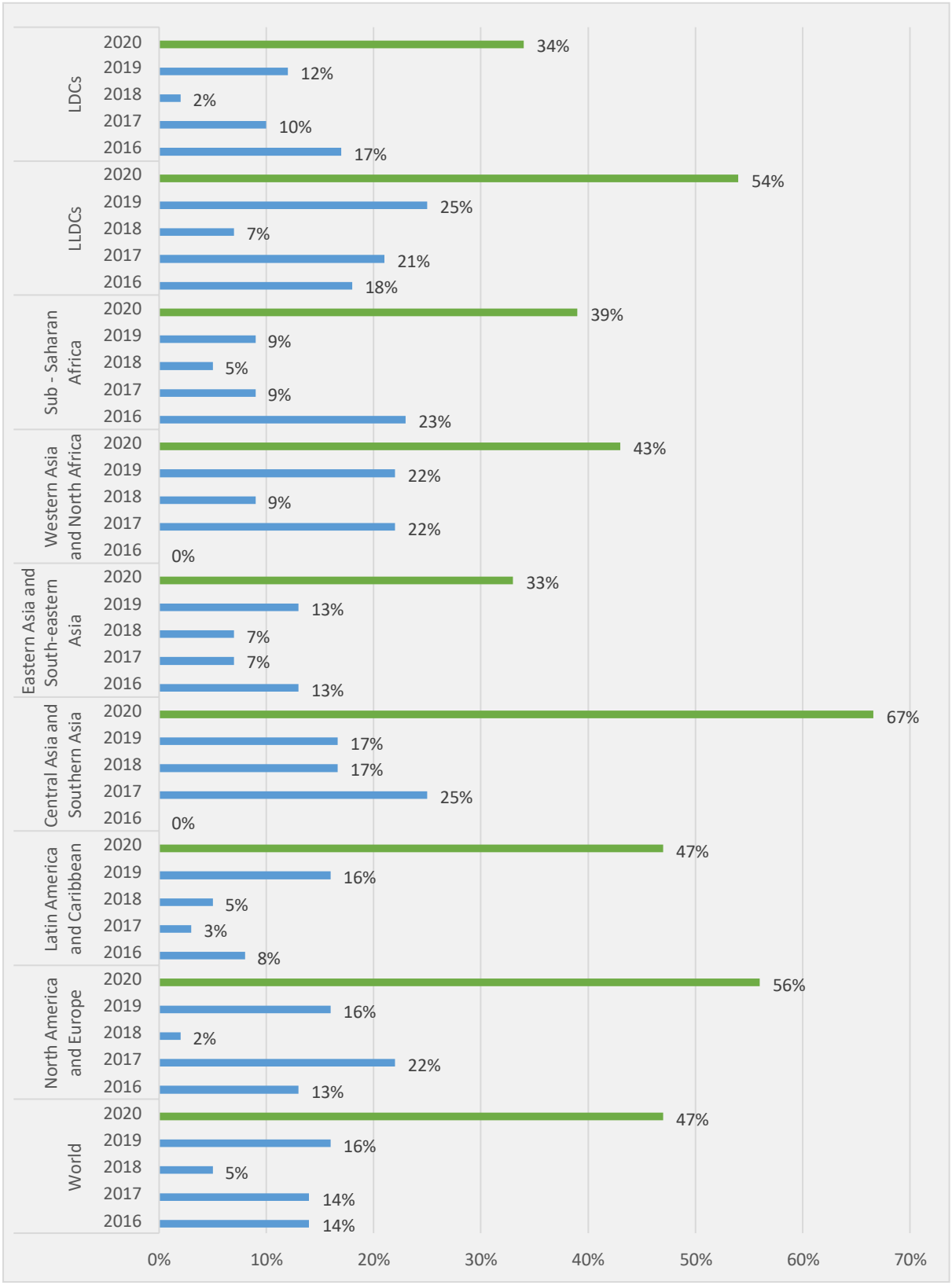
Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility

Globally the proportion of countries afflicted by high food prices increased sharply in 2020 after years of a decreasing trend

At the global level, the share of countries afflicted by high food prices, which had been relatively stable since 2016, rose sharply from 16 percent in 2019 to 47 in 2020, mainly attributed to trends in international markets. International prices of food items soared in the second half of 2020, more than offsetting declines in the first five months of the year, supported by the increase in international demand for cereals, vegetable oils, sugar and dairy products with the easing of the COVID-19 related restrictive measures in some countries. Upward price pressure also derived from domestic market factors. In some countries, prices of key food items soared due to massive-buying and hoarding amid the first wave of the COVID-19 pandemic, when restrictive measures related to the pandemic were introduced. An upsurge in the costs of freight and agricultural inputs exerted additional upward pressure on food prices in domestic markets. However, increases in domestic food prices were in part limited by the introduction of policy measures such as fiscal support to producers and consumers.

In 2020, the proportion of countries experiencing abnormally and moderately high food prices was highest in Central and Southern Asia (67 percent) and lowest in Eastern and South-eastern Asia (33 percent). In Latin America and the Caribbean, the share of countries afflicted by high prices rose year on year by 31 percentage points, reversing the declines in previous years. In Central, Southern and Western Asia and in North Africa, the market disruptions amid the COVID-19 pandemic further compounded pre-existing conditions, including reduced domestic availabilities of staple food and currency depreciations in some countries. In Oceania, price indices are only available for a handful of countries, making it difficult to draw conclusions about food price volatility at the regional level.

Figure 25: Proportion of countries by region affected by high or moderately high food prices in (2016–2020)



SOURCE: FAO, 2021c.

SUSTAINABLE DEVELOPMENT GOAL 5

Gender equality

Achieve gender equality and empower all women and girls.

INDICATORS
5.a.1 5.a.2

Overview

The socio-economic impacts of COVID-19 have resulted in major setbacks to progress made in recent years in relation to gender equality: violence against women and girls has intensified; child marriage, on the decline in recent years, is expected to increase; increased care work at home is affecting women disproportionately. The pandemic has highlighted the need to act swiftly to address existing gender inequality that remains pervasive globally. Women have played a critical role in the response to COVID-19, as frontline health providers, care providers and as managers and leaders of the response and recovery efforts. Yet, they remain under-represented in critical leadership positions and their rights and priorities are often not explicitly addressed in response and recovery measures. The crisis presents an opportunity to re-shape systems, laws, policies and institutions to advance gender equality.

International commitments to advance gender equality have brought about improvements in some areas in recent years: child marriage and female genital mutilation have declined in recent years, and women's political representation is continuing a slow upward trend. However, the vision of full gender equality across economic, social and political dimensions remains far from fulfilled. This is the case for ownership and/or secure tenure rights over agricultural land, which can be critical for determining access to credit and financial services. Although women make up a substantial share of the agricultural labour force in developing countries, relatively fewer women than men have ownership and/or legally secure tenure rights over agricultural land. Substantial progress is still needed in both legal frameworks and their implementation to realize women's land rights.

SDG INDICATOR 5.A.1

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

Status assessment: Not possible due to absence of numerical yardstick in target

Trend assessment: Not possible due to insufficient data

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

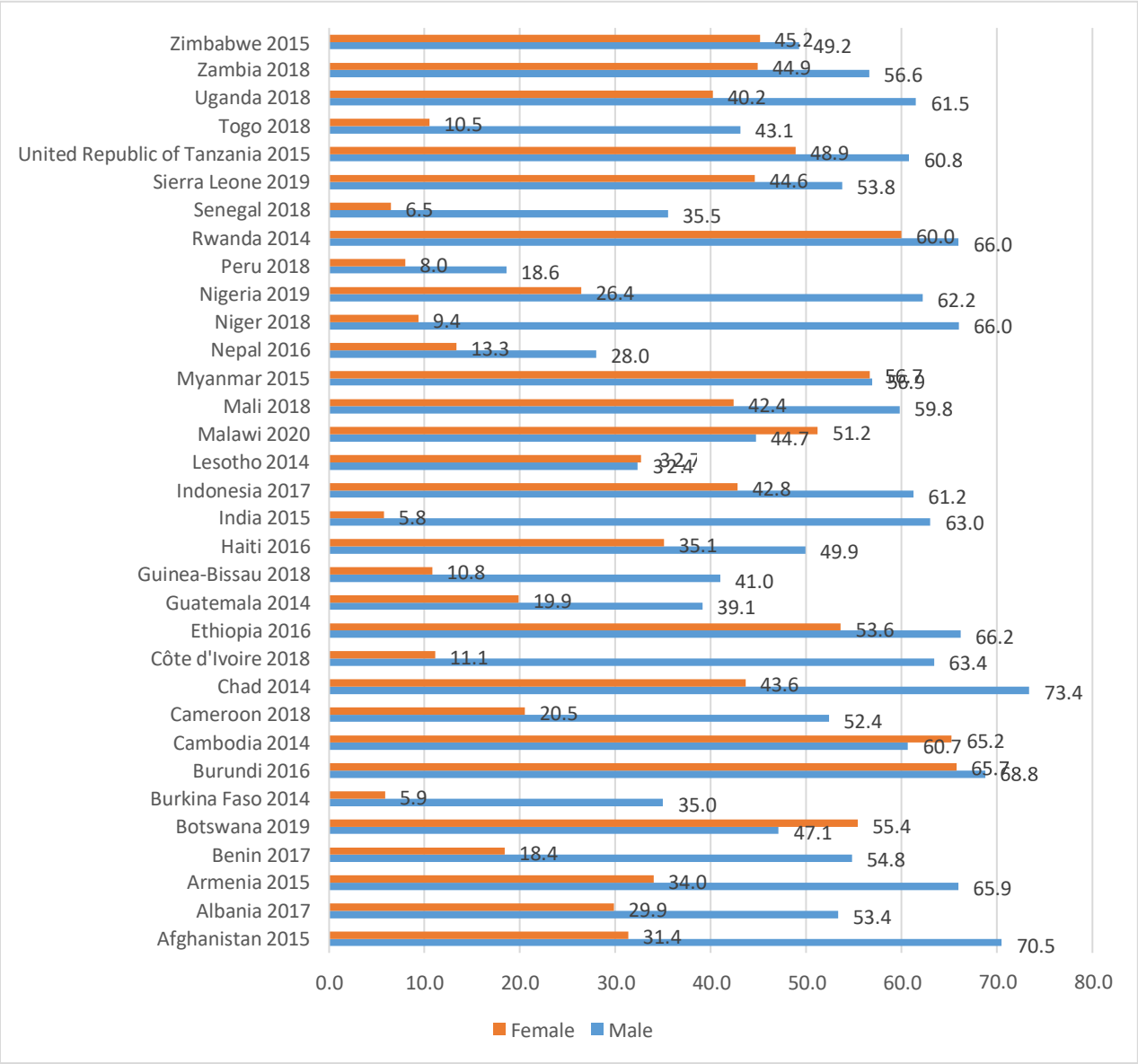
Relatively fewer women than men have ownership and/or secure tenure rights over agricultural land

Land is one of the most important assets for supporting agricultural production and providing food security and nutrition. Evidence suggests that owning or bearing rights to land reduces women's reliance on male partners and relatives and increases their bargaining power in the economy and within households. It also improves women's chances of accessing extension services and credit, and encourages them to undertake and expand their investments and join producer organizations. Therefore, women's land ownership and/or control is critical to achieving the economic dimension of gender equality, since land ownership gives rise to a host of benefits for women through an increase in their bargaining power within households and the economy. These benefits would not be restricted to women though; studies suggest that if women had equal access to land, poverty and food insecurity would be significantly reduced around the world.

However, that vision is far from realized: data shows that in most countries, less than 50 percent of women in the agricultural population[2] have ownership and/or secure tenure rights over agricultural land, and in 29 out of 33 countries assessed, relatively fewer women have such rights compared to their male counterparts. Indeed, in 13 out of these 33 countries, the share of women in agriculture having ownership and/or secure tenure rights over land is less than half compared to men. In addition, the share of men among landowners exceeds the share of women in 28 out of 33 countries assessed. Therefore, although it not always the case that male landowners outnumber women, this is by far the most prevalent situation. Indeed, the share of men among landowners reaches over 65 percent in twelve out of thirty-three countries. Hence, the overall inequalities in land ownership are quite evident across the world.

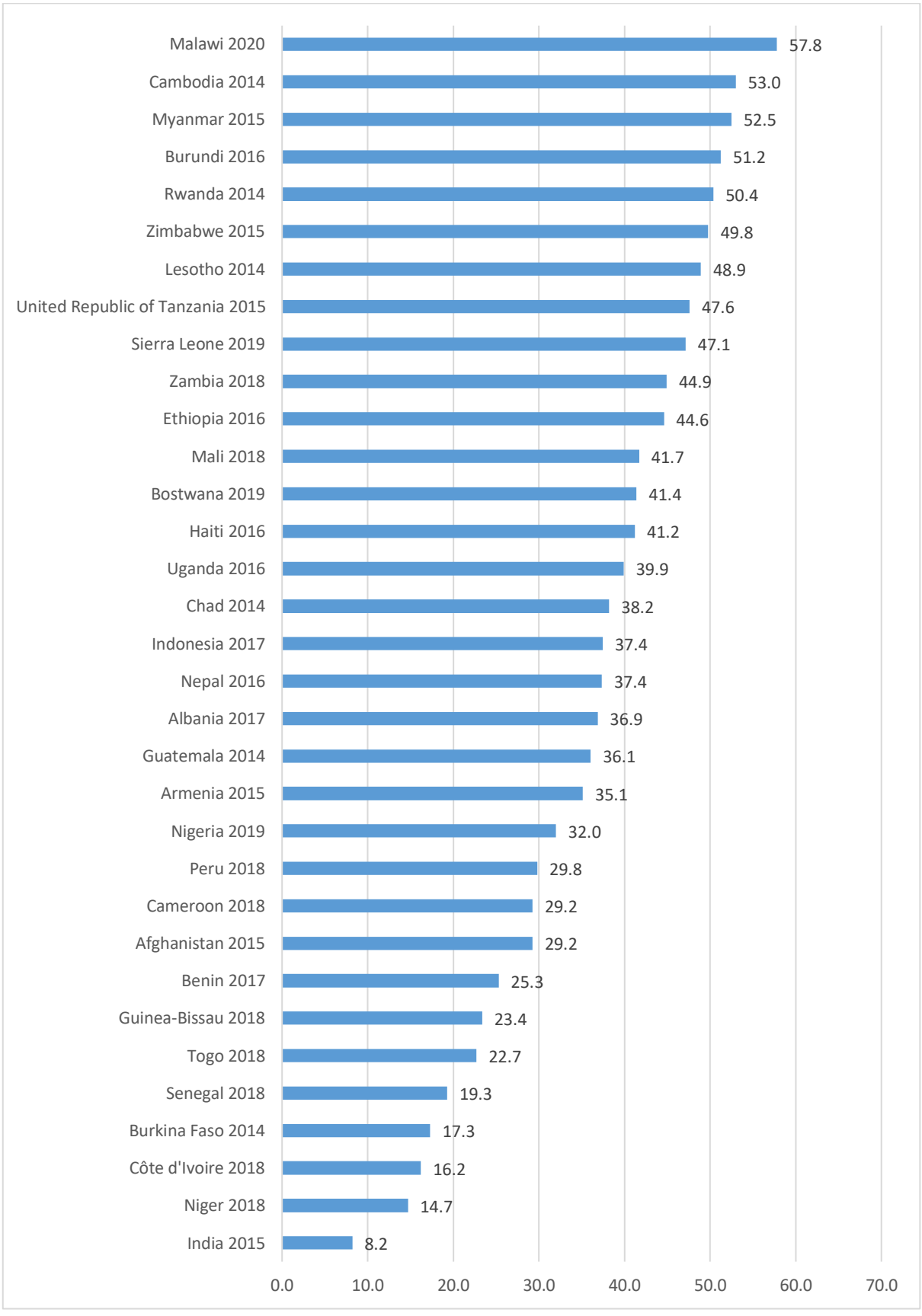
[2] Defined as adult individuals living in agricultural households, i.e. households that operated land for agricultural purposes and / or raised livestock over the past 12 months, regardless of the final purpose of the production.

Figure 26: Share of women and men in the adult agricultural population with ownership or secure rights over agricultural land



SOURCE: FAO, 2021c.

Figure 27: Share of women among owners or right holders



SOURCE: FAO, 2021c.

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

Status assessment: Not possible due to absence of numerical yardstick in target

Trend assessment: Not possible due to insufficient data

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

Legal frameworks do not provide enough guarantees for gender equality in ownership and/or control over land. Substantial progress is still needed both in formulating and implementing laws in order to realize women's land rights

Legal frameworks are fundamental for guaranteeing women's rights to ownership and/or control of land. However, the latest data available from 36 countries suggest that legal provisions included in national laws representing various regions, as well as different religious and cultural contexts, do not adequately protect women´s land rights.

For instance, 15 out of 36 countries have integrated joint-registration provisions in their laws; in 14 out of 36 joint registration of property is mandatory, while only one out of 36 countries has established financial incentives to encourage it. Without the inclusion of women's names and rights on the land registration document, women's property rights remain insecure, especially in case of divorce from or death of their husband or partner.

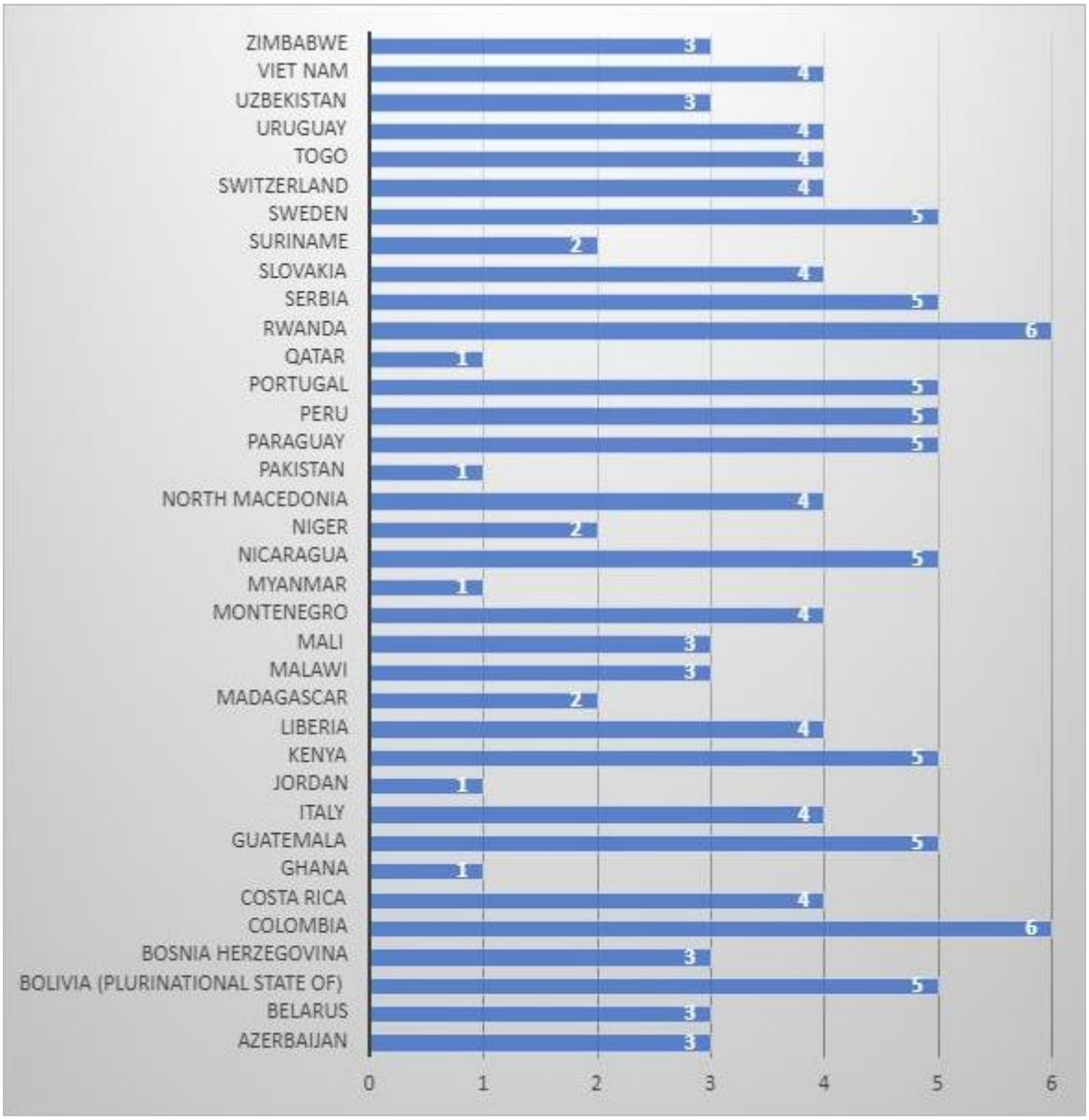
The most positive features in legal frameworks guaranteeing women's land rights concern the management of marital property and inheritance rights. Twenty two out of 36 countries have provisions establishing spousal consent requirements for land transactions and 25 out of 36 countries equally protect the rights to inherit of married couples and son and daughters. However, persistent social and cultural norms constitute an important obstacle for exercising and claiming inheritance rights, in particular in those countries where the legal framework provides for the supremacy of personal status law and/or custom in inheritance matters.

Moreover, in countries, where customary law is recognized, very often the rights of women are not explicitly protected if customary law conflicts with the formal law and therefore, they are more likely to be endangered by patriarchal norms. Only in half of the countries in which customary law is recognized, the principle of non-discrimination prevails in case of conflict. In addition, it is important to mention that women's property rights in informal unions are less protected in the law than those for married women, thereby leaving behind a large number of women. This is particularly relevant for issues concerning joint registration, consent for land transactions and inheritance rights.

Moreover, while some countries have adopted temporary special measures to support the realization of women's rights to land in the law and in practice in line with the Committee on the Elimination of Discrimination against Women (CEDAW), more still needs to be done. SDG indicator 5.a.2 includes two positive measures. One is related with the allocation of financial resources for facilitating women's purchase of land, and the second with the establishment of mandatory quotas to foster women's participation in land institutions. Only 12 out of 36 countries have established mandatory quotas to ensure women's participation in land governance institutions. Evidence shows that when women participate in decision making processes, it is more likely that their interests and priorities are considered. Finally, only six countries have provisions in their frameworks allocating financial resources for facilitating women's purchase of land. These figures show that more efforts need to be done to ensure that women are represented in land related institutions and that programs to increase women's land ownership and/or control are financially resourced.

While contextual information suggests that over the last three decades, many countries have changed their legislations with a view to promoting gender equality, evidence from the current reporting countries under SDG indicator 5.a.2 shows that progress needs to continue if we are to advance women's land rights in the law and in practice. Indeed, provisions in legal frameworks of 15 out of 36 countries do not provide adequate guarantee to protect women's land rights (Figure 28 chart band 1, 2 and 3 representing no evidence of guarantees or very low or low levels). This is all the more pressing now that COVID-19 seems to have negatively affected women's land rights. For instance, there are reports of women being forced to cede their land after the death of their husbands, exposed to internal pressures to relinquish their rights to more powerful family or community members and experiencing difficulties to access to mediation and judicial systems for recourse.

Figure 28: Degree to which the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control [1=lowest; 6=highest]



SOURCE: FAO, 2021c.

SUSTAINABLE DEVELOPMENT GOAL 6

Clean water and sanitation

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

SUMMARY TABLE

INDICATORS
6.4.1 6.4.2

Overview

Billions of people worldwide still live without safely managed drinking water, sanitation and hygiene services. COVID-19 has brought to fore the critical importance of access to safe water and hygiene in protecting human health and containing the spread of the pandemic. Furthermore, water is also essential in reducing poverty and food security, ensuring peace and human rights, and improving ecosystems. Over the last century, global water use has increased at more than twice the rate of population growth. In addition to water stress, countries are facing growing challenges linked to water pollution, degraded water-related ecosystems, water scarcity caused by climate change. The world is not on track to achieve SDG 6. A dramatic acceleration in current rates of progress and integrated and holistic approaches to water management is needed.

SDG INDICATOR 6.4.1

Change in water-use efficiency over time

Status assessment: Not possible due to absence of numerical yardstick in target

Trend assessment: Improvement

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

Water use efficiency is improving in most regions, although the rate of progress varies widely

Improving water use efficiency is a key measure that can contribute to reducing overall water stress in a country, provided that it also leads to a parallel reduction of water withdrawals. Increasing water-use efficiency over time means using less water to produce the same amount of output, effectively decoupling economic growth from water-use across the main water-using sectors.

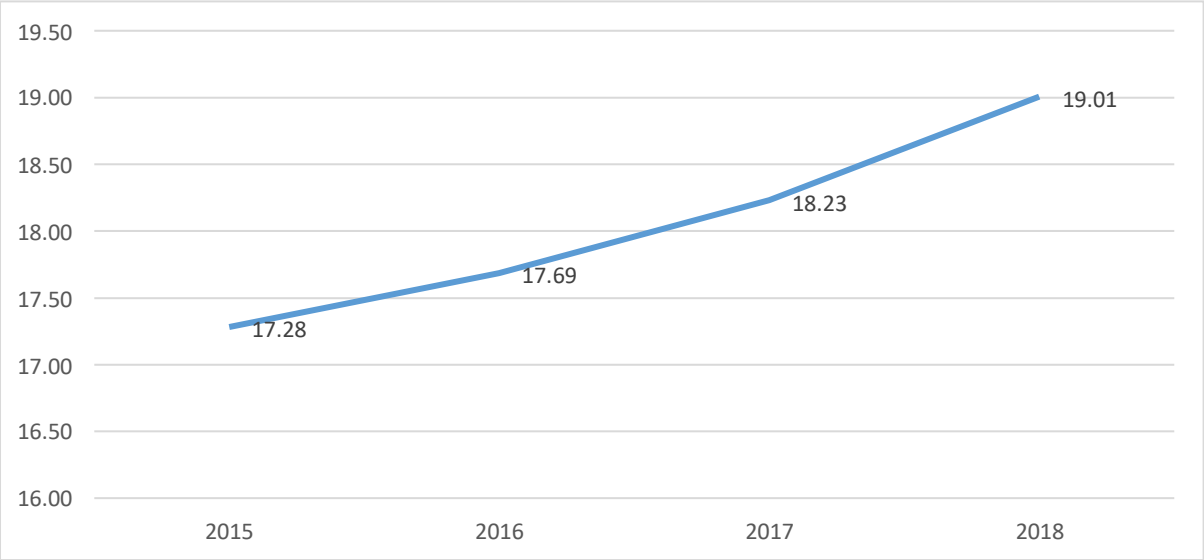
Across the world, water use efficiency rose from 17.28 USD/m^3 in 2015 to 19.01 USD/m^3 in 2018 worldwide, a 10 percent efficiency increase. Estimates for water use efficiency range from as little as 0.2 USD/m^3 for countries whose economies depend largely on agriculture, to 1 096 USD/m^3 in highly industrialized, service-based economiesthat are less dependent on natural resources. The majority of countries (two thirds) have a water use efficiency between 5 and 100 USD/m^3.

Regionally, water use efficiency in 2018 ranges from 2.5 USD/m^3 in Central Asia, to 62.34 USD/m^3 in Oceania, highlighting again the huge differences existing across the world. The figures also show that several regions have been faster at increasing water use efficiency over time. The highest proportional increases have been recorded in Central Asia and Southern Asia, while Oceania and Northern Africa show lower improvements, and Latin America and the Caribbean registered an actual decline in water use efficiency.

Agriculture tends to have a much lower water use efficiency compared to other productive sectors, meaning that a country's economic structure usually greatly affects its overall water use efficiency. Increasing agricultural water productivity is therefore a key intervention for improving water use efficiency, particularly in agricultural-reliant countries. The agriculture sector has seen an 8 percent increase in their water use efficiency since 2015. Other important measures include reducing water losses by tackling leakages in municipal distribution networks and optimizing industrial and energy cooling processes.

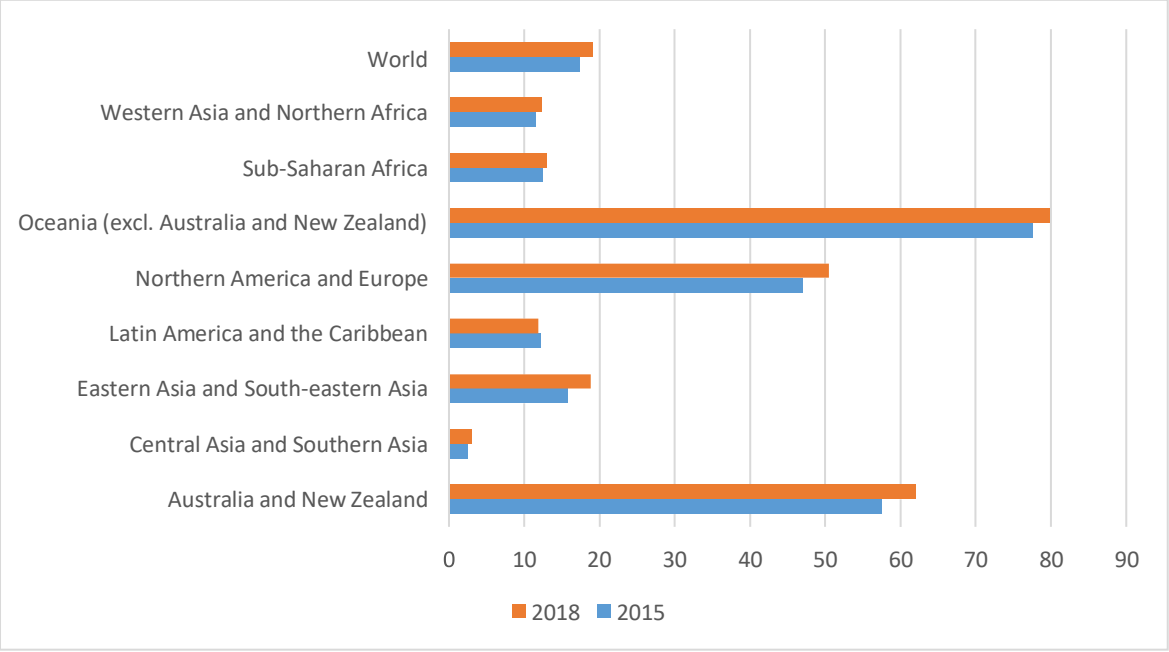
Around 56 percent of countries presented a water use efficiency equivalent to 20 USD/m^3 or less in 2018, compared to 58 percent in 2015.

Figure 29: Global water use efficiency, 2015–2018 (USD per m³)



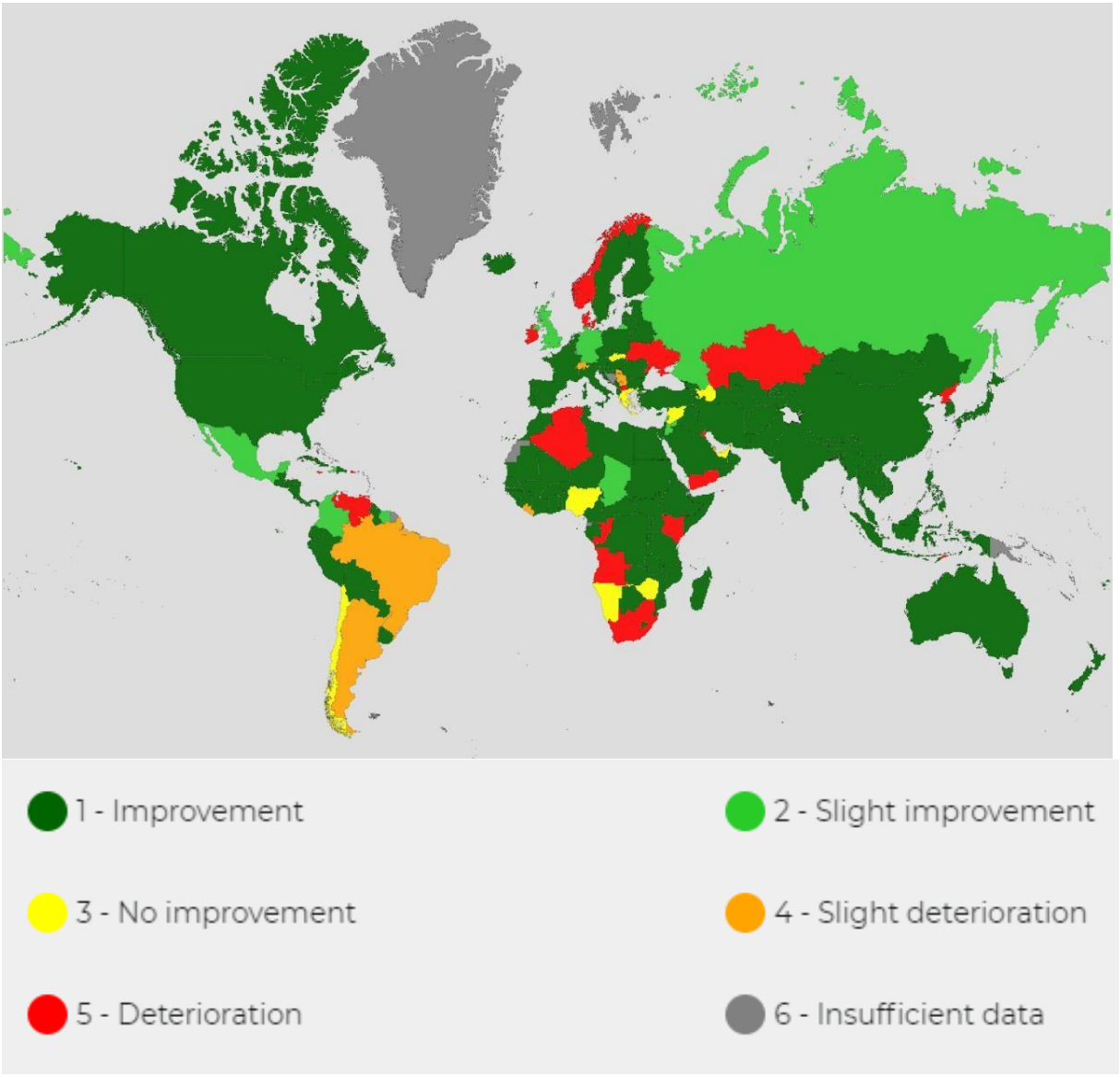
SOURCE: FAO, 2021c.

Figure 30: Water use efficiency by region in 2015 and 2018 (USD/m³)



SOURCE: FAO, 2021c.

Figure 31: Change in water use efficiency from 2015–2018



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, 2021c, modified to comply with UN Geospatial, 2021.

SDG INDICATOR 6.4.2

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

Status assessment: Not possible due to absence of numerical yardstick in target

Trend assessment: Not carried out due to methodological reasons

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

Water stress remains alarmingly high in many regions, threatening progress towards sustainable development

Water stress is one of the most serious current threats to sustainable development. High water stress – the withdrawal of too much freshwater from natural sources compared to the freshwater available – can have devastating consequences for the environment and hinder or even reverse economic and social development. The resulting water scarcity, which tends to disproportionately affect the most vulnerable people, could displace an estimated 700 million people by 2030.

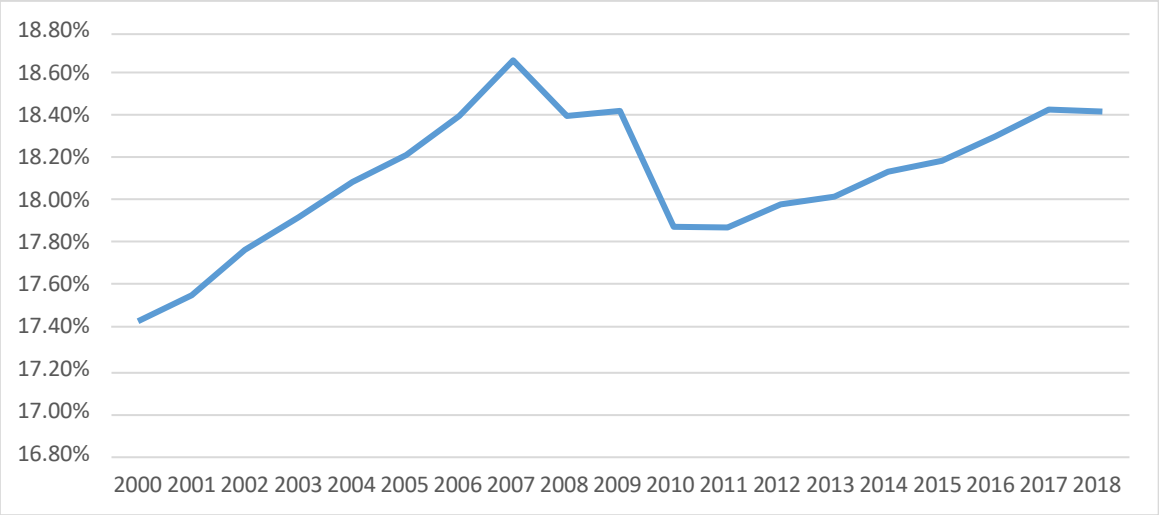
Water stress affects countries on every continent. High water stress has many undesirable consequences, such as hindering the sustainability of natural resources and hampering economic and social development, all of which tend to disproportionately affect the most vulnerable people.

Globally, water stress remains at a safe 18.4 percent, having risen slightly from 18.2 percent in 2015. However, the world average masks huge regional variations. For instance, Central and Southern Asia as well as Northern Africa all registered very high water stress over 70 percent, and experienced an upward surge in water stress between 2015 and 2018. Eastern Asia and Western Asia follow with water stress levels between 45 and 60 percent, with the latter registering an increasing water stress level since 2015.

For this reason, the gradually increasing trend of global water stress over the past 20 years reflects increasing stress in several areas of the world, which decreases in other areas of the world are not able to compensate.

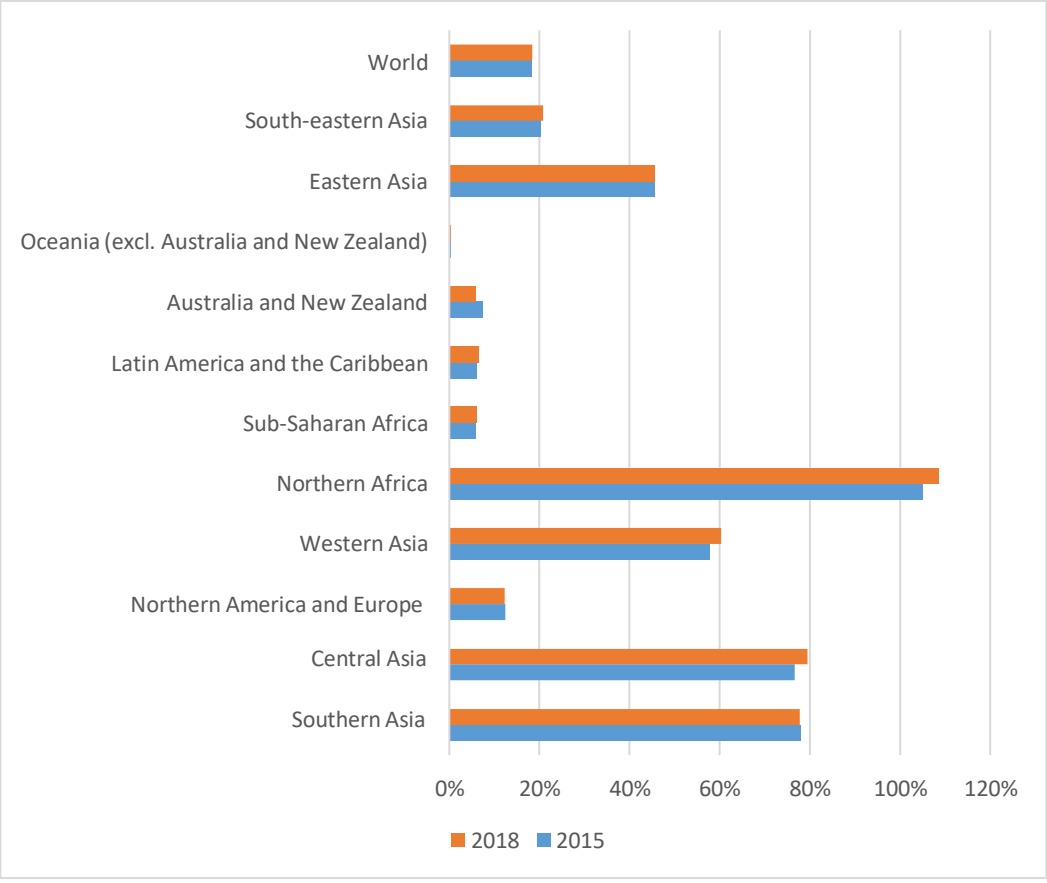
By contrast, the water stress in some regions such as sub-Saharan Africa and Central and South America is low enough to provide some countries with scope for sustainably increasing water use, provided that adequate precautions are taken. In regions affected by high water stress, urgent and concrete measures are required to save water and increase water use efficiency.

Figure 32: World water stress: freshwater withdrawal as a proportion of available freshwater resources, after taking into account environmental flow requirements, 2000–2018

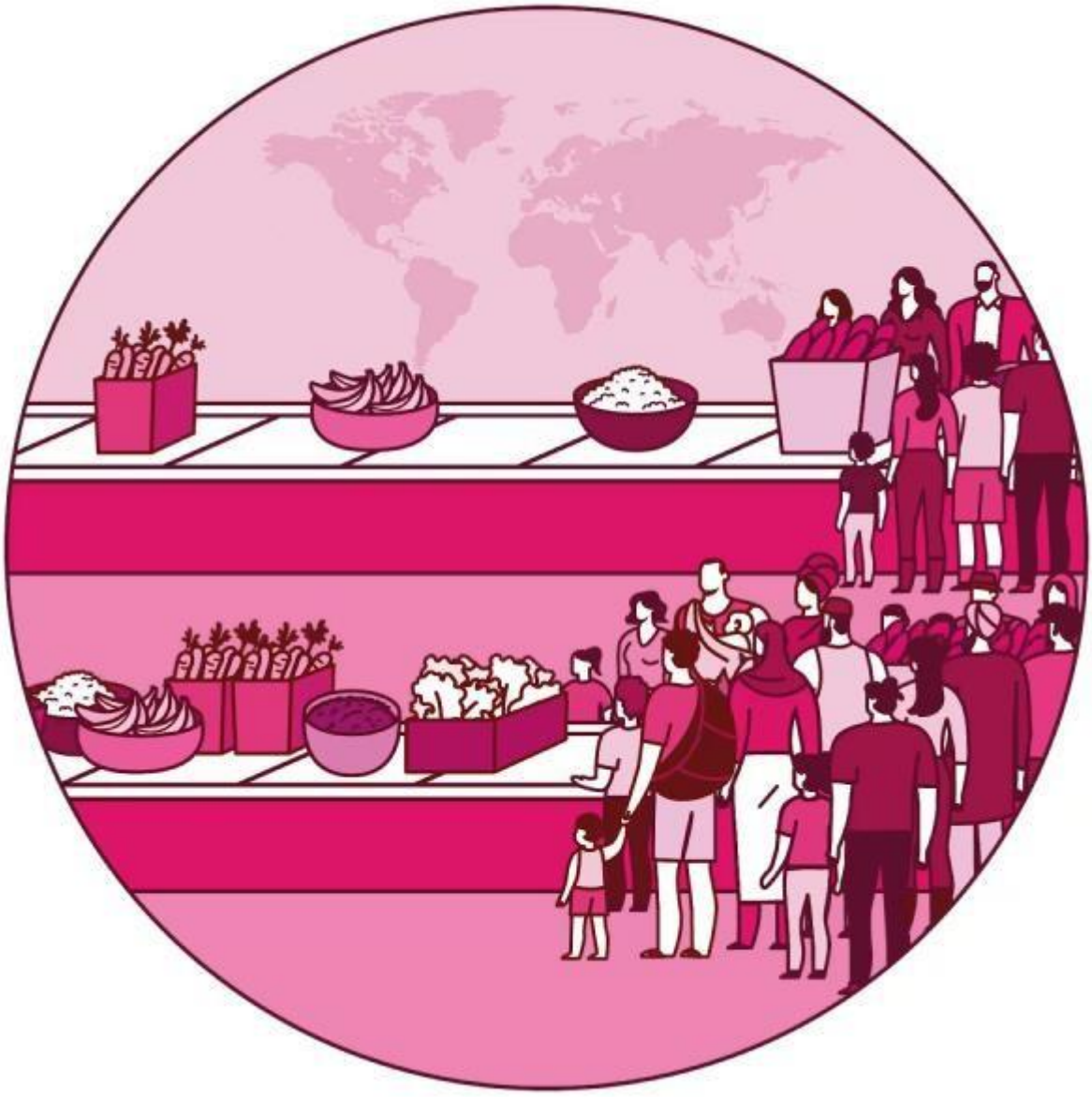


SOURCE: FAO, 2021c.

Figure 33: Level of water stress by region in 2015 and 2018 (%)



SOURCE: FAO, 2021c.



SUSTAINABLE DEVELOPMENT GOAL 10

Reduced inequalities

Reduce inequality within and among countries.

INDICATORS
10.a.1 2.b.1

Overview

Inequality in its many forms is a significant global challenge, although progress has been made towards reducing relative income inequality in some countries. However, the COVID-19 crisis has exacerbated systemic inequality since it has disproportionately affected the poorest and most vulnerable people and countries and is projected to push back the poorest countries a full 10 years on their SDG progress in this dimension.

The 2030 Agenda for Sustainable Development recognizes that international trade is one of the key drivers for economic growth and that the benefits of this growth should be inclusive and contribute to poverty and inequality reduction worldwide. Hence, there are several trade-related SDG targets across various Goals, which seek to remove different barriers and limit undesirable consequences from trade.

Target 2.b calls on countries to correct and prevent trade restrictions and distortions in world agricultural markets, and a brief analysis of global trends in the related indicator has therefore been included in this chapter, even though the target and indicator, strictly speaking, belong to Goal 2. Additionally, targets 17.10, 17.11 and 17.12 reinforce the call for an equitable multilateral trading systems that is mindful of the particular situation of developing and Least Developed Countries (LDCs).

These targets are complemented by Target 10.a, which seeks to improve market access conditions to LDCs' exports as an integral element of special and differential treatment for LDCs in accordance with the WTO Agreements. Most developed countries grant either full or nearly full duty-free and quota-free market access for LDCs, and an increasing number of developing countries are in the process of extending similar treatment to most imports from LDCs. The average tariff facing LDCs' exports is a useful indicator to check the implementation of DFQF market access. From 2015 to 2019, the proportion of products exported by LDCs and developing countries that receive duty free treatment has increased from 64 percent to 66 percent and at 49 percent to 52 percent, respectively. The share of LDCs' exports in world trade, however, continues to be extremely low at around 1 percent in 2018, roughly the same as a 10 years ago, having missed Target 17.11 of the Agenda 2030, which sought an increase in the exports of developing countries, and in particular the doubling of LDCs' share of global exports by 2020.

SDG INDICATOR 10.A.1

Proportion of tariff lines applied to imports from Least Developed Countries (LDCs) and developing countries with zero-tariff

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 (WTO) agreements

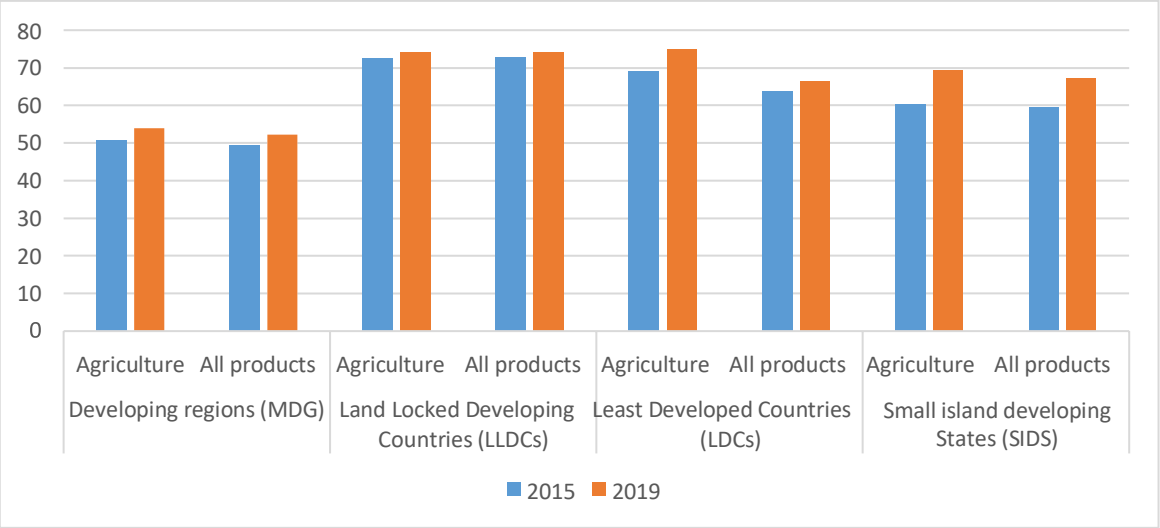
Duty-free access for developing and Least Developed Countries' (LDCs) least developed countries' exports in international markets has improved in recent years, particularly for agricultural products, while the overall growth of exports from LDCs remains worryingly low

Target 10.a of the Agenda 2030 seeks to improve market access conditions for exports from developing and LDCs by giving them special and differential treatment following the WTO agreements. SDG indicator 10.a.1 is calculated as the average share of national tariff lines that are duty-free, effectively allowing us to observe how many developing countries and LDCs will have free access to developed countries' markets.

As shown in Figure 34, developing countries and LDCs receive either full or nearly full duty-free and quota-free access in most international markets. Between 2015 and 2019, the proportion of products exported by LDCs, developing regions and Small Island Developing States that could enter international markets free of duty increased from 63.8 to 66.3 percent, from 49.3 to 52.2 percent and from 59.4 to 67.2 percent, respectively. Correspondingly, in the same period the share of agricultural products exported by LDCs, developing regions and Small Island Developing States that could enter the international market duty-free increased from 69 to 75.1 percent, 50.7 to 53.9 percent from 60.4 to 69.2 percent respectively.

Therefore, the preferential treatment afforded to agricultural exports of developing countries was similar, if not somewhat more favorable, to that of other export commodities. Nonetheless, despite the improvement since 2015, there is still a long way to fully implement the principle of special and differential treatment, which is a key engine in reducing global inequality. In addition, it should be recalled that progress on export expansion from LDCs is slow. Despite considerable growth of LDCs' exports since 2000, their share in world trade in 2019 accounted for less than 1 percent, a figure that has remained virtually stagnant for a decade, whereas the share of LDCs in the world population has risen from 10.7 percent in 2000 to over 13 percent in 2020.

Figure 34: Proportion imports from Least Developed Countries (LDCs) and developing countries with zero-tariff in international markets



SOURCE: International Trade Centre (ITC), World Trade Organization (WTO) and United Nations Conference on Trade and Development (UNCTAD), 2021.

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

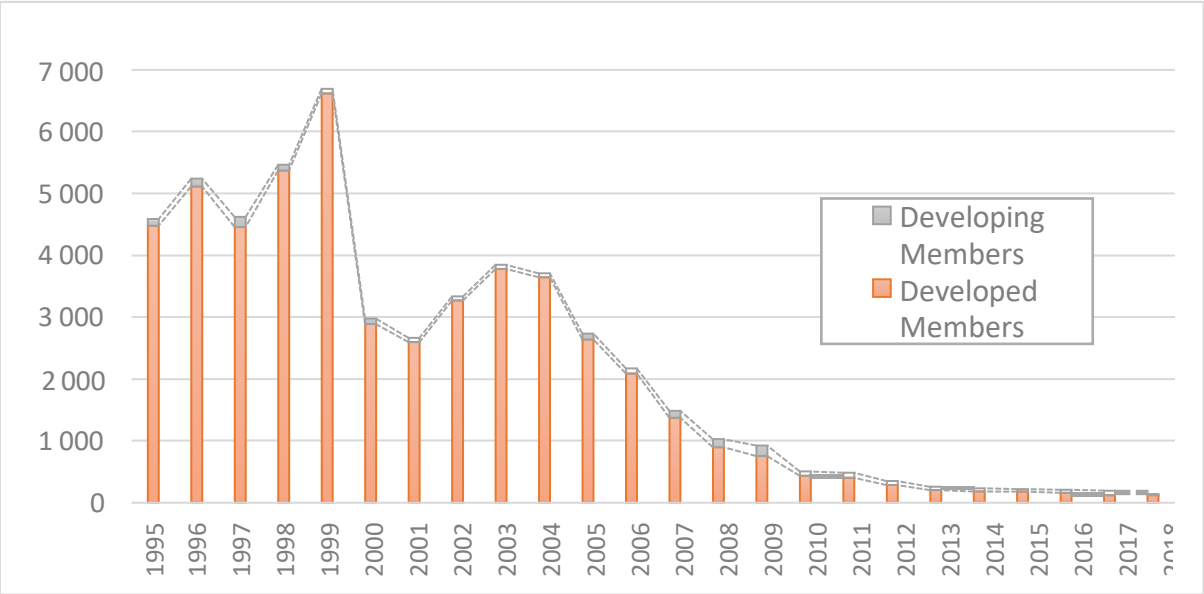
Significant progress has been made towards eliminating agricultural export subsidies globally in recent years to prevent price distortions, but some countries still need to proceed to full elimination

Another key lever for redressing distortions in international markets and, by extension, global inequality, is to eliminate certain export subsidies. Agricultural export subsidies, in particular, have been accused of distorting market prices, encouraging surplus production in exporting countries and lower prices and less production in importing countries, with detrimental effects of consumers in the shorter and longer term.

In view of these effects, in December 2015, World Trade Organization (WTO) members adopted the Ministerial Decision on Export Competition, thus formally agreeing to eliminate all forms of agricultural export subsidies entitlements. Agricultural export subsidy outlays notified to the WTO have observed an overall downward trend since 1995 (Figure 35). Total notified annual outlays fell from their peak of USD 6.7 billion in 1999 to USD 138 million in 2018. Thus, while agricultural export subsidies today are a

fraction of what they used to be, some countries have still not proceeded to their full elimination.

Figure 35: Export subsidies budgetary outlays (USD million), 1995–2018



SOURCE: World Trade Organization, Agricultural Division, 2021.

SUSTAINABLE DEVELOPMENT GOAL 12

Responsible consumption and production

Ensure sustainable consumption and production patterns.

INDICATOR
12.3.1.a

Overview

Consumption and production dynamics underpin the growth of the global economy, yet their trends and current patterns are compromising sustainable development. For decades, scientists have been laying out how humanity is driving the three planetary crises: the climate crisis, the biodiversity crisis, and the pollution crisis, all linked to unsustainable production and consumption.

Our relentless extraction of resources from the Earth is having a devastating impact on the natural world. Changes in consumption and production patterns can help promote decoupling of economic growth and human well-being from resource use and environmental impacts. It can also trigger the transformations envisaged by global commitments on biodiversity, climate and sustainable development at large. COVID-19 provides a window of opportunity to explore more inclusive and equitable development models underpinned by sustainable consumption and production to build a more sustainable and resilient recovery.

SDG INDICATOR 12.3.1.A

Food loss index

Status assessment: Not possible due to absence of numerical yardstick in target

Trend assessment: Not possible due to insufficient data

Target 12.3

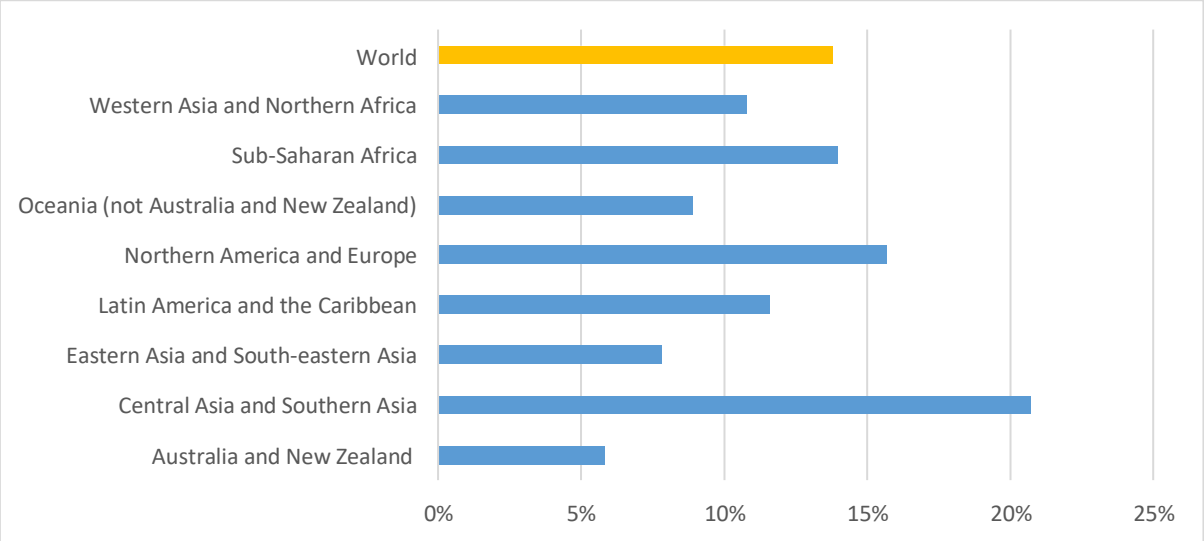
By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses

An unacceptably high proportion of food is lost along the supply chain before it even reaches the consumer

Reducing food loss and waste is critical to improving the food security situation of vulnerable groups and decreasing the environmental footprint of food production activities. Achieving this target has the potential to contribute to several dimensions of the 2030 Agenda, such as eradicating food insecurity and hunger, improving sustainable water management, addressing climate change, and improving sustainability of both marine and terrestrial ecosystems.

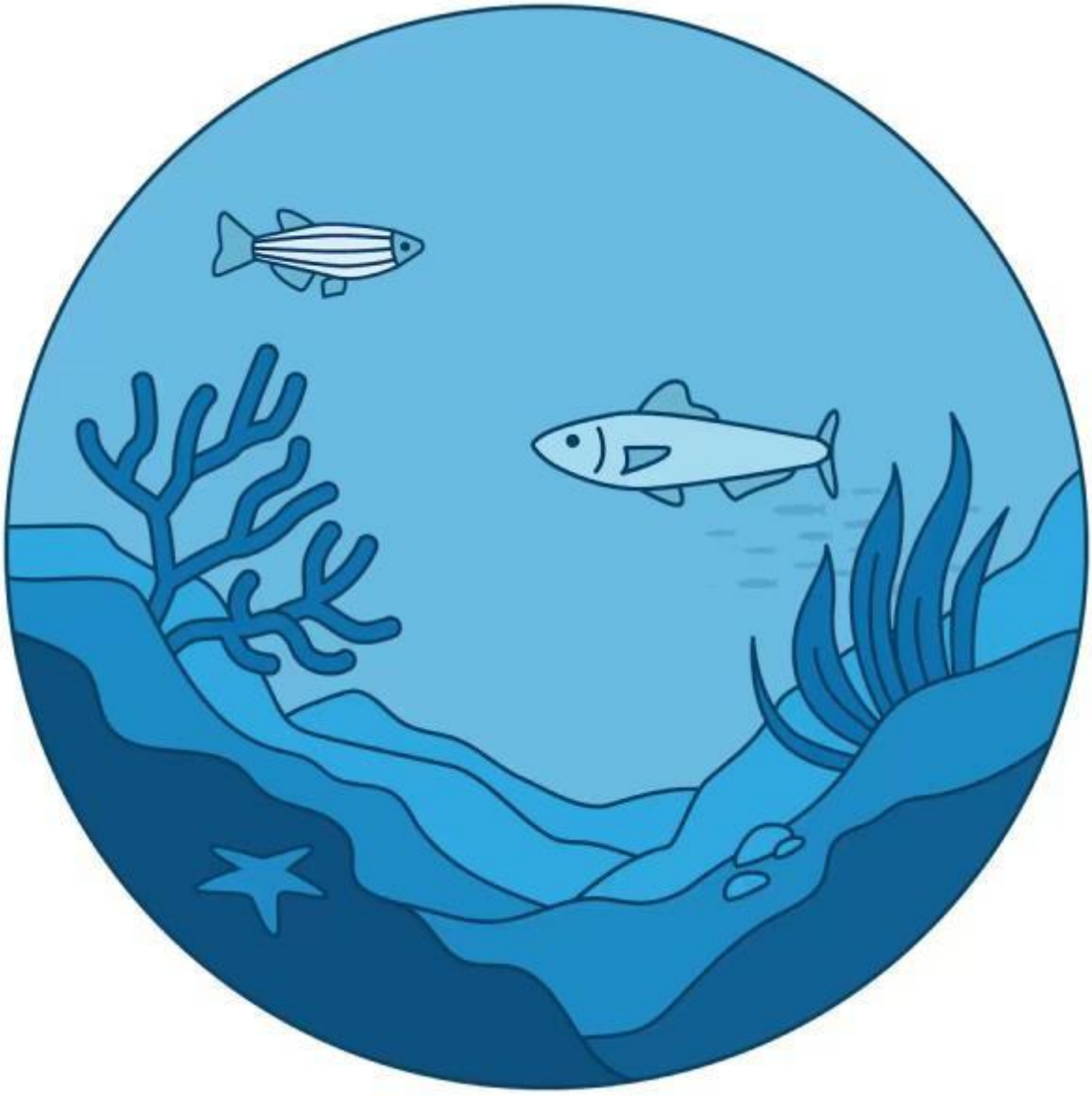
Although limited data is available, it is estimated that globally around 14 percent of the world's food is lost from production before reaching the retail level. These estimates vary across regions, going from as high as 20.7 percent in Central Asia and Southern Asia to 8.9 and 5.8 percent in Oceania[3] and Australia and New Zealand respectively. Estimates also vary across commodity groups and across different stages of the food supply chain. It is important for countries to identify priority commodities and the subsequent stages where high losses occur in order to apply targeted intervention. Considerable reduction of food loss is possible through the identification of these critical loss points and taking appropriate countermeasures. To this end, data collection efforts are urgently needed for countries to develop evidence-based, targeted interventions.

Figure 36: Percentage of food loss by region, 2016



SOURCE: FAO, SOFA Report, 2019.

[3] Excluding Australia and New Zealand.



SUSTAINABLE DEVELOPMENT GOAL 14

Life below water

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

SUMMARY TABLE - 14.4.1
SUMMARY TABLE - 14.6.1, 14.7.1 AND 14.B.1

INDICATORS
14.4.1 14.6.1 14.7.1 14.b.1

Overview

Marine resources from oceans and seas account for more than three quarters of world trade and provide livelihoods for more than six billion people. Oceans are the also world's largest ecosystem, home to nearly a million known species. However, this vast resource is under continual threat from pollution, warming and acidification that are disrupting marine ecosystems and the communities they support. These changes have long-term repercussions that require urgently scaling up protection of marine environments, investment in ocean science and support for small-scale fishery communities and the sustainable management of the oceans.

Despite some efforts in conserving oceans, decades of irresponsible exploitation have led to an alarming level of degradation. The sustainability of global fishery resources continues to decline, though at a reduced rate, and while many countries have made progress in combatting illegal, unreported and unregulated fishing, a more concerted effort is needed. Increased support for small-scale fishers will be critical in light of the coronavirus pandemic to allow them to continue earning a livelihood and nourishing local communities.

SDG INDICATOR 14.4.1

Proportion of fish stocks within biologically sustainable levels

Status assessment: Far from target

Trend assessment: Deterioration

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

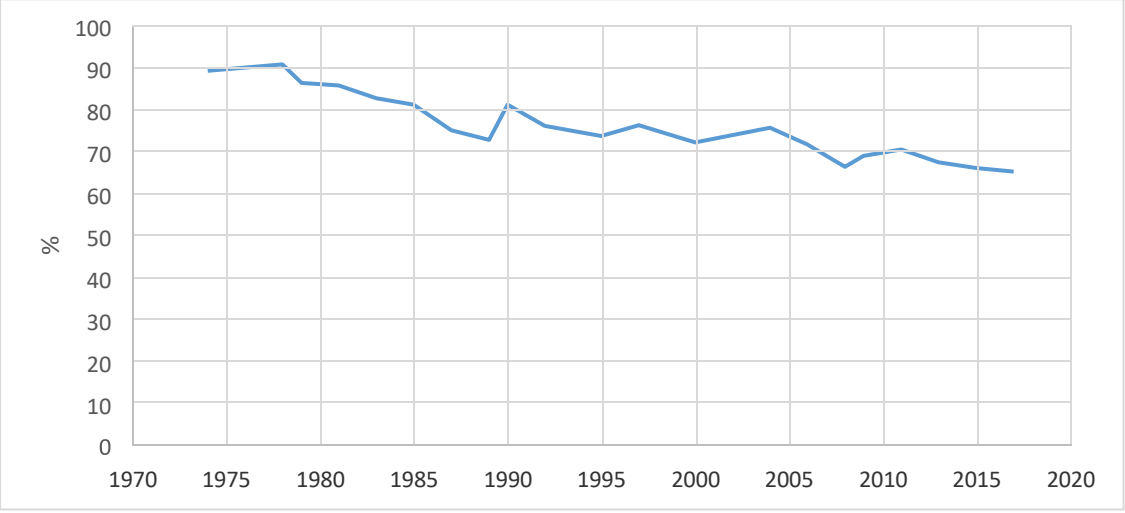
The sustainability of global fishery resources continues to decline, though at a reduced rate

The sustainability of global fishery resources continues to decline, having dropped from 90 percent in 1974 to 65.8 percent in 2017. Fish stocks within biologically sustainably levels contributed 78.7 percent of the global marine fish landings in 2017, which have remained relatively stable at around 80 million tonnes since 1995. Despite the continuous deterioration, the rate of decline has slowed down in the most recent period.

The global trend masks great variations in the proportion of sustainable fish stocks between different regions. In 2017, the Mediterranean and Black Sea continued to have the highest percentage of stocks fished at unsustainable levels (62.5 percent), followed by the Southeast Pacific (54.5 percent) and Southwest Atlantic (53.3 percent). By contrast, the Eastern Central Pacific, Southwest Pacific, Northeast Pacific, and Western Central Pacific had the lowest proportion (13–22 percent) of stocks fished at biologically unsustainable levels.

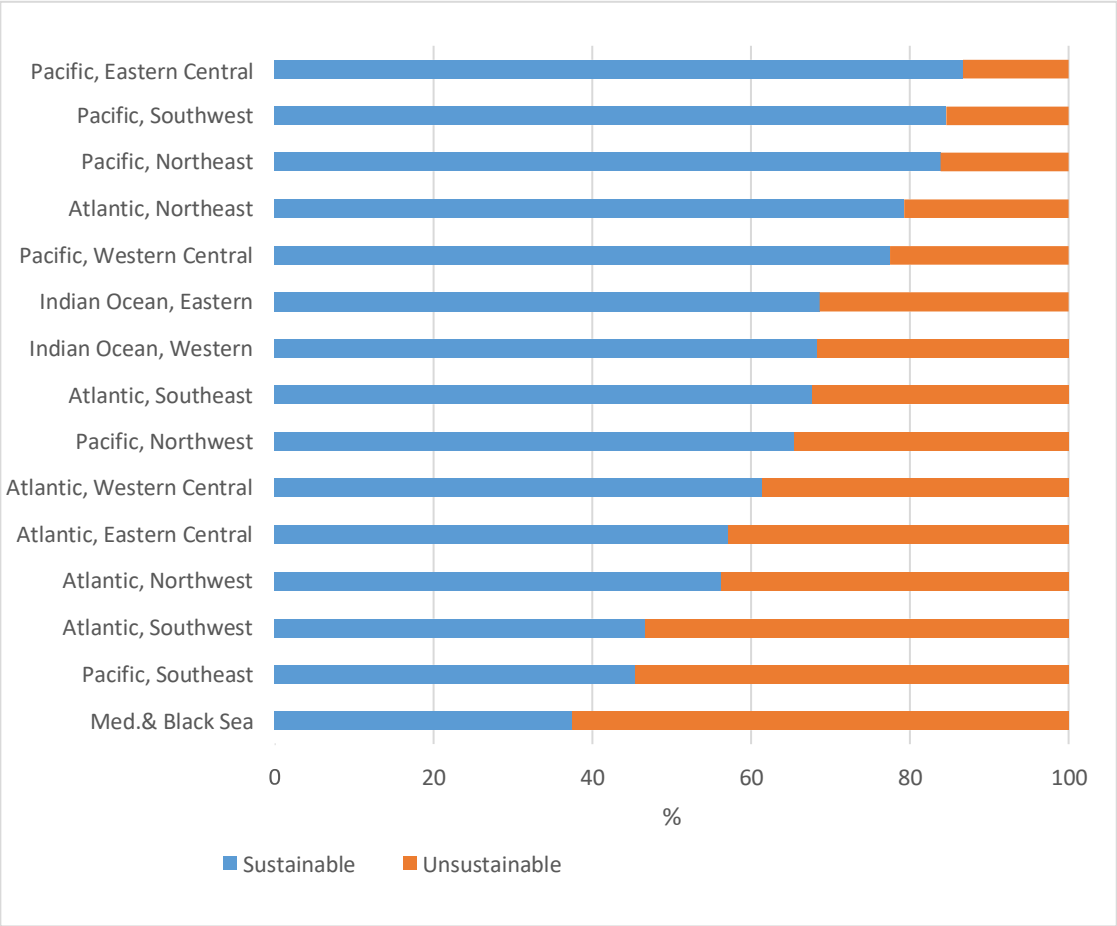
Improved regulations together with effective monitoring and surveillance have proven successful in reverting overfished stocks to biologically sustainable levels. However, the adoption of such measures has generally been slow, particularly in many developing countries. This situation is reflected in the first national fish stock sustainability reports by thirteen countries. A majority of these have active assessment and management systems in place and are therefore able to achieve a higher fish stock sustainability than the world average.

Figure 37: SDG indicator 14.4.1 Proportion of fish stocks within biologically sustainable levels across the world



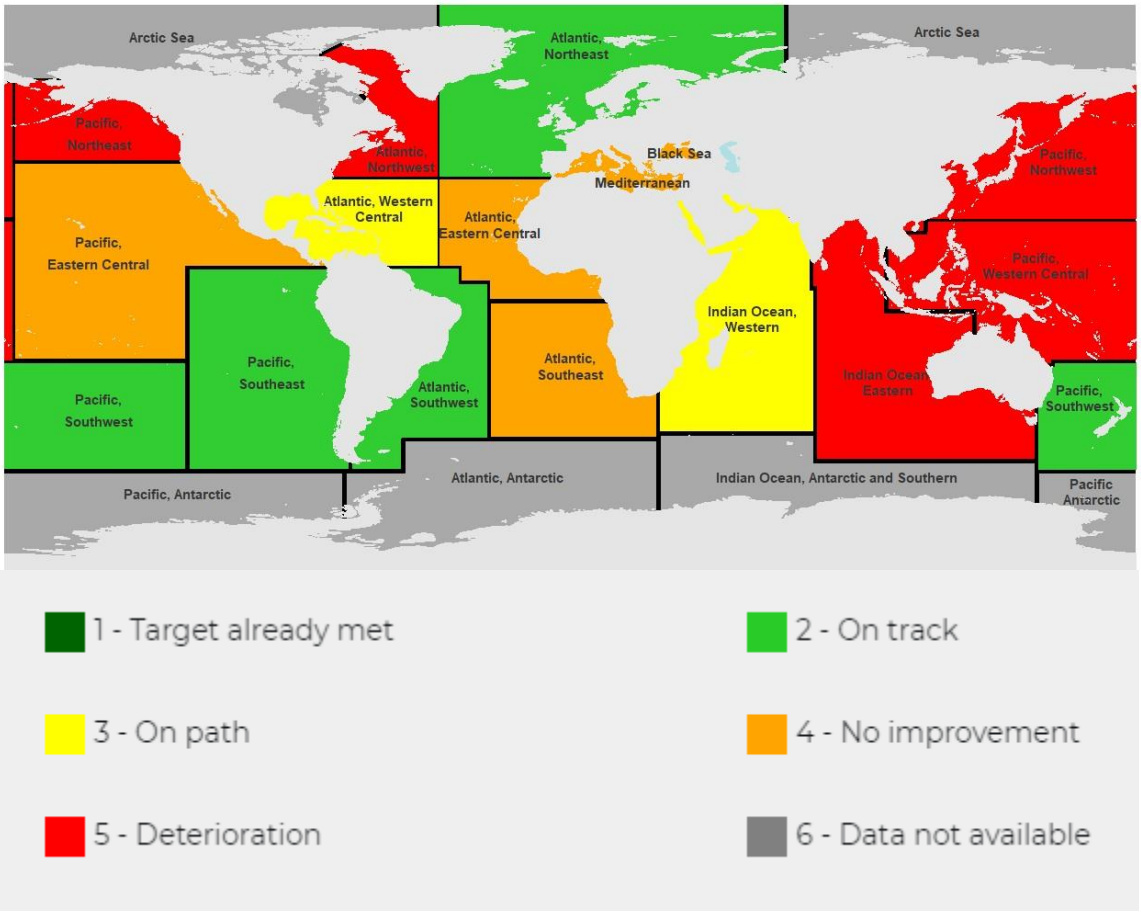
SOURCE: FAO, 2021c.

Figure 38: Fish stock sustainability status across major fishing areas



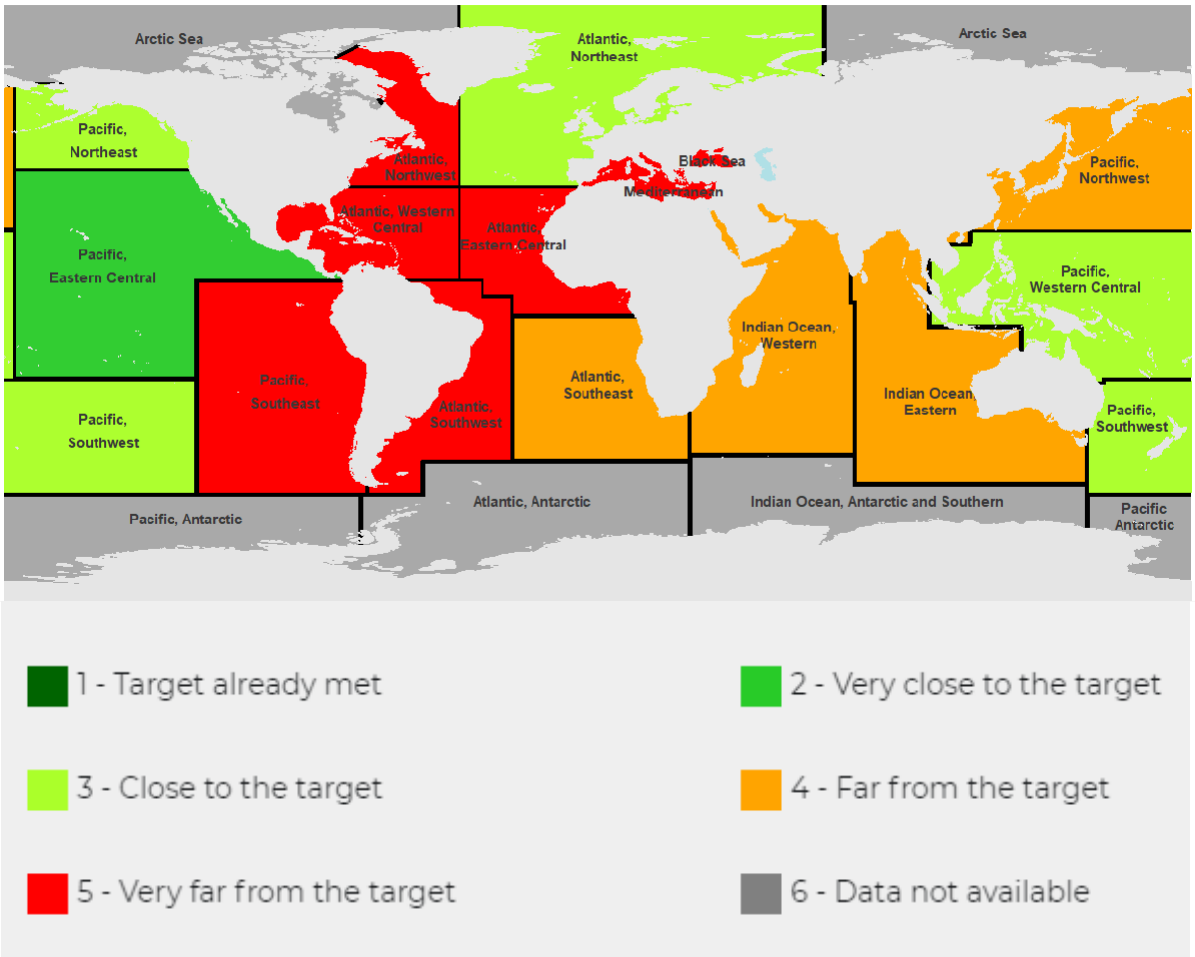
SOURCE: FAO, 2021c.

Figure 39: Progress towards restoring the proportion of fish stocks within biologically sustainable levels by Fishing Area, 2015–2017



SOURCE: Rnaturalearth, modified to comply with UN Geospatial, 2021.

Figure 40: Current distance to the target of SDG indicator 14.4.1 Proportion of fish stocks within biologically sustainable levels by Fishing Area, 2017 data



SOURCE: Rnaturalearth, 2021.

SDG INDICATOR 14.6.1

Degree of implementation of international instruments aiming to combat Illegal, unreported and unregulated (IUU) fishing

Current status: Very close to target

Trend assessment: Slight improvement

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

Countries have made progress in combatting IUU fishing, but a more concerted effort is needed

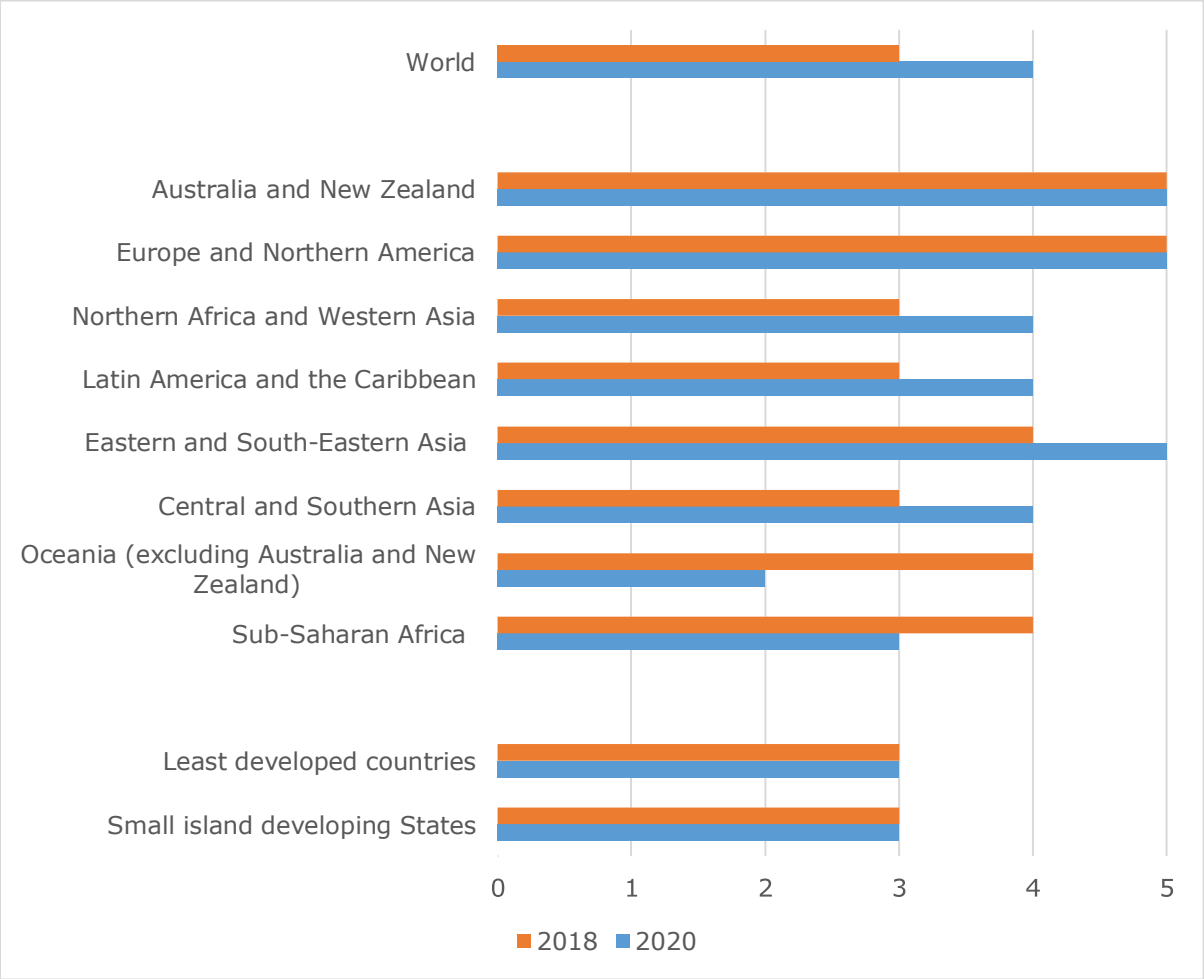
IUU fishing is one of the greatest threats to aquatic ecosystems and to the fishers and populations who rely on these resources for their nutrition and livelihoods. It undermines national and regional efforts to manage fisheries sustainably as well as endeavours to conserve marine biodiversity.

The key to ending IUU fishing once and for all is through cooperation, transparency and compliance. Cooperation between all actors to strengthen individual efforts and foster interlinkages is required. This begins at the national level with inter-institutional cooperation, right through to cooperation between different States, intergovernmental organizations and NGOs working towards this common goal. Transparency is needed, with States sharing information on the identity and compliance history of fishing vessels with relevant actors as well as information to enable the traceability of fish products throughout the value chain. Finally, compliance is needed within the ample international framework covering all steps from the sea to the plate. This includes having in place a strong legislative framework, monitoring, control and surveillance (MCS) capacity, together with effective enforcement capacity, which are essential to proper implementation of international instruments aiming to combat IUU fishing.

The framework of international instruments, developed over the last decades, provides a powerful suite of tools to combat IUU fishing, covering flag, coastal, port and market State responsibilities. The Agreement on Port State Measures (PSMA) is the first binding international Agreement that specifically targets IUU fishing. It lays down a minimum set of standard measures for Parties to apply when foreign vessels seek entry into their ports or while they are in their ports. In June 2016, the Agreement came into force and as of June 2020, there were 69 Parties to the PSMA, including the European Union as one Party representing its Member States. A remarkable rate of adherence reflecting the importance placed by States in combatting IUU fishing which now include as Party over 50 percent of coastal States.

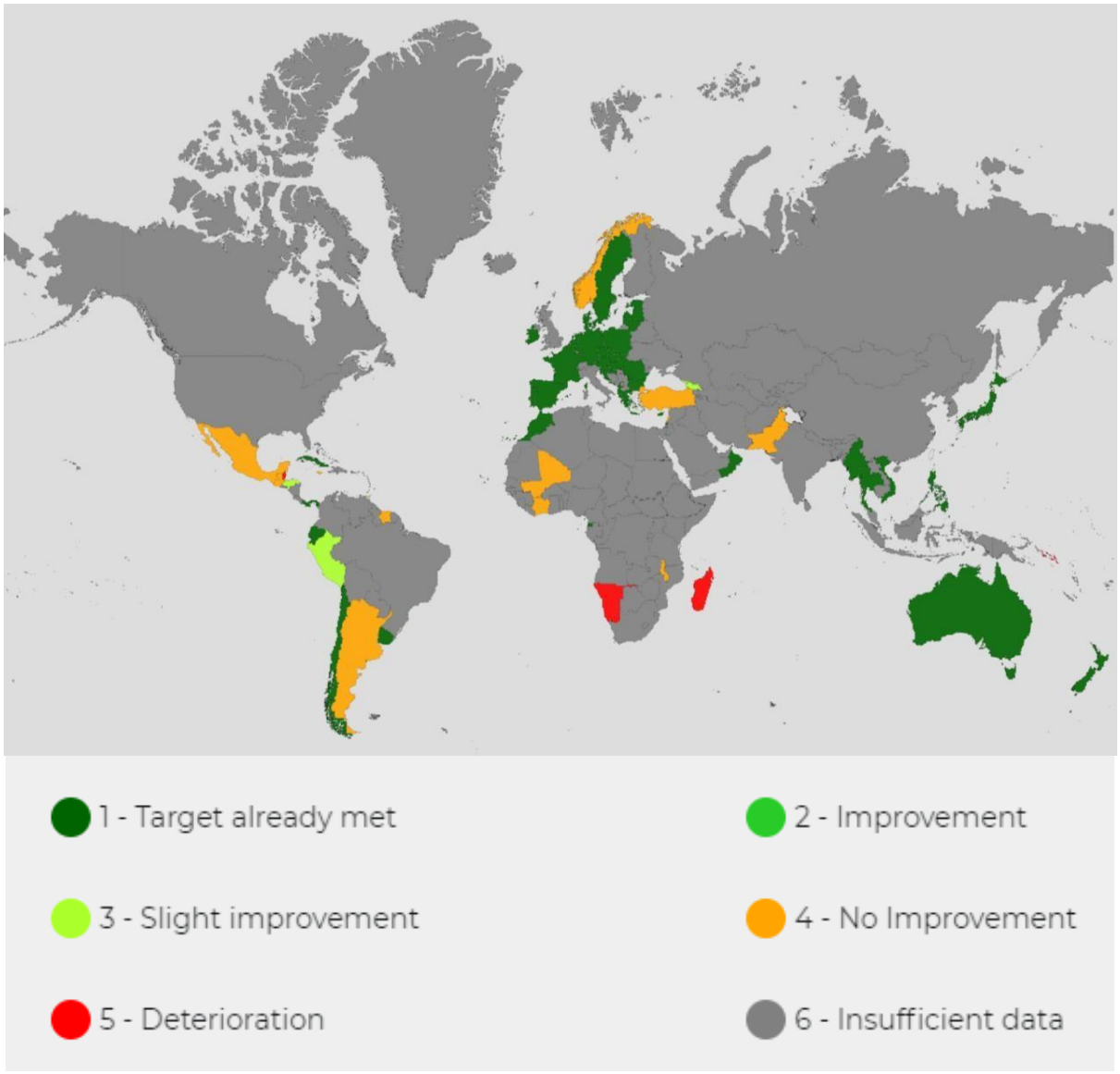
Between 2018 and 2020, the average degree of implementation of international instruments to combat IUU fishing has improved across the world. A composite measure of the degree of implementation of the five principal instruments, the world score for SDG indicator 14.6.1 rose from 3/5 to 4/5 over this period. On the basis of their reporting for SDG indicator 14.6.1, States have thus made good progress overall in carrying out the recommended measures to combat IUU fishing, with close to 75 percent scoring highly in their degree of implementation of relevant international instruments in 2020 compared to 70 percent in 2018. Small Island Developing States (SIDS), faced with particular challenges in fully implementing these instruments due to their large amounts of waters under their jurisdiction, registered a medium level of implementation both in 2018 and in 2020. The same level of implementation was found in LDCs between 2018 and 2020, which often face challenges to implement these instruments. In terms of regional groupings, most have either remained at the same level of implementation or improved, the exception being Oceania (excluding Australia and New Zealand) and sub-Saharan Africa.

Figure 41: Progress in degree of implementation of IUU instruments, 2018–2020



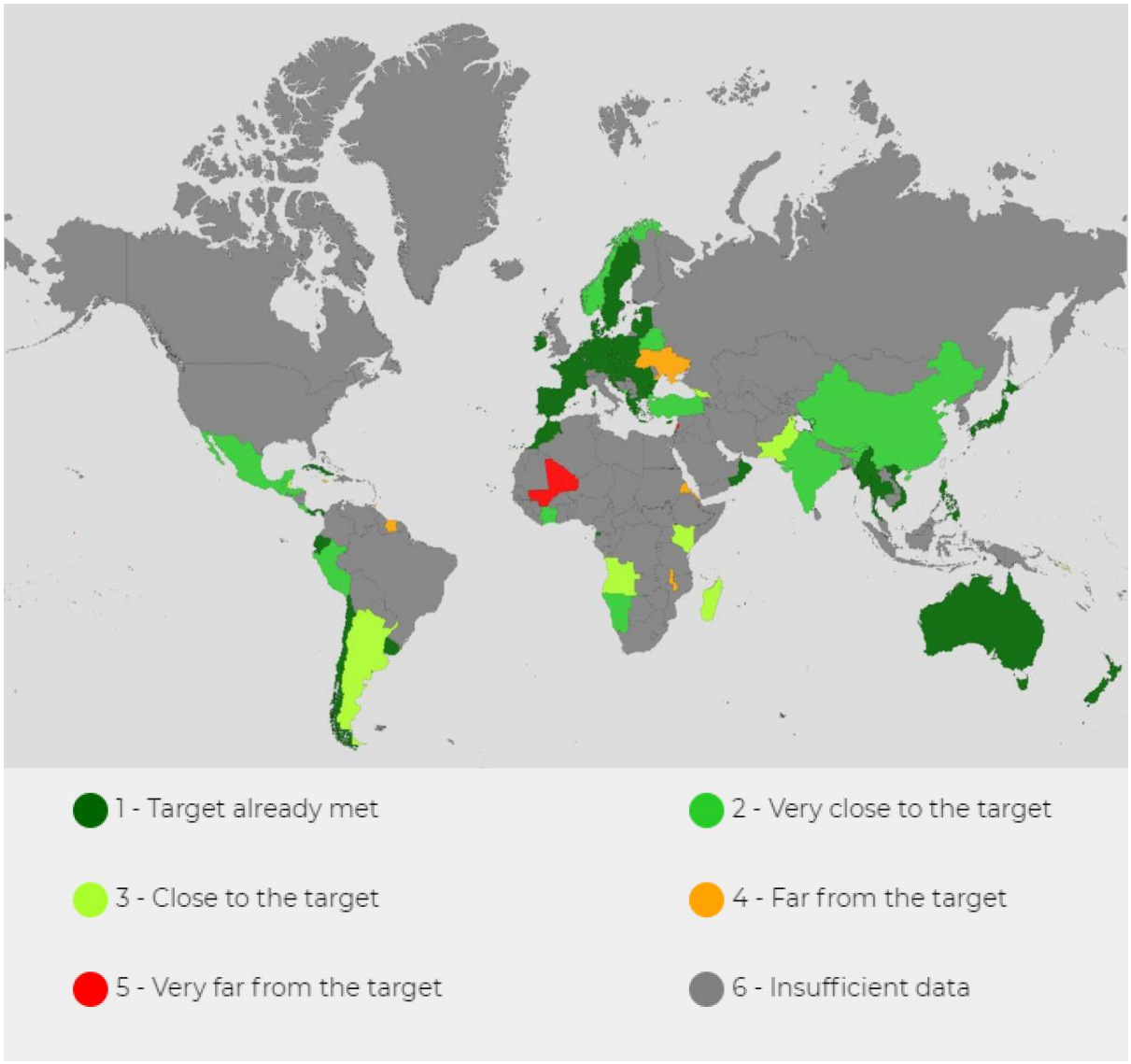
SOURCE: FAO, 2021c.

Figure 42: Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated (IUU) fishing, 2018–2020



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, 2021c, modified to comply with UN Geospatial, 2021.

Figure 43: Current distance to the target of SDG indicator 14.6.1 based on 2020 data



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, 2021c, modified to comply with UN Geospatial, 2021.

SDG INDICATOR 14.7.1

Sustainable fisheries as a proportion of GDP in Small Island Developing States (SIDS), Least Developed Countries (LDCs) and all countries

Status assessment: Not possible due to absence of numerical yardstick in target

Trend Assessment: Slight improvement

Target 14.7

By 2030, increase the economic benefits to Small Island Developing States (SIDS) and Least Developed Countries (LDCs) from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism

Sustainable fisheries make a vital contribution to the GDP of LDCs and SIDS

Sustainable fisheries have supported the livelihoods and food security of communities for millennia, playing an essential role in local economies and food security. Today sustainable fisheries account for approximately 0.1 percent of global GDP, while in certain regions and LDCs they contribute more than 0.5 percent. The sustainable management of fish stocks remains critical for ensuring that fisheries continue to generate economic growth and support equitable development, meeting the needs of today without compromising the ability of future generations to do the same.

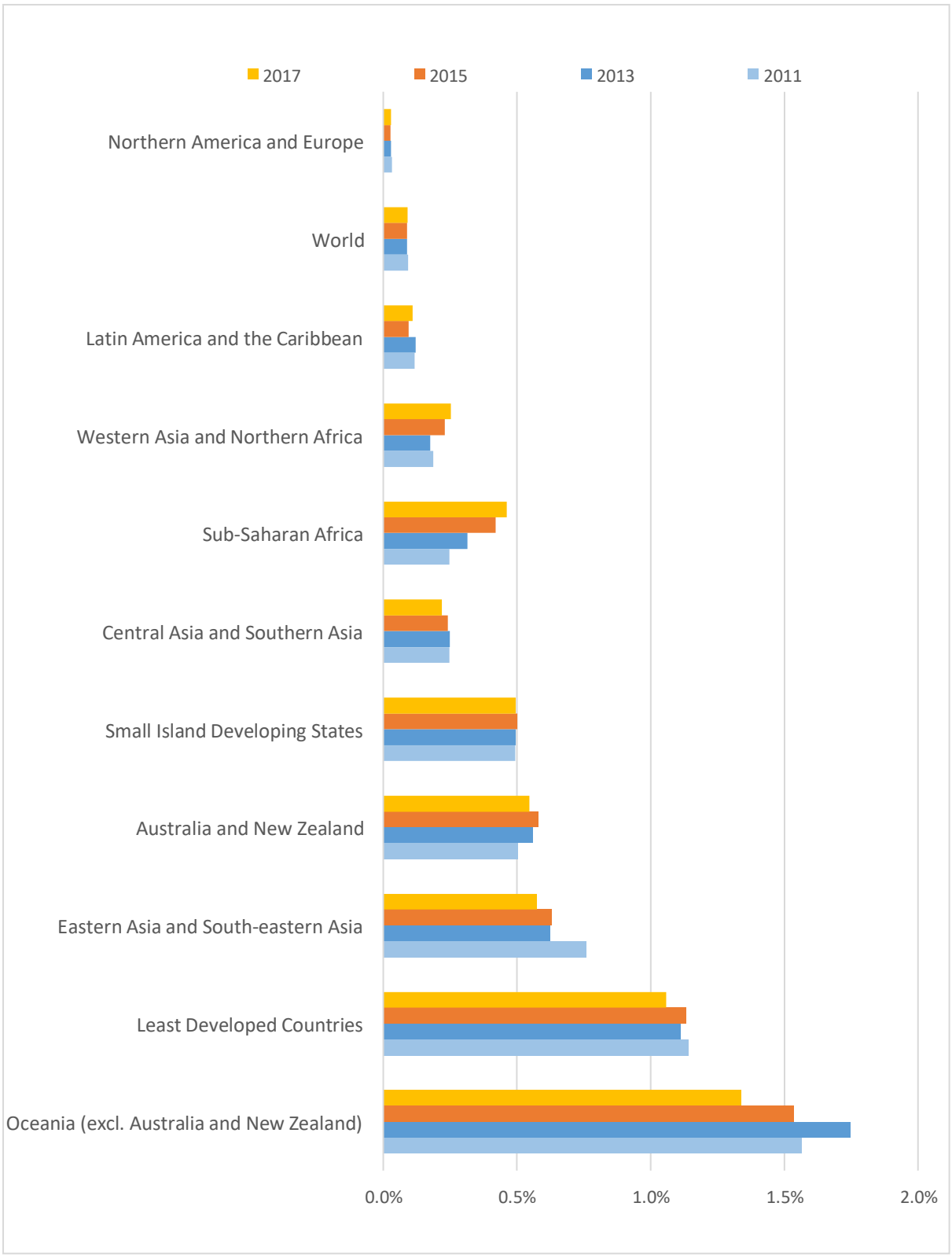
Fish is now able to feed more people than ever before, providing livelihoods for millions worldwide, while alleviating hunger and malnutrition. The global appetite for fish has driven production from 20 million tons in 1950, to about 179 million tons in 2018. As fisheries and aquaculture have expanded, so too have the economic dividends from the sector and its contribution to sustained economic growth. At a global level, the value-added of this 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 sub-Saharan Africa, where it rose as a proportion of GDP from 0.25 percent in 2011 to 0.46 percent in 2017.

These economic dividends can only be sustained through prudent management of fish stocks that avoids overexploitation and depletion. The decline in fish stock within biologically sustainable levels continues, albeit at a slower rate, highlighting the need for improved regulations and effective monitoring. The declining sustainability of several stocks in the Pacific Ocean has led to a worsening overall trend for regions such as South-Eastern Asia, where sustainable fisheries fell from 0.76 percent of GDP in 2011 to 0.57 percent in 2017.

COVID-19 poses further challenges for the industry. In the short-term demand has declined in many areas, with a drop in hospitality sales being particularly significant. This, in combination with logistical challenges and disruptions to production, has negatively impacted the profitability of the sector. While many of the long-term impacts COVID-19

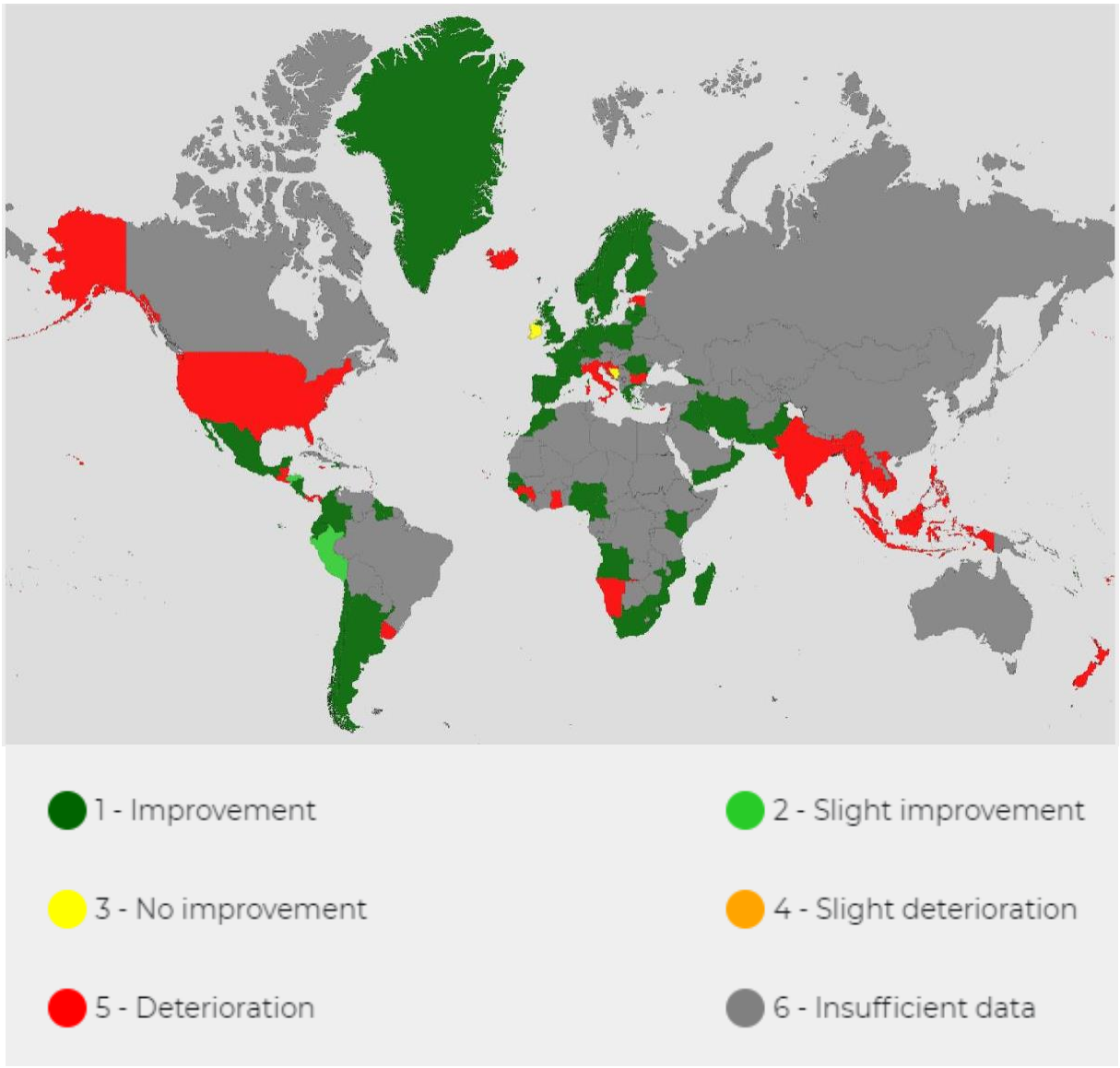
remain to be seen, it is essential that fisheries management is empowered to operate effectively, and in combination with effective government policy ensure that fisheries recover in a sustainable manner that maximizes benefits.

Figure 44: Sustainable Fisheries as a percentage of GDP



SOURCE: FAO, 2021c.

Figure 45: SDG indicator 14.7.1 - Progress towards increasing sustainable fisheries as a percentage of GDP, 2015–2017



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, 2021c, modified to comply with UN Geospatial, 2021.

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

Current Status: Very close to target

Trend Assessment: Slight improvement

Target 14.b

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

Increased support for small-scale fishers is critical in light of the coronavirus pandemic

As the world looks to the 2022 International Year of Artisanal Fisheries and Aquaculture (FAO, 2021d), countries' commitment to providing access for small-scale artisanal fishers to marine resources and markets is gaining traction. Small-scale fishers, who account for more than half of total capture production in developing countries, continue to be among the most marginalized food producers, beckoning the international community to take action. There is evidence that the COVID-19 crisis is adversely affecting their livelihoods as global demand for seafood dwindles and transportation restrictions prevent market access.

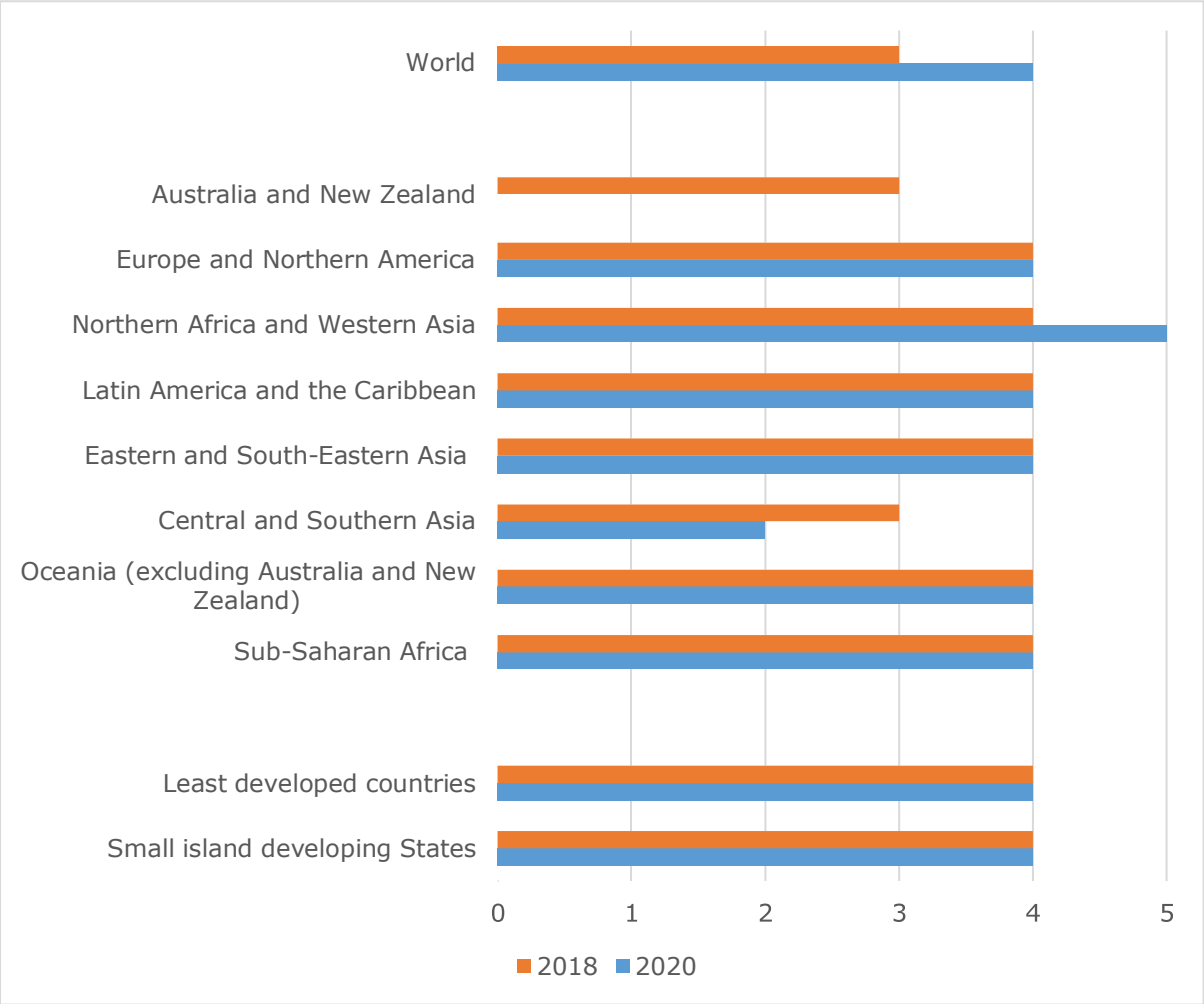
At the same time, these small-scale food producers fulfil a vital role to nourish those depending on the sector and local communities in the current crisis. It is more important than ever for countries to support small-scale fishers as key contributors to sustainable food systems. Such action can be informed by adopting specific initiatives to implement the internationally agreed *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication* (FAO, 2015), an internationally agreed instrument that promotes improved small-scale fisheries governance, including in value chains, post-harvest operations and trade, and which includes a dedicated chapter on Disaster Risks and Climate Change.

Since 2015, most regions have expanded the adoption of regulatory frameworks supporting small-scale fisheries and promoting participatory decision-making processes, including SIDS, where up to 70 percent of the people working in the fisheries sector are involved in small-scale fisheries. The average global score for SDG indicator 14.b.1 - a composite score of implementation of legal/regulatory/policy/institutional frameworks which recognize and protect access rights for small-scale fisheries - has moved from 3/5 in 2018 to 4/5 in 2020. At regional level, Northern Africa and Western Asia reflect this leap, while Central and Southern Asia and Latin America and the Caribbean reduced their regional score from 3/5 to 2/5 and from 4/5 to 3/5 respectively, highlighting that efforts need to be redoubled and that there is no room for complacency. The other regions remained stable at a score of 4/5.

Despite the overall improvement, some of the constituents of the composite score for SDG indicator 14.b.1 show less progress. One of these is the adoption of specific initiatives to

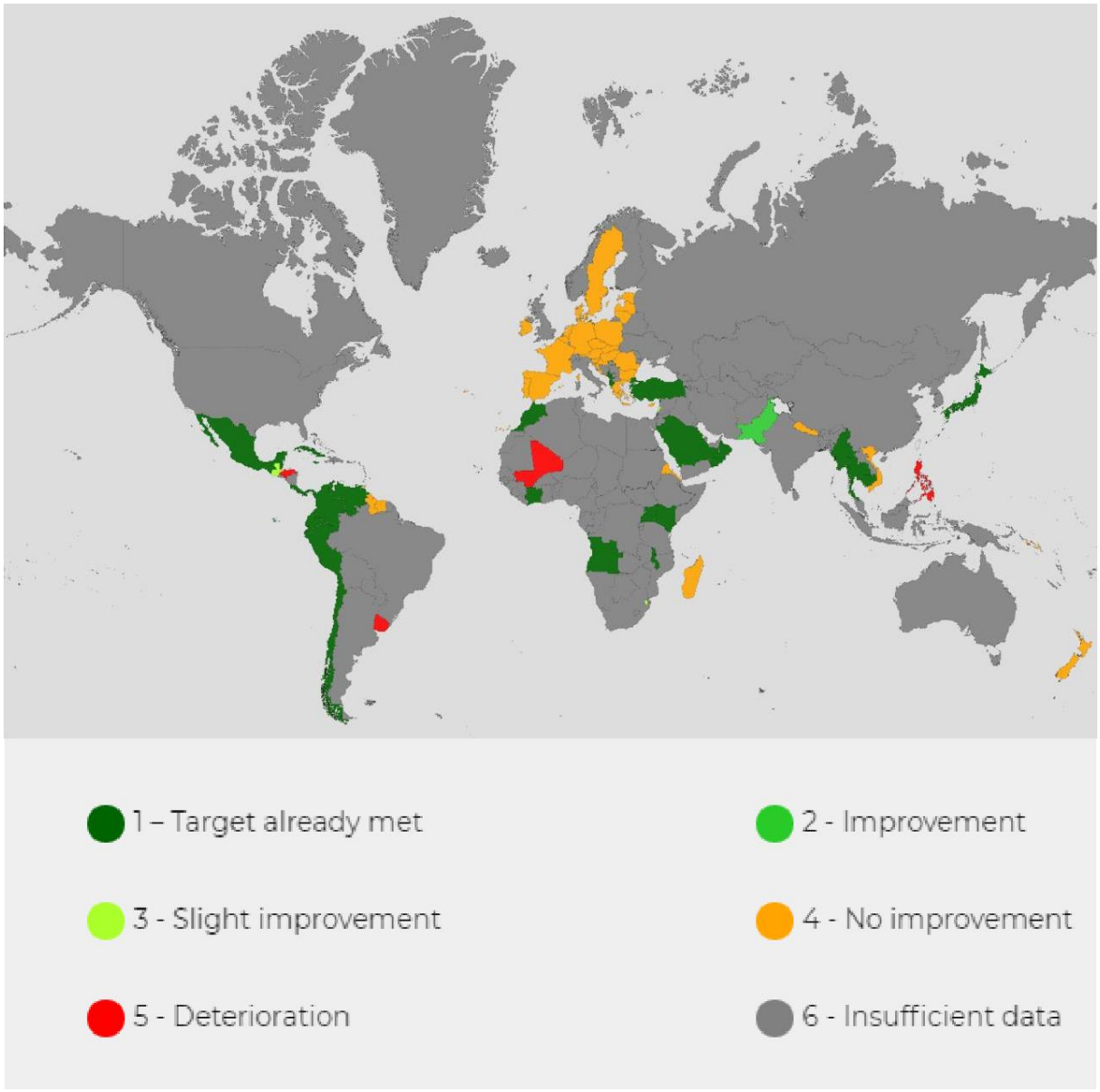
implement the *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries*, which reflects the lowest commitment by countries, despite their ability to guide actions to protect small-scale fisheries, particularly in the current circumstances. Only about half the countries in the world have adopted specific initiatives to implement the Voluntary Guidelines. The lack of financial resources and organizational structures among small-scale fishers are critical constraints, compounded by limited public awareness of the importance of small-scale fisheries, as well as insufficient coordination among relevant national authorities.

Figure 46: Progress in degree of implementation of international instruments to promote and protect small-scale fisheries, 2018–2020



SOURCE: FAO, 2021c.

Figure 47: SDG indicator 14.b.1 - Progress towards the application of legal/regulatory/policy/institutional frameworks which recognize and protect access rights for small-scale fisheries, 2018–2020



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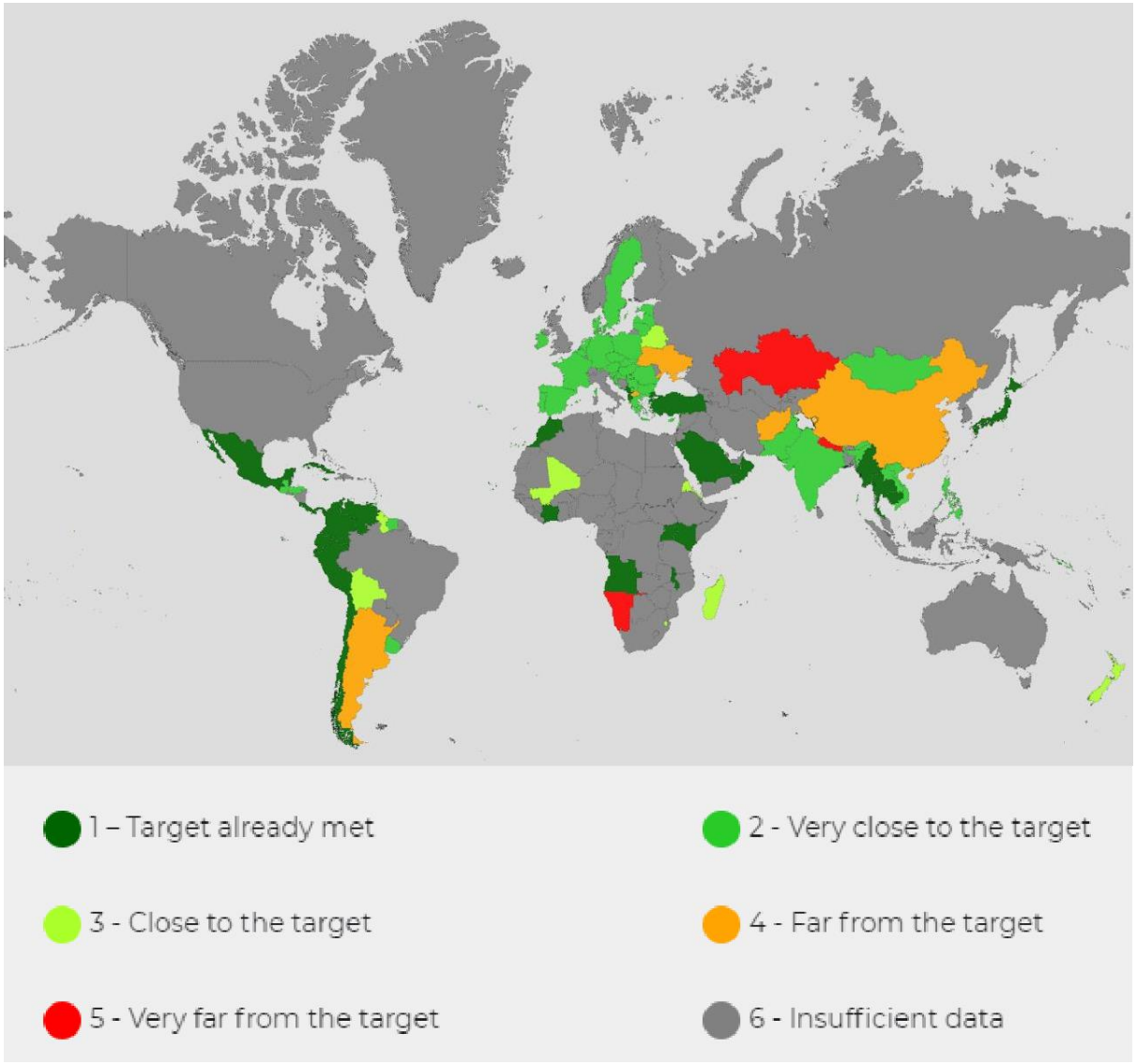
SOURCE: FAO, 2021c, modified to comply with UN Geospatial, 2021.

Figure 48: Current distance to the target of SDG indicator 14.b.1 based on 2020 data



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SOURCE: FAO, 2021c, modified to comply with UN Geospatial, 2021.

SUSTAINABLE DEVELOPMENT GOAL 15

Life on land

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

SUMMARY TABLE

INDICATORS
15.1.1 15.2.1 15.4.2 15.6.1

Overview

Deforestation and forest degradation, continued biodiversity loss, and the ongoing degradation of ecosystems, are having profound consequences for human wellbeing and survival. The world fell short on 2020 targets to halt biodiversity loss. Forest area coverage continues to decline, albeit at a slower rate compared to previous decades, and countless species remain threatened with extinction. The COVID-19 pandemic has confirmed that by threatening biodiversity, humanity threatens its own survival. While great efforts are being made on expanding sustainable forest management, increasing coverage of key biodiversity areas, and signing up to legislation and treaties to protect biodiversity and ecosystems, the international community will need to scale up efforts to protect terrestrial ecosystems to "put the health of the planet at the centre of all our plans and policies" (UN Secretary-General).

SDG INDICATOR 15.1.1

Forest area as a proportion of total land area

Status assessment: Not possible due to absence of numerical yardstick in target

Trend assessment: Deterioration

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

In 2020 the earth's land surface is covered with 31.2 percent of forest; this is 100 million hectares of forest cover less than two decades ago

The proportion of forest area of the world's land area has gradually decreased from 31.9 percent in 2000 (4.2 billion hectares) to 31.5 percent in 2010, then down to 31.2 percent (4.1 billion ha) in 2020. Forest area losses amounted to almost 100 million hectares in the past two decades, however the rate of loss has slightly slowed down within the past ten years. These global trends result from divergent dynamics of the regions:

- Asia as well as Europe and Northern America showed an overall increase in forest area from 2000 to 2020, due to afforestation and landscape restoration efforts, as well as natural expansion of forests in those regions. The expansion of forest area however slowed down from 2010 to 2020 compared to the period 2000–2010.
- On the other hand, large forest area losses were observed in the past twenty years in Latin America and the Caribbean, as well as in sub-Saharan Africa, mainly due to the conversion of forest land for agricultural use for crops and grazing. LDCs are particularly affected by forest area losses. In Latin America and the Caribbean, the forest losses decreased in 2010–2020 compared to the previous decade, while an increase was observed in sub-Saharan Africa.

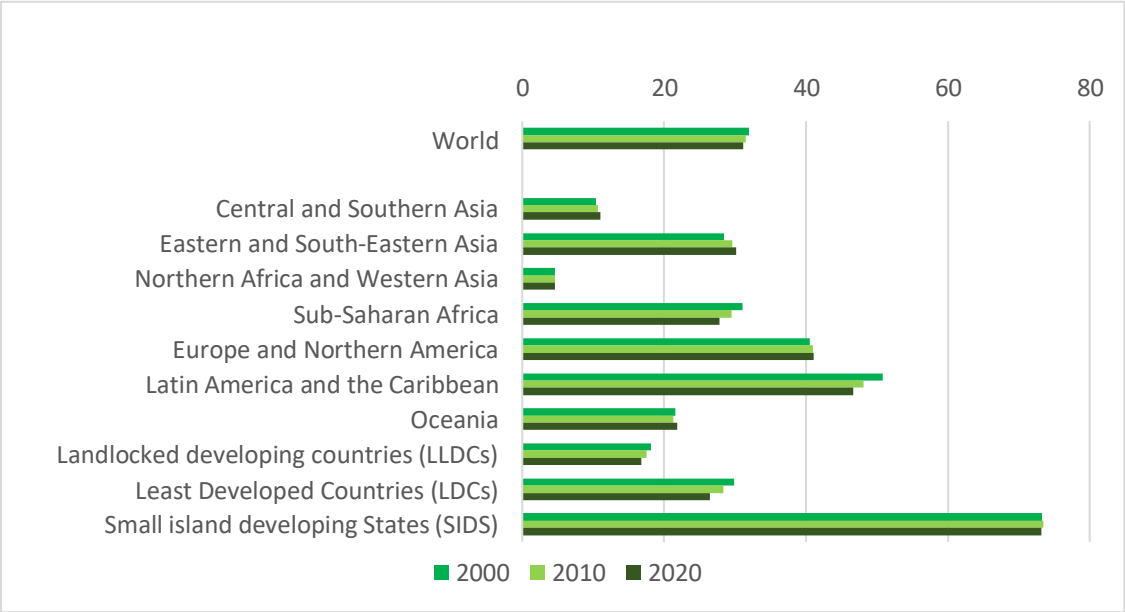
Forests play an important role for livelihoods and the well-being of rural and urban population. They notably contribute to regulating water cycle, mitigating climate change, while they are also home to most of the world's terrestrial biodiversity. Loss of forests contributes to global warming and has negative effects, in particular, on the livelihoods of the poorest people, on interrelated land uses such as agriculture as well as on wildlife and other environmental services.

The COVID-19 crisis is expected to have negative impacts on forest resources and increase risk of deforestation and associated biodiversity loss. Forests have a key role to play in securing livelihoods for the most vulnerable and in increasing resilience against crisis such as pandemics. Hence, there is a risk of increased pressure on forest cover and environmental integrity if other support measures are not in place.

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

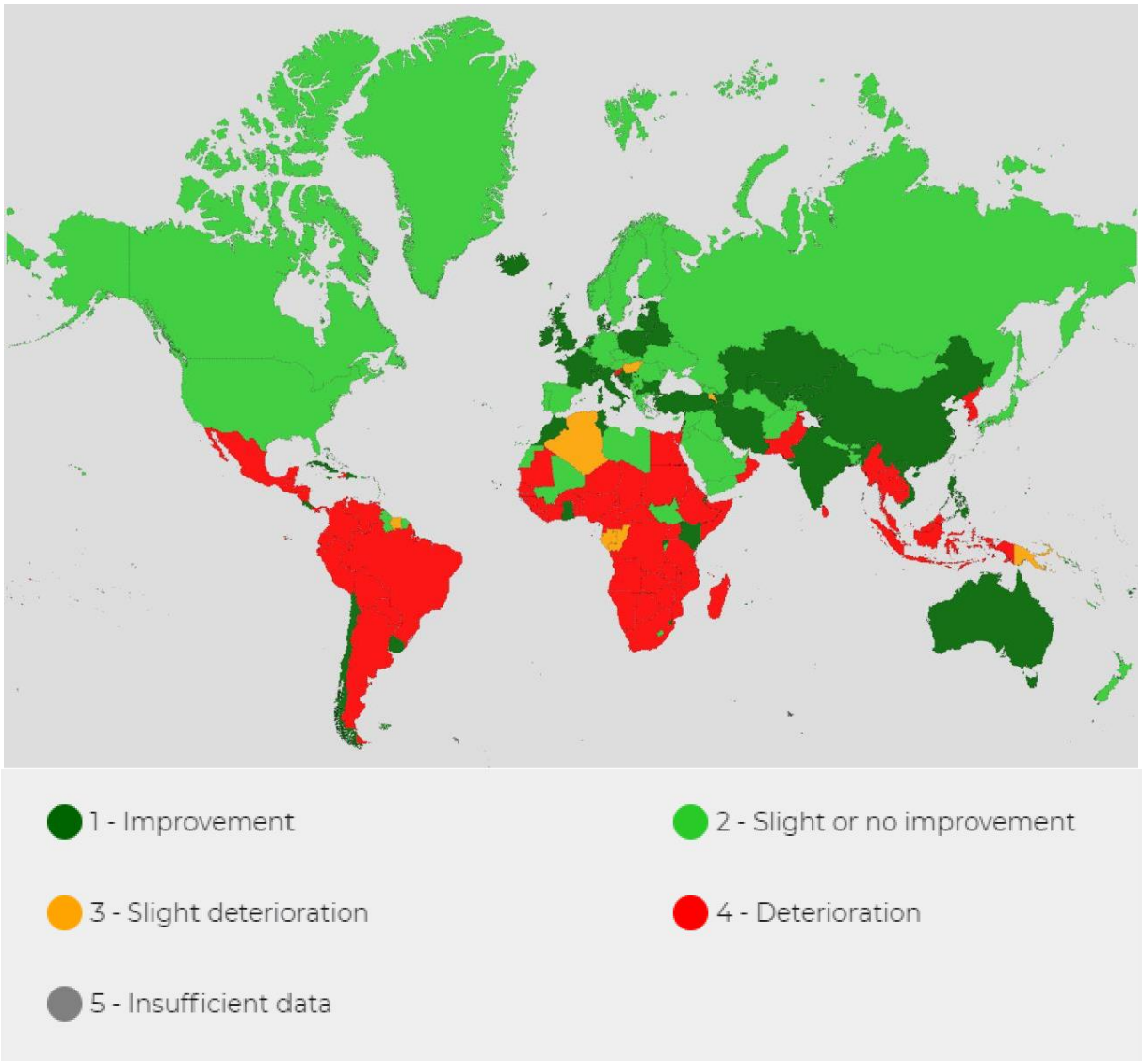
This annual update of the indicator 15.1.1 uses the latest data from the *Global Forest Resources Assessment 2020* (FAO, 2021e), which is based on the best available country data and information to date.

Figure 49: SDG indicator 15.1.1 - Forest area as proportion of total land area (percent)



SOURCE: FAO, 2021c.

Figure 50: SDG indicator 15.1.1 - Forest area as a percentage of total land area, 2015–2020



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SOURCE: FAO, 2021c, modified to comply with UN Geospatial, 2021.

SDG INDICATOR 15.2.1

Progress towards sustainable forest management

Status assessment: Not possible due to absence of numerical yardstick in target

Trend assessment: Not carried out due to methodological reasons

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

Significant progress all over the world towards sustainable forest management, but forest loss remains high

The indicator 15.2.1 shows evident progress towards sustainable management of the world's forest. Most sub-indicators indicate notable positive trends if we compare the period 2010–2020 to the period 2000–2010, demonstrating successful efforts to conserve and sustainably use the forests.

Globally, the following sub-indicators have increased in most regions:

- the area of forest under certification
- the proportion of forest area in protected area and under long-term management plans
- the above-ground forest biomass per hectare

The number of countries with certified forest area have increased from 80 in 2019 to 83 in 2020.

The only exception from this trend is the forest area change rate, which shows a slight decrease in the rate of forest loss at global level and remains an issue of concern. *Global Forest Resources Assessment 2020* (FAO, 2021e) data reveal that in Africa and South-eastern Asia the loss of forest increased in the most recent decade compared to the previous decade. Forest loss is still high also in Latin America and the Caribbean, but it is slowing down. In these regions forest conversion to large scale cropping (in particular in Latin America and South-eastern Asia), grazing and subsistence agriculture (Africa) are the main drivers of forest loss.

Deforestation and forest degradation remain major challenges especially in the tropics, in LDCs, LLDCs as well as in SIDS. This calls for the need to further strengthen forest governance at all levels.

Forests are the largest carbon and biodiversity reservoirs on Earth. They are essential source of foods, goods and services and vital to the livelihood of the poorest and the rural

communities.

As the COVID-19 pandemic continues to spread around the globe, it also affects forest and forestry in many ways. There is an increased risk of further deforestation and associated biodiversity loss, as certain groups of the population are losing their jobs and income and are turning to forests and forest product for subsistence, putting more pressure on forest resources. Strengthened monitoring and enforcement to curb illegalities and support to those most vulnerable are essential measures to mitigate the pandemic-driven deforestation and degradation.

Forests have a key role to play in providing solutions to crises such as the COVID-19 pandemic. They act as safety nets for the most vulnerable members of society, providing food, subsistence and income in times of scarcity and thereby increasing their resilience.

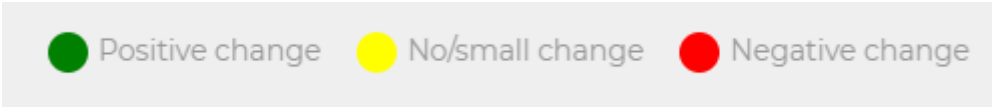
Global and regional efforts to sustain forest ecosystems as well as their social, economic and environmental functions should be pursued with particular emphasis on the tropics and developing countries.

This annual update of SDG indicator 15.2.1 uses the latest data from the *Global Forest Resources Assessment 2020* (FAO, 2021e) as well as most recent certification data updated for the year 2020. The Global Forest Resources Assessment is based on the bestavailable country data and information to date.

15.2.1. Dashboard for SDG sub-indicators

SDG Region	Forest area annual net change rate *	Above-ground biomass stock in forest (t/ha)	Proportion of forest area within legally established protected areas	Proportion of forest area under a long-term forest management plan	Forest area certified
World					
Central and Southern Asia					
Central Asia					
Southern Asia					
Eastern and South-Eastern Asia					
Eastern Asia					
South-Eastern Asia					
Northern Africa and Western Asia					
Northern Africa					
Western Asia					
Sub-Saharan Africa					
Europe and Northern America					
Europe					
Northern America					
Latin America and the Caribbean					
Oceania					
Oceania (exc. Australia and New Zealand)					

SDG Region	Forest area annual net change rate *	Above-ground biomass stock in forest (t/ha)	Proportion of forest area within legally established protected areas	Proportion of forest area under a long-term forest management plan	Forest area certified
World					
Australia and New Zealand					
Landlocked developing countries (LLDCs)					
Least Developed Countries (LDCs)					
Small island developing States (SIDS)					



NOTE: * Calculated using compound interest rate formula.
SOURCE: FAO, 2021c.

SDG INDICATOR 15.4.2

Mountain Green Cover Index

Status assessment: Not possible due to absence of numerical yardstick in target

Trend assessment: Slight or no improvement

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

Mountain ecosystems are hotspots for terrestrial biodiversity, yet are especially vulnerable to climate change, which puts biodiversity and the livelihoods of mountain and adjacent lowland peoples at risk.

Mountains cover about 22 percent of the earth's land area and are home to some 915 million people. They host more than 85 percent of the of the world's species of amphibians, birds and mammals. In addition, they provide vital resources, such as clean water, to a significant proportion of the global population.

However, mountain ecosystems are especially vulnerable to climate change, which threatens their ability to continue providing ecosystem services. This is particularly alarming when mountain peoples are already among the world's most food insecure, with about one in three mountain dwellers facing the threat of food insecurity.

The green coverage of mountain can provide information about their state of health and therefore about their capacity to fulfil their ecosystem roles. New data based on satellite imagery at a 300 meters resolution reveals that about 73 percent of the world's mountains are covered in green vegetation (forests, grasslands, wetlands and croplands).

- Oceania is the region with the highest proportion of green mountain cover, at more than 95 percent.
- Western Asia and Northern Africa has the lowest cover, at approximately 55 percent.
- Sub-Saharan Africa has a mountain cover of 92 percent, followed by Eastern and Southern Asia at 85 percent and Latin America and the Caribbean at 81 percent.
- Northern America and Europe and Central and Southern Asia have green mountain covers between 65 and 67 percent.

Interpreting the green coverage of mountain areas

Being an aggregated indicator, the green coverage of mountain areas should be interpreted with care. The green cover number does not provide details on species change, nor the change in the tree line. In addition, not all green cover changes can be considered 'positive' (for example, increase in green cover as a result of glacier retreat and snow cover loss).

Understanding the variation in the species composition and the tree line will be important to identify the long-term impacts of climate change in mountain regions. Therefore, analyzing the variations in each of the elevation zones over time will be important in determining the appropriate management and adaptation measures.

Data by land cover type and elevation

Figure 51 provides a graphical representation of the global mountain cover disaggregated by land cover type and elevation to facilitate a more detailed

understanding of global mountain cover patterns.

Forest: At the lowest elevation, forests are the predominant land cover type, covering over 50 percent of the area. However, the share of forest cover steadily drops with higher elevation, becoming almost negligible above 4 500 meters.

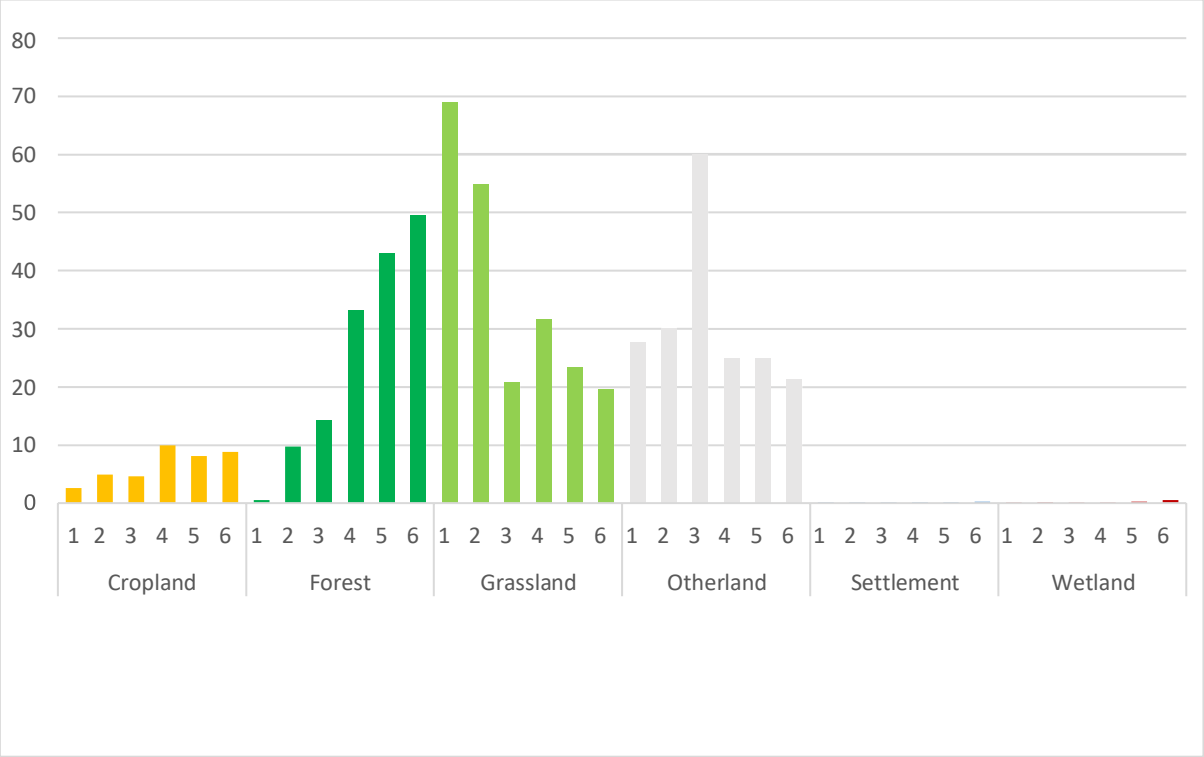
Grassland and otherland: The proportion of mountain area covered by grassland and otherlands (which may include ice cover, glaciers and barren land) generally increases with elevation, with grassland becoming the predominant land cover type above 3 500 meters.

Cropland: Across elevation ranges, cropland is most expanded between 1 500 and 2 500 meters, probably reflecting the fact that mountains at lower elevation are also defined by a higher slope and local elevation range (LER), which may not provide a suitable landscape for growing crops. Above 2 500 meters, crop coverage of mountains also steadily decreases.

Settlement and wetland: The share of mountain cover of settlements and wetland is negligible at all elevation ranges, although also with a tendency to decrease with higher altitudes.

Improvement in the accuracy, frequency and resolution of geospatial data will allow for a finer analysis of green cover changes in the future across different elevation classes and land cover types.

Figure 51: Global mountain cover, disaggregated by elevation and land cover type

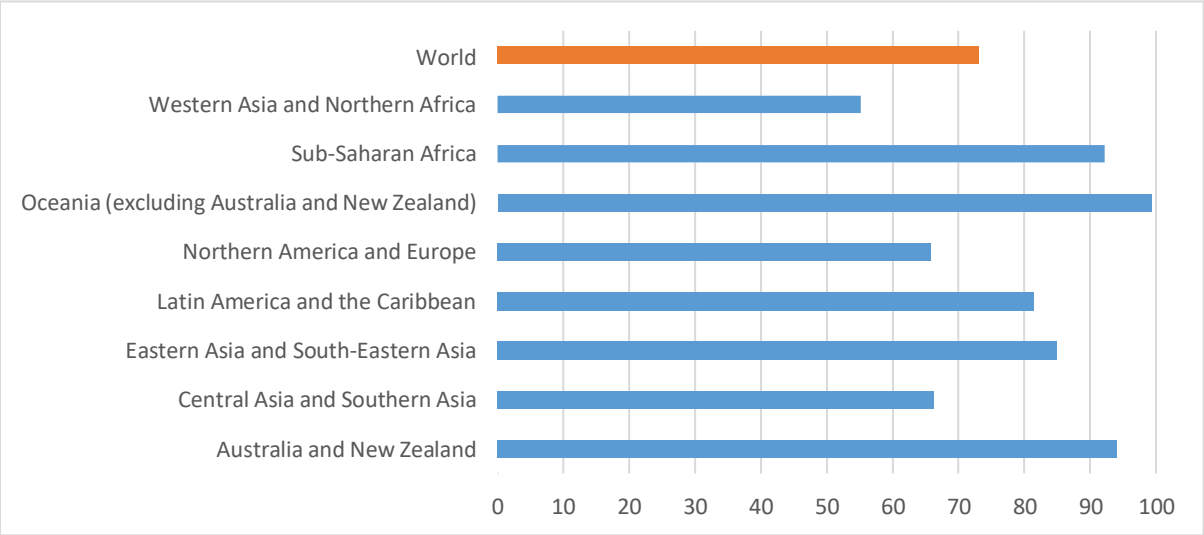


Simplified Kapos elevation scale

Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
> 4 500 m	3 500-4 500 m	2 500-3 500 m	1 500-2 500 m	1 000-1 500 m LER > 300 m	300-1 00 m LER > 300 m

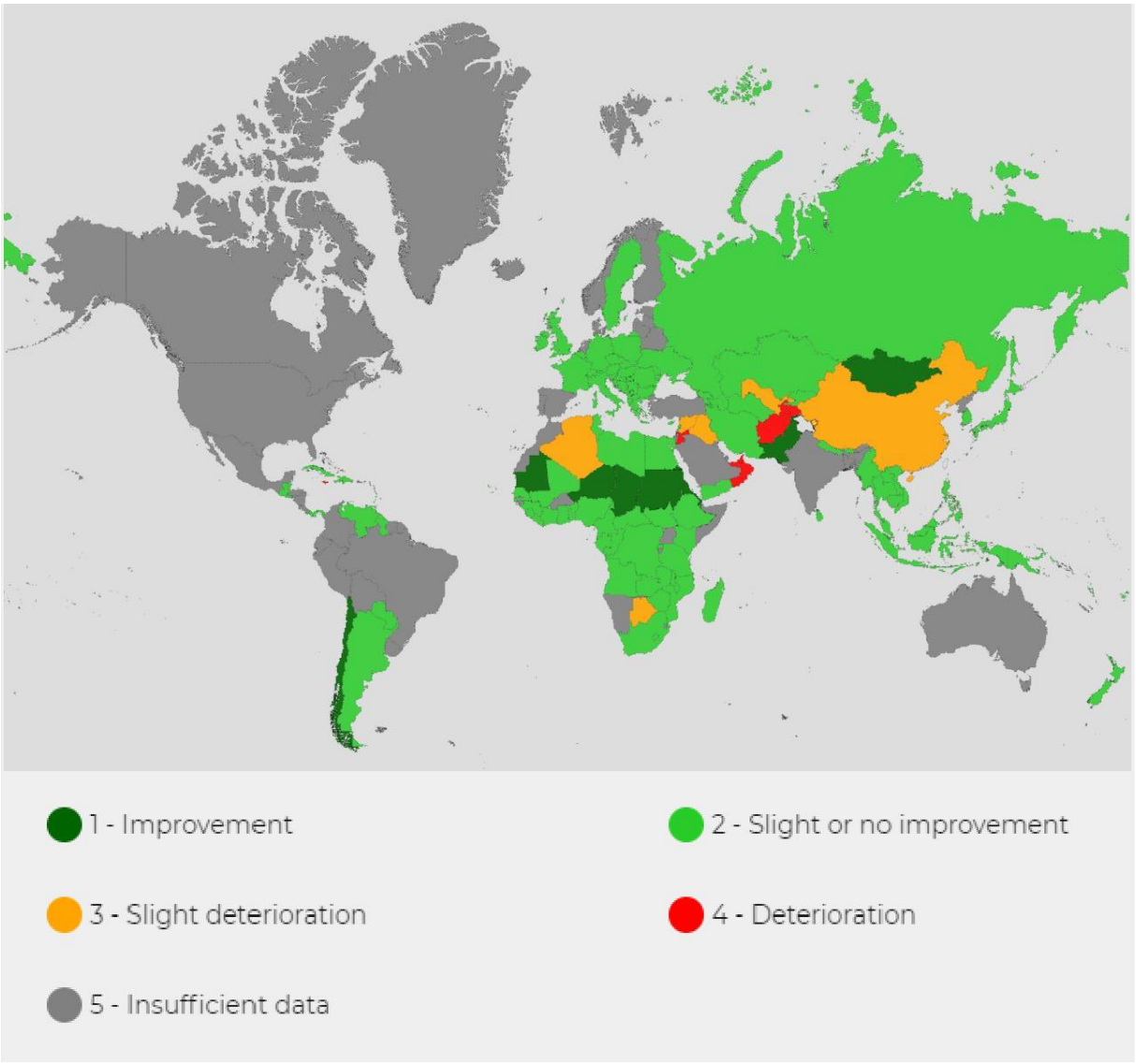
SOURCE: FAO, 2021c.

Figure 52: Mountain green cover index by region, 2018



SOURCE: FAO, 2021c.

Figure 53: Progress in improving mountain green cover index by region, 2015–2018



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SOURCE: FAO, 2021c, modified to comply with UN Geospatial, 2021.

Figure 53 represents the changes in mountain green cover index from 2015 to 2018 in different regions of the world. The figure represents trends in the indicator only for countries for which data exists and has been validated, with the countries where the validation has not yet been completed represented in grey.

SDG INDICATOR 15.6.1

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

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

Data Series	Trend assessment
Countries that are Contracting Parties to the International Treaty on Plant Genetic Resources for Food and Agriculture (FAO, 2021e)	Improvement
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	Improvement
Total reported number of Standard Material Transfer Agreements transferring plant genetic resources for food and agriculture to the country	Improvement

A growing number of countries are taking measures to ensure access and benefit-sharing of plant genetic resources for food and agriculture, but more must be done

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization entered into force on 12 October 2014 as a supplementary agreement to the Convention on Biological Diversity to further advance the third objective of the Convention. The Protocol is still at the early stages of its implementation. Nevertheless, many Parties to the Nagoya Protocol as well as non-Parties have made considerable progress in putting in place access and benefit-sharing (ABS) frameworks.

As of 1 February 2021, 128 countries and the European Union have ratified the Protocol and 67 countries, and the European Union have adopted ABS frameworks and published related information in the ABS Clearing-House. So far, 22 countries have published 2,110 internationally recognized certificates of compliance and six countries have published 44 checkpoint communiqués. The Secretariat of the Convention on Biological Diversity is engaging with countries to facilitate this process.

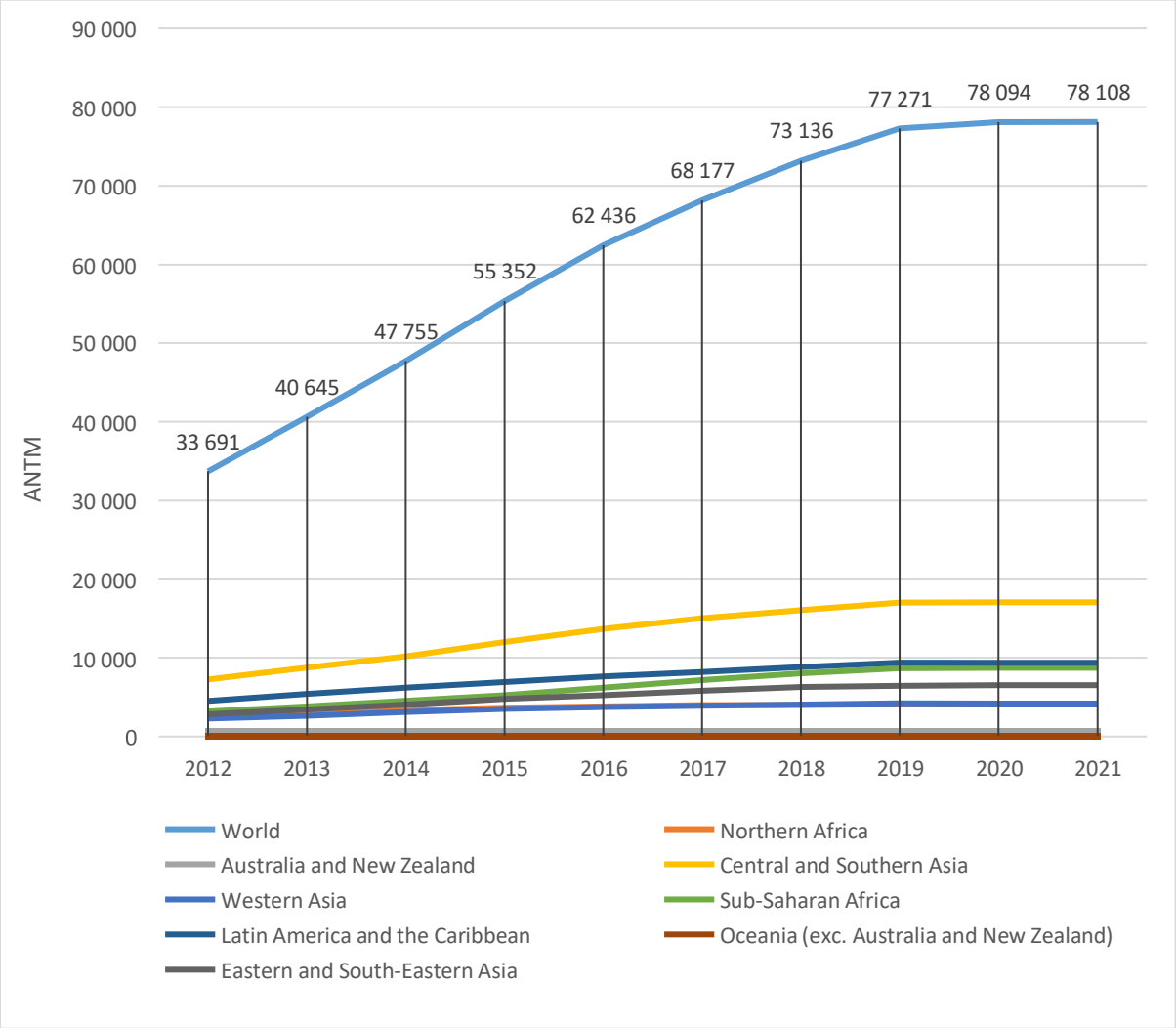
Facilitating access to plant resources

The International Treaty on Plant Genetic Resources for Food and Agriculture facilitates access to plant genetic material for farmers and plant breeders to develop new crop varieties to adapt agricultural production to changing environments, with the aim to

enhance global food security. The exchange of plant material provides the opportunity for sharing monetary and non-monetary benefits arising from the use of such material with farmers in developing countries, which constitutes an important incentive for them to further continue conserving and sustainably using plant genetic material.

As of February 2021, 57 countries have provided reports under the Compliance Procedures about their access and benefit-sharing measures to facilitate exchange of plant material, while there are 148 Contracting Parties to the Treaty. To date, over 5.5 million samples have been transferred globally with more than 78 000 contracts concluded - known as Standard Material Transfer Agreements (SMTAs), which 6 447 recipients in 181 countries have used to facilitate exchange of plant genetic material.

Figure 54: Number of Standard Material Transfer Agreements (SMTAs) transferring plant genetic resources for food and agriculture in the world, 2012–2021



SOURCE: FAO, 2021c.

Guidance on core indicators for agrifood systems: Measuring the private sector's contribution to the Sustainable Development Goals

The achievement of the SDGs is a collective, multi-stakeholder endeavour. One of the key gaps in country monitoring and reporting on progress towards the SDGs is capturing the significant contribution of the private sector in the agrifood system transformation pathway to the SDGs.

While many agrifood private sector organisations – both large and small – are now collecting a significant amount of data related to their environmental, social and governance impact; this data is i) often not in a form easily merged with government data; or ii) not aligned specifically with the SDG agenda; or iii) not collected by or communicated to the relevant national authorities. This means that countries are not able to report on the full picture of progress, and private companies are not given the credit they deserve for their contribution to the SDGs.

FAO set out to address these gaps through the development of a set of indicators which can be used by the private sector and feed into national level reporting on the SDGs. The indicators build on UNCTAD's broader *Guidance on core indicators for entity reporting on the contribution towards the implementation of the Sustainable Development Goals* (UNCTAD-GCI [UNCTAD, 2019]), but are focused specifically on the food and agriculture sector.

Objectives

Similar to the UNCTAD GCI, the objective of the guidance on core indicators for agrifood systems is to provide practical information on how food and agriculture companies' contribution to the SDGs can be measured in a consistent manner and in alignment with countries' needs relating to monitoring the attainment of Agenda 2030. The indicators are further intended to serve as a tool to assist governments in:

- improving private sector's accountability mechanisms and assessing their contribution to SDG implementation, in particular on key transformative actions needed to achieve the SDGs
- setting standards and policies for corporate sustainability reporting, establishing national private sector reporting mechanisms and enabling the reporting on SDG Indicator 12.6.1 (Number of companies publishing sustainability reports), and
- potentially reusing the data reported by private entities to improve SDG monitoring at the national level.

The guidance provides additional information of how to measure the 32 core indicators identified in UNCTAD's sector-agnostic framework and proposes 25 new core indicators addressing additional economic, environmental, social and institutional material issues for private actors engaged in the agrifood sector.

Overview of indicators

ECONOMIC	ENVIRONMENTAL	SOCIAL	INSTITUTIONNAL
A.1.1 Revenue A.1.2 Value added A.1.3 Net value added A.2.1 Taxes and other payments to the government A.3.1 Green investment A.3.2 Community investment A.3.3 Total expenditure on research and development A.4.1 Percentage of local procurement A.4.2 Fair pricing and transparent contract practices A.5.1 Gross profit margin A.5.2 Product diversification by revenue A.5.3 Financial risk management practices	B.1.1 Water recycling and reuse B.1.2 Water use efficiency B.1.3 Water stress B.1.4 Water management practices B.2.1 Reduction of waste generation B.2.2 Waste reused, remanufactured and recycled B.2.3 Hazardous waste B.3.1 Greenhouse gas emissions (scope 1) B.3.2 Greenhouse gas emissions (scope 2) B.3.3 Greenhouse gas emissions (scope 3) B.3.4 Greenhouse gas emissions management practices B.4.1 Ozone-depleting substances and chemicals B.5.1 Renewable energy B.5.2 Energy efficiency B.6.1 Natural ecosystem conversion B.6.2 Habitat area protected, created or restored B.6.3 Sustainable use, conservation and restoration of biodiversity practices B.7.1 Soil degradation B.8.1 Fertilizer use B.8.2 Fertilizer management practices B.8.3 Pesticide use B.8.4 Pesticide management practices B.9.1 Food loss B.9.2 Food waste	C.1.1 Employee wages and benefits as a proportion of revenue C.1.2 Percentage of employees and other workers paid above living wage C.2.1 Average hours of training per year per employee C.2.2 Expenditures on employee training per year per employee C.3.1 Expenditures on employee health and safety as a proportion of revenue C.3.2 Frequency/incident rates of occupational injuries C.4.1 Percentage of employees and workers covered by collective agreements C.4.2 Incidents of child labour C.4.3 Incidents of forced labour C.5.1 Food labelling practices C.5.2 Percentage of sales of nutritious food C.5.3 Percentage of facilities or operations in compliance with food safety standards C.6.1 Incidents of tenure rights violation	D.1.1 Number of board meetings and attendance rate D.1.2 Proportion of women in managerial positions and among board members D.1.3 Board members by age group D.1.4 Number of meetings of audit committee and attendance rate D.1.5 Compensation per board member D.2.1 Amount of fines paid or payable due to corruption-related settlements D.2.2 Average number of hours of training on anti-corruption issues per year per employee D.3.1 Management of economic, environmental, social, and institutional risks through due diligence

SOURCE: FAO, 2021a.

Scope and audience

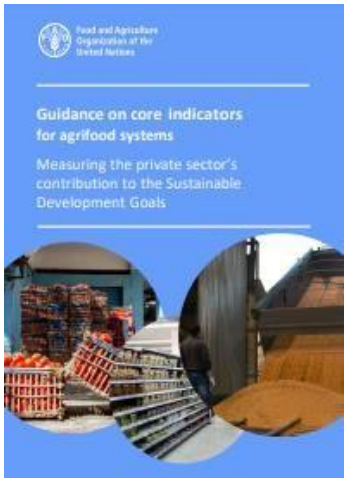
The indicators aim to cover the agrifood system at a broad level to provide a universal set of 'core' indicators as a starting point for any actor in the agrifood system. They apply to all stages of the agrifood system from farm to plate – agricultural production (including fisheries, aquaculture, and forestry), food processing, food wholesale, food retail, and food service/restaurant.

For the purpose of using these indicators, FAO considers the private sector to encompass a broad array of entities, ranging from farmers, fishers, foresters, livestock herders, and MSMEs (including cooperatives, farmers/fishers/foresters/livestock producers' organizations and social enterprises) to large firms, both domestic and multinational companies, financial institutions, investors, and private standard setting or benchmarking organisations.

The indicators aim to apply to all sizes of companies – both large and small. While larger companies are likely to have more advanced SDG reporting frameworks and data collection systems in place, small and medium enterprises make up the bulk of food systems worldwide and play an integral role in achieving the SDGs, particularly in developing countries. Larger companies can and should be encouraged to share lessons learned and offer support to smaller and medium enterprises in their network and/or supply chain on how to implement these indicators and establish data collection and reporting systems.

Next steps

The Guidance is the result of an extensive internal and external peer review and consultation process, as well as initial pilot tests with private sector entities. FAO will now work with partner organisations to ensure that the indicators contribute to strengthen existing reporting and accounting standards, agrifood benchmarks, and accountability frameworks. FAO also intends to provide technical support to member states in using the indicators to develop or improve national private sector's accounting mechanisms and understand their impact on the SDGs.



Data sources and statistical methods used for the FAO SDG Progress Report

The 2030 Agenda for Sustainable Development has put increased pressure on UN statistical programs to provide more up-to-date information for monitoring sustainable development and providing timely evidence for policy makers. Six years into its implementation, is becoming more and more pressing the demand of governments, donors and international organizations to assess whether the established SDG targets will be achieved or not, at which level (global regional, or country) and on whether – beyond national averages – inequalities between different population groups and territorial areas will be eradicated by the end 2030. To improve on the first UN SDG Progress Chart, a dedicated Task Team was launched in February 2020 under the aegis of the Interagency and Expert Group on SDG indicators (IAEG-SDG). This Task Team, of which FAO is a member, developed guidance and further streamlined the methodology and design of the SDG Progress Chart, which is now produced on an annual basis. In the same vein, this report draws on the UN SDG Progress Chart's overall approach foranalyzing trends, relying on established, quantitative approaches for assessing the statusof achievement and the trend over time.

The objective of the present technical annex is twofold: annex A.1 briefly describes SDG indicators under FAO's custodianship included in this report along with the main data sources used for their computation, while annex A.2 presents the methodology used for the progress assessment. More specifically, the first section of annex A.2 discusses the general approach adopted for assessing the current status and the methods for assessing trends, while the second provides indicator-specific fiches, which detail the specific combination of methods used taking into account all relevant characteristics of each indicator (normative direction, nature of indicator, existence of a numerical yardstick).

A major distinction is made for indicators underpinning targets with and without a numerical yardstick. It should be recalled that only a minority (about 30 percent) of all SDG targets have an explicit numerical yardstick, which poses a serious challenge to the assessment of progress. Some international organizations have come up with creative ways of bypassing this problem, for instance by setting the global or regional "target" as the average of the top five performing countries. However, such methods carry important risks as they effectively blur the boundaries between the roles of statisticians and legislators.

Therefore, in absence of a numerical yardstick, this report will only assess whether progress is going in the right direction or not, and, if so, whether improvement is being made at a good or only fair pace. On the other hand, for the level of achievement, the report will provide a summary picture of the current situation by associating each country to the corresponding quintile of the distribution of indicator values. It should also be noted that not all indicators under FAO custodianship are eligible for this type of progress assessment. Specifically, eight out of the 21 indicators are not included in this assessment because they did not meet the required criteria (which in most cases, relate to the sparsity of available data).

Annex A.1 – SDG Indicators under FAO custodianship: definitions and data sources

SDG Indicator 2.1.1: Prevalence of Undernourishment (PoU)

The 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 (MoE) for PoU would very likely exceed plus or minus 2.5 percent in most cases. For this reason, FAO does not publish national level PoU estimates when they are lower than 2.5 percent. The following is the list of parameters used for the computation of the PoU and their main data sources:

- Average dietary energy consumption (DEC) per capita per day – Food Balance Sheets or dietary intake survey data (both with limitations, leading to the indicator traditionally being 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) – household income-expenditure surveys (HIES).
- Minimum dietary energy requirement (MDER) per day – demographic data, 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 the population who have experienced food insecurity (constrained access to food due to lack of money or other resources) at moderate or severe levels during the reference period.

Data to compute this indicator are collected through an eight-question module, responses to which are analysed using the Item Response Theory (Rash model) to obtain cross-country comparable measures of the severity of food insecurity of household or individuals, treated as a "latent" trait. The module (available in about 200 languages) should be incorporated into a large-scale nationally representative population survey. To fill the gap until countries are collecting their own FIES data, FAO has included this module in the Gallup World Poll since 2014 and collected data at individual level for about 140 countries. In 2021, about 70 of these countries authorized FAO to publish the indicator compiled based on this non-official data.

SDG Indicator 2.3.1: Productivity of small-scale food producers

For the purpose of computing 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 34387). In line with recommendations from the Manual for Measuring Productivity published by the Organization for Economic Co-operation and Development (OECD), 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 physical volume of agricultural product obtained by the small-scale food producer multiplied by the constant sale price received during same year.

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

SDG Indicator 2.3.2: Incomes of small-scale food producers

For the purpose of computing indicator 2.3.2, "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 34387). In line with the resolution adopted by the 17th International Conference of Labour Statisticians (ICLS), income is calculated as the gross on-farm income of the 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 on a specific population of producers – those considered as small-scale – the ideal data source for measuring them is a single survey that collects all the information required with reference to individual production units. The most appropriate data source for collecting information on total volume of agricultural production and associated costs would be agricultural surveys. Other possible sources are household surveys integrated with an agricultural module, agricultural censuses, and administrative records integrated with other sources.

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

[Not included in this edition of the Report due to scarcity of data]

The indicator is calculated as the area under productive and sustainable agriculture (assessed based on 11 sub-indicators covering the economic, social and environmental dimensions) divided by the total agricultural land area (according to the World Census for Agriculture definition). The preferred data collection instrument is a farm survey that should include the minimum set of questions needed to assess 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 agricultural data (see AGRISurvey programme and 50x2030 initiative).

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

Indicator 2.5.1.a measures the total number of plant genetic resources for food and agriculture secured in medium- or long-term conservation facilities. The number of resources conserved under medium or long-term storage conditions provides an indirect measurement of the total genetic diversity, which are secured for future use. Overall, positive variations are therefore approximated to an increase in the agro-biodiversity secured, while negative variations to a loss of it. Thus, the indicator is calculated as the total number of unique accessions of plant genetic resources, with actual or potential value for food and agriculture, secured in medium to long-term conservation facilities.

Officially appointed national focal points and managers of regional or international gene banks are requested to provide the list of accessions conserved in medium- or long-term conservation facilities. Data are reported to and accessible from the World Information and Early Warning System (WIEWS), the FAO platform established to facilitate information exchange as well as 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 number of resources conserved under medium or long-term storage conditions provides an indirect measurement of the total genetic diversity, which are secured for future use. Overall, positive variations are therefore approximated to an increase in the agro-biodiversity secured, while negative variations to a loss of it. Thus, the indicator is calculated as the number of local breeds with enough genetic material stored within gene bank collections allowing reconstituting the breed in case of extinction. A local breed of a country consists of the mammalian and avian livestock belonging to a specific breed that is found only in the respective country. Populations with sufficient material stored means local breed populations with enough genetic material stored to reconstitute the breed in case of extinction.

National coordinators for management of animal genetic resources, nominated by their respective government, provide data to the 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 livestock local breeds among local breeds with known risk status classified as being at risk of extinctions at a certain moment in time.

The indicator focuses on live animals, it is based on the number of animals kept on farms or in the field (in-situ in-vivo), it includes the number of animals kept in ex-situ in-vivo programmes, such as zoos. This SDG Indicator divides breeds into three categories, according to their level of risk of extinction: not at risk, at risk, unknown. Data to compute indicator 2.5.2 can be collected with livestock population surveys or censuses at breed level integrated with complementary data from breeders associations. Data are reported to the Domestic Animal Diversity Information System (DAD-IS) by the same National coordinators for the management of animal genetic resources as for indicator 2.5.1.b, nominated by their respective government.

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

Indicator 2.a.1 is defined as the agriculture share of government expenditure, divided by the agriculture value added share of Gross Domestic Product (GDP), where agriculture refers to the agriculture, forestry, fishing, and hunting sector (Division A of ISIC Rev 4). The measure is a currency-free index, calculated as the ratio of these two shares. An Agriculture Orientation Index (AOI) greater than one reflects a higher orientation towards the agriculture sector, which receives a higher share of government spending relative to its contribution to the economic value-added. An AOI less than one reflects a lower orientation to 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 Expenditures according to the Government Finance Statistics (GFS) and the Classification of the Functions of Government (COFOG), and Agriculture value added share of GDP according to the System of National Accounts (SNA). Data on government expenditures is collected from national governments using the annual Government Expenditure in Agriculture (GEA) questionnaire administered by FAO. Comparable data can also be derived from the International Monetary Fund (IMF) database on GFS. Data on agriculture value-added are obtained from the UN Statistics Division, 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" that occur on a given 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 CPI). The same indicator can be used by countries to also 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 originates from the IMF, and UNSD for counties not covered by the IMF. The FAO Food CPI dataset consists of a complete and consistent set of time series from January 2000 onwards.

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

Indicator 5.a.1 is divided into two sub-indicators: (a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; (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 the individuals in the reference population (adult agricultural population) who meet at least one of these conditions: 1) being listed as owners or holders on a certificate that testifies security of tenure over agricultural land; 2) having the right to sell agricultural land; 3) having the right to bequeath agricultural land.

For the purpose of computing indicator 5.a.1, the adult agricultural population is constituted by all adult individuals (18 years old or older) belonging to an agricultural household. In this context, agricultural households are defined as households who operated land for agricultural purposes and/or raised/tended livestock in the past 12 months, regardless of the final destination of the production. It is important to note that households in which members were engaged in agriculture only through wage labour are excluded from the reference population.

Privileged data sources for computing indicator 5.a.1 are agricultural surveys, integrated or multi-purpose household surveys, population censuses and agricultural censuses. Given the limited number of surveys providing data to compute the two sub-indicators, in 2021, the FAO started using Demographic and Health surveys (DHS) to compute proxies of 5.a.1. These surveys, collecting standardized information in a substantial 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 during the last 12 months, or had at least one member engaged in agriculture as self-employed. In the 2021 FAO SDG progress report, a proxy of indicator 5.a.1 based on DHS data has been computed for the following countries: Afghanistan, Albania, Armenia, Burundi, Cambodia, Cameroon, Chad, Guatemala, Haiti, India, Indonesia, Lesotho, Myanmar, Nepal, Rwanda, Sierra Leone, United Republic of Tanzania, Zambia, Zimbabwe.

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

Indicator 5.a.2 measures the level 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. Each country is scored against the number of proxies found to be included in its legal framework:

- Mandatory joint registration, or economic incentives for 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 by performing a legal assessment of countries' relevant laws performed by an officially nominated national legal expert, following the methodological guidelines and using the questionnaire provided 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 and 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 (USD/m3). Water used is defined as water that is directly abstracted or is received by an industry or households from another industry. This is distinct from "water abstraction" or "water withdrawal", which are defined as water removed from a river, lake, reservoir or aquifer.

Data on water use are collected through administrative sources at country level by relevant national institutions, and communicated to the FAO through the AQUASTAT Water and Agriculture questionnaire. Data on value added for each sector are obtained from the UN Statistics Division, which provides national accounts estimates for 220 countries and territories.

As few countries publish water use data by sector on a regular basis, one of the main constrains for the computation of this indicator is the difficulty to obtain up-to-date data. Furthermore, data on the numerator (value added) and denominator (water use) may be from different years, thus requiring imputation to align the years.

SDG Indicator 6.4.2: Level of water stress

Indicator 6.4.2 measures the level of water stress of freshwater withdrawal within the available country's renewable freshwater resources. This is computed as the ratio between the total freshwater withdrawn by all major industrial sectors (according to ISIC Rev 4) and total renewable freshwater resources, after taking into account environmental flow requirements. Values of the indicator are assessed against five levels of severity stress: < 25% (No stress), 25%-50% (Low stress), 50-75% (Medium stress), 75-100% (High stress), > 100% (Critical).

Data for this indicator are usually collected by national ministries and institutions having water-related issues in their mandate, such as national statistics, offices, ministries of water resources, agriculture, or environment. Official counterparts at country level are the national statistics office and/or the line ministry for water resources. More specifically, FAO requests countries to nominate a National Correspondent to act as the focal point for the 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). The data for the indicator are collected through the AQUASTAT Water and Agriculture questionnaires to be answered by the relevant institutions in each country.

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

Indicator 12.3 is divided into two sub-indicators covering different stages of the supply chain. Indicator 12.3.1.a, the Food Loss Index (FLI), focuses on food losses that occur from production up to (not including) the retail level. This indicator measures the change in percentage losses for a basket of 10 main commodities by countries, in comparison with a base period that has been set as 2015. Sub-indicator 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 (UNEP).

The FPL is a composite of 10 commodities, by value of production, within five commodity groups that cover diversity of diets, while being comparable at aggregate level. Each country selects its basket of commodities, by selection two commodities per commodity group that are most important and relevant to them. The basket is then weighted by the economic value of each commodity.

Currently, the primary main data source for the index are loss quantities estimated in the Food Balance Sheets as collected by FAO through its Annual Production Questionnaires to the countries. However, as countries usually report only on a limited number of commodities through Food Balance Sheets, FAO advocates for a survey-based and nationally representative collection of data on the top two commodities for each of the main commodity groups, with a frequency of three to five years. A mix of data sources (e.g. surveys and industry data), data collection and data estimation methods (e.g. model-based estimates) can be used for cost-efficiency.

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

Indicator 14.4.1 assess the sustainability of the world's marine capture fisheries by their abundance providing a measure of the percentage of the stocks within sustainable levels. 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.

Given the highly migratory nature of many fish stocks, the indicator has hitherto been monitored only at global and regional level. However, beginning in 2019, FAO has launched a new effort to collect national level data from countries on fish stocks that are found only within one country's Exclusive Economic Zone (EEZ). The indicator requires the development of a reference list of stocks, and for the stocks included 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 (IUU) fishing

Indicator 14.6.1 summarizes the progress made by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing (IUU). The indicator is based upon responses of member states to selected sections of the questionnaire for monitoring the implementation of the Code of Conduct for Responsible Fisheries and related instruments (CCRF). Responses to the questionnaire are converted using an algorithm to obtain a score for the indicator, with each instrument having a different weighting:

- 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 IUU Fishing (30%);
- Adherence and implementation of the 2009 FAO Agreement on Port State Measures (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 responses by FAO Members on the adherence and implementation of the abovementioned instruments, States will score an indicator value between 0 and 1. Based on this score, each country is categorized into 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. This is computed by adjusting the value added of marine capture fishery with a sustainability multiplier, which is based on an assessment of fish stock sustainability within FAO Fishing Areas. For each country, the sustainability multiplier is the average sustainability weighted by the proportion of the quantity of marine capture for each respective fishing area in which 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 of fish catch across Major Fishing Area. 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 is then

transformed using FAO published catch data, itself a combination of nationally reported data and estimates, and FAO published stock status to estimate the final figure for sustainable fisheries as a percentage of GDP.

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

Indicator 14.b.1 is based on responses by States to respective sections of the CCRF questionnaire covering the implementation of three key measures focusing on actual efforts of promoting and facilitating access rights to small scale fisheries. Responses are converted using an algorithm to obtain a score for the indicator, with each measures having a different weighting:

- 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 for small-scale fishers and fish workers to contribute to decision-making processes (30 percent).

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

The indicator is based on a common, long-standing data reporting mechanism, consisting of the biennial questionnaire on the CCRF. The questionnaire is sent to all FAO member states since 1995. In 2016, a new module was introduced in the questionnaire to collect information on the implementation status of all three variables and produce the indicator baseline.

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

Indicator 15.1.1 measures the proportion of forest area over total land area. Forest area is defined as land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or 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 15.1.1 are collected through the FAO's Global Resources Assessment (FRA). All data are provided to FAO by officially nominated national focal points in the form of a country report following a standard format, which includes the original data and reference sources and descriptions of how these have been used to estimate the 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 sub-indicators:

- Forest area annual net change rate (Percent);
- Above-ground biomass stock in forest, 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 the five sub-indicators are collected through the FAO's Global Forest Resources Assessment (FRA) every five years (with the exception of the sub-indicator 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 officially nominated national focal points in the form of a country report following a standard format, which includes the original data and reference sources and descriptions of how these have been used to estimate the forest area for different points in time.

SDG Indicator 15.4.2: Mountain Green Cover Index (MGCI)

Indicator 15.4.2 measures changes in the area of green vegetation in mountain areas (forest, shrubs and pastureland, and cropland). The Mountain Green Cover Index (MGCI) is defined as the percentage of green cover over the total surface of the mountain region of a given country and for given reporting year, where the green cover area is given by the sum of 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 status of conservation of mountain ecosystems.

FAO has calculated the indicator using the European Space Agency Climate Change Initiative (ESA CCI) Land Cover products, 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 product consists in a series of annual Land Cover maps at 300 meters resolution spanning from 1992 to 2018. However, the data source is not prescriptive, provided that countries adhere to the methodology. FAO shares country figures with NSO SDG focal points for their validation before publication. On the same occasion, FAO requests countries to provide their own estimates for the indicator in case these are available.

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

The 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 stipulates that Contracting Parties ensure the conformity of its laws, regulations and procedures with their obligations under the International Treaty (Article 4). Under the Multilateral System of Access and Benefit-sharing (Articles 10-13), 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 the Multilateral 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 adopted the Procedures and operational mechanism to promote compliance and address issues of non-compliance. Under the monitoring and reporting in the Procedures, each Contracting Party is requested to submit a report on the measures it has taken to implement its obligations under the International Treaty, including the access and benefit-sharing measures. Contracting Parties report using an agreed 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 International Treaty through Easy-SMTA. SMTA is a mandatory contract that Contracting Parties of the International Treaty have agreed to use whenever plant genetic resources falling under the Multilateral System are made available.

Annex A.2 – Methods for assessing the current status

1.1 Indicators with a numerical target set in the 2030 Agenda

The current distance to the target is calculated only when a numerical target exists and is explicitly set by the 2030 Agenda, as follows:

$$d_{it} = \begin{cases} x^* - x_{it}, & \text{when the desired direction is an increase over time} \\ \\ x_{it} - x^*, & \text{when the desired direction is a decrease over time} \end{cases}$$

Here x_{it} denotes the numerical value of the generic SDG indicator for country *i* in year *t*; while x^* is the target value of the generic SDG indicator (to be reached by 2030). This distance measure is 0 for indicators having already reached the target (at the time of the assessment).

The distance of a generic region *g* to the target is

$$d_{gt} = \begin{cases} x^* - x_{gt}, & \text{when the desired direction is an increase over time} \\ \\ x_{gt} - x^*, & \text{when the desired direction is a decrease over time} \end{cases}$$

This distance can be easily interpreted if the indicators are expressed as proportions. The distance measure can also be calculated for indicators expressed as a score.

Legend of symbols for assessing the current status

Symbol	Meaning	General outcome
+++	Target already met	Positive
++	Very close to the target	Positive
+	Close to the target	Positive
-	Far from the target	Negative
--	Very far from the target	Negative

1.2 Indicators without a numerical target

In the case of indicators without a numerical target, the distance to the target cannot be calculated. For analytical purposes, it is useful however to provide a summary picture that describes the current worldwide distribution of the indicator. For this reason, we have decided to associate each country to the corresponding quintile. The quintiles divide the entire distribution of countries into five equal groups, according to their indicator value: the first quintile contains the bottom fifth of the countries on the indicators scale (i.e. the 20 % of the countries with the lowest value), the second quintile represents the second fifth (from 20 % to 40 %) etc.; finally the fifth quintile represents the top 20 % countries, i.e. those with the highest values of the indicator.

Quintiles are calculated only at the country level and not at the regional level.

Annex A.3 – Methods for trend assessment

2.1 Indicators having a numerical target

A simple method for assessing the trend of numerical indicators having a numerical target (set by the 2030 Agenda) consists in comparing the actual growth with the growth required to reach the target. Assuming a geometric growth over time, we can derive the following two mathematical expressions:

Actual growth: (setting t_0 as baseline year)

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

Required growth:

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

where x^* is the numerical target to be reached by 2030.

When the SDG target is 0 ($x^*=0$), in order to obtain a meaningful estimate of $CAGR_r$ it is necessary to replace x^* with a value very close to it, but strictly greater than 0. This is justified also on theoretical grounds, given the measurement errors associated with the SDG indicator estimation process, and the objective increasing difficulties for the policy measures to completely eradicate a developmental problem, obtaining an estimate of the SDG indicator equal to 0.

Ratio actual vs. required:

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

Indicators expressed as **scores** ranging from 1 (worst) to 5 (best) require a separate approach that basically consists in a categorization of all the possible combinations between the latest score and the score in the baseline year:

Criteria for judging the trend by comparing the latest score with the previous score

Rule	Color	Assessment category
Baseline=1 to 5 Latest=5	Dark green	Target already met (TAM)
(Latest-Baseline)>=2 AND Latest<5	Green	Improvement (>>)
(Latest-Baseline)=1 AND Latest<5	Light green	Slight improvement (>)
Baseline=Latest (both NOT equal to 5)	Orange	No improvement (stagnation) since baseline (=)
Latest<Baseline	Red	Deterioration/movement away from the target (<<)

2.2 Indicators without a numerical target

In case of indicators without a numerical target, it is only possible to assess the actual growth (t_0 denotes the baseline year):

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

Different criteria can be used to assess the CAGR, depending on the sign of the normative direction and also on the fact that for some indicators a situation that remains unchanged over time (not increase or not decrease) can be judged positively.

2.3 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 indicator where the no-change over time is a positive outcome (normative direction of the indicator is "NOT increase" or "NOT decrease" over time, i.e. the target of the indicator include terms like "maintain" etc.) Used also for the joint assessment of sub-indicators under **15.2.1**, denotes a situation where some sub-indicators show stagnation and others animprovement
=	No improvement (stagnation)	Negative	
<=	No improvement or slight deterioration	Negative	Used ONLY for the joint assessment of sub-indicators under **15.2.1**, indicating a situation where some sub-indicators show stagnation and others a deterioration
<	Slight deterioration	Negative	
<<	Significant deterioration	Negative	

SDG 2.1.1

Target value: 0% (operationalized with a numerical yardstick of 2.5% to account for measurement errors and allow the CR computation)

Normative direction: decrease

Last available data refer to 2020 for regions, 2019 for countries (3-year average 2018-2020)

Assessment of the current status (last available data): distance to the target

Criteria for judging the current distance from the target

Bounds	**Group**	**Symbol**
$d_{it} = 0$	PoU ≤ 2.5	+++
$0 < d_{it} \leq 0.05$	Very close to the target	++
$0.05 < d_{it} \leq 0.10$	Close 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 judging the trend by comparing actual with the required growth

Level or ratio CR	**Color**	**Assessment category**
$x \leq x^*$	Dark green	PoU ≤ 2.5
CR ≥ 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% (operationalized with a numerical yardstick of 5% to account for measurement errors and allow the CR computation).

Normative direction: decrease

Last available data refer to 2020 for regions, 2019 for countries.

Assessment of the current status (last available data): distance to the target

Criteria for judging the current distance from the target

Bounds	**Group**	**Symbol**
$d_{it} = 0$	Target already met	+++
$0 < d_{it} \leq 0.05$	Very close to the target	++
$0.05 < d_{it} \leq 0.10$	Close 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 judging the trend by comparing actual with the required growth

Level or ratio CR	**Color**	**Assessment category**
$x \leq x^*$	Dark green	Target already met
$CR \geq 0.95$	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 (<<)

Countries and regions with different baseline year: Armenia, State of Palestine, Kazakhstan,Kyrgyzstan, Samoa, United Republic of Tanzania, Vietnam (2017).

Countries and regions with different last year: Saint Lucia (2017)

SDG 2.3.1 (Assessment performed for EU countries only)

Target value: double the value of the baseline year

Normative direction: increase

Last available data refer to : 2016

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

Criteria for judging the current distance from the target

Bounds	**Group**	**Symbol**
$d(x^*) \leq 0$	Target already met	+++
$0 < d(x^*) \leq 0.20$	Very close to the target	++
$0.20 < d(x^*) \leq 0.40$	Close to the target	+
$0.40 < d(x^*) \leq 0.60$	Far from the target	-

Bounds	Group	Symbol
d_{x^*} > 0.60	Very far from the target	--

Assessment of the trend from 2010 (baseline year): actual growth compared to the required growth to reach the target (CR)

Criteria for judging the trend by comparing actual with the required growth

Level or ratio CR	Color	Assessment category
$x \leq x^*$	Dark green	Target already met (TAM)
CR ≥ 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 ≤ CR ≤ 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: NA

Normative direction: not decrease

Last available data refer to : 2020

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

Assessment of the trend from 2016 (baseline year): actual growth (CAGR)

Criteria to judge the actual growth (CAGR)

Values of actual growth rate	Color	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$-0.005 \leq CAGR_a \leq 0.01$	Light 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 2.5.2

Target value: NA

Normative direction: not increase

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

Criteria to judge the actual growth (CAGR)

Values of actual growth rate	Color	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$-0.005 \leq CAGR_a \leq 0.01$	Light 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 (<<)

Countries and regions with different baseline year: Faroe Islands, Lithuania, Philippines, Eastern Asia and South-Eastern Asia (2016); Brazil (2017); Colombia, Morocco, Panama, Paraguay (2018); Yemen (2019).

Countries and regions with different last year: Guatemala, Iraq, Japan, Rwanda, Eastern Asia (2017); Australia, Bolivia (Plurinational State of), Sri Lanka (2019).

SDG 2.a.1

Target value: NA

Normative direction: increase

Last available data refer to : 2019

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

Assessment of the trend from 2015 (baseline year): actual growth (CAGR)

Criteria to judge the actual growth (CAGR)

Values of actual growth rate	Color	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$0.005 < CAGR_a \leq 0.01$	Light 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 (<<)

Countries with different baseline year: Benin, Cameroon, Rwanda, Saudi Arabia (2016); Gambia, PapuaNew Guinea, Saint Lucia, Somalia (2017).

Countries with different last year: Afghanistan, Guinea-Bissau, Tunisia (2017); Algeria, Belgium, Bhutan, Cabo Verde, China, Hong Kong Special Administrative Region, Congo, Croatia, Cyprus, Democratic Republic of the Congo, Eswatini, Finland, Gabon, Guyana, Hungary, India, Ireland, Japan, Kyrgyzstan, Lithuania, Maldives, Marshall Islands, Micronesia, Nigeria, Palau, Panama, Republic of Korea, Seychelles, Slovakia, South Africa, State of Palestine, Togo, Trinidad and Tobago, United Arab Emirates (2018).

SDG 6.4.1

Target value: NA

Normative direction: increase

Last available data refer to : 2018

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

Assessment of the trend from 2015 (baseline year): actual growth (CAGR)

Criteria to judge the actual growth (CAGR)

Values of actual growth rate	Color	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$0.005 < CAGR_a \leq 0.01$	Light 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 (<<)

Countries with different baseline year: São Tomé and Príncipe (2016).

SDG 14.4.1

Target value: 100% (operationalized with a target of 95% to account for measurement errors)

Normative direction: increase

Last available data refer to : 2017

Assessment of the current status (last available data): distance to the target (data available only at global level and for marine zones)

Criteria for judging the current distance from the target

Bounds	Group	Symbol
$d_{it} = 0$	Target already met	+++
$0 < d_{it} \leq 0.10$	Very close to the target	++
$0.10 < d_{it} \leq 0.20$	Close to the target	+

Bounds	Group	Symbol
$0.20 < d_{it} \leq 0.30$	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 for global and marine zones.

Criteria for judging the trend by comparing actual with the required growth

Level or ratio CR	Color	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 14.6.1

Target value: 5 (score)

Normative direction: increase

Last available data refer to : 2020

Assessment of the current status (last available data): distance to the target ($x^* = 5$)

Criteria for judging the current distance from the target

Bounds	Group	Symbol
$d_{it} = x^* - x_{i,2020} = 0$	Target already met	+++

Bounds	Group	Symbol
$d_{it} = x^* - x_{i,2020} = 1$	Very close to the target	++
$d_{it} = x^* - x_{i,2020} = 2$	Close to the target	+
$d_{it} = x^* - x_{i,2020} = 3$	Far from the target	-
$d_{it} = x^* - x_{i,2020} > 3$	Very far from the target	--

Assessment of the trend from 2018 (baseline year): comparison of scores

Criteria for judging the trend by comparing the latest score with the previous score

Rule	Color	Assessment category
Baseline=1 to 5 Latest=5	Dark green	Target already met (TAM)
(Latest-Baseline)>=2 AND Latest<5	Green	Improvement (>>)
(Latest-Baseline)=1 AND Latest<5	Light green	Slight improvement (>)
Baseline=Latest (both NOT equal to 5)	Orange	No improvement (stagnation) since baseline (=)
Latest<Baseline	Red	Deterioration/movement away from the target (<<)

14.7.1

Target value: NA

Normative direction: increase

Last available data refer to : 2017

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

Assessment of the trend from 2015 (baseline year): actual growth (CAGR)

Criteria to judge the actual growth (CAGR)

Values of actual growth rate	Color	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$0.005 < CAGR_a \leq 0.01$	Light 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 (score)

Normative direction: increase

Last available data refer to : 2020

Assessment of the current status (last available data): distance to the target ($x^* = 5$)

Criteria for judging the current distance from the target

Bounds	Group	Symbol
$d_{it} = x^* - x_{i,2020} = 0$	Target already met	+++
$d_{it} = x^* - x_{i,2020} = 1$	Very close to the target	++
$d_{it} = x^* - x_{i,2020} = 2$	Close to the target	+
$d_{it} = x^* - x_{i,2020} = 3$	Far from the target	-
$d_{it} = x^* - x_{i,2020} > 3$	Very far from the target	--

Assessment of the trend from 2018 (baseline year): comparison of scores

Criteria for judging the trend by comparing the latest score with the previous score

Rule	Color	Assessment category
Baseline=1 to 5 Latest=5	Dark green	Target already met (TAM)
(Latest-Baseline)>=2 AND Latest<5	Green	Improvement (>>)
(Latest-Baseline)=1 AND Latest<5	Light green	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: NA

Normative direction: Not decrease

Last available data refer to : 2020

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

Assessment of the trend from 2015 (baseline year): actual growth (CAGR)

Criteria to judge the actual growth (CAGR)

Values of actual growth rate	Color	Assessment category
$CAGR_a > 0.001$	Dark green	Improvement since baseline-year (>>)
$-0.0005 \leq CAGR_a \leq 0.001$	Light green	Slight or no-improvement since baseline-year (>=)
$-0.001 \leq CAGR_a < -0.0005$	Orange	Slight deterioration since baseline-year (<)

Values of actual growth rate	Color	Assessment category
$CAGR_a < -0.001$	Red	Deterioration since baseline-year (<<)

SDG 15.4.2

Target value: NA

Normative direction: Not decrease

Last available data refer to : 2018

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

Assessment of the trend from 2015 (baseline year): actual growth (CAGR)

Criteria to judge the actual growth (CAGR)

Values of actual growth rate	Color	Assessment category
$CAGR_a > 0.001$	Dark green	Improvement since baseline-year (>>)
$-0.0005 \leq CAGR_a \leq 0.001$	Light 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 15.6.1

Indicator 15.6.1 is constituted by three sub-indicators.

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: NA

Normative direction: not decrease

Last available data refer to : 2021

Assessment of the trend from 2016 (baseline year): actual growth (CAGR) (only at regional and global level, no assessment at country level)

Criteria for judging the trend by comparing actual with the required growth

Values of actual growth rate	Color	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$-0.005 < CAGR_a \leq 0.01$	Light 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: NA

Normative direction: not decrease

Last available data refer to : 2021

Assessment of the trend from 2015 (baseline year): actual growth (CAGR) (only at regional and global level, no assessment at country level)

Criteria for judging the trend by comparing actual with the required growth

Values of actual growth rate	Color	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$-0.005 < CAGR_a \leq 0.01$	Light 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: NA

Normative direction: not decrease

Last available data refer to : 2021

Assessment of the trend from 2015 (baseline year): actual growth (CAGR)

Criteria to judge the actual growth (CAGR)

Values of actual growth rate	Color	Assessment category
$CAGR_a > 0.01$	Dark green	Improvement since baseline-year (>>)
$-0.005 < CAGR_a \leq 0.01$	Light 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 (<<)

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