



**MODULE 1 SUSTAINABLE AGRO-LIVESTOCK FARM AND ANIMAL WELFARE:  
METHOD, TECHNIQUE, AND EXPERIENCES**

**UNIT 1**

**Agricultural multifunctionality and sustainable farm**

**THE FOOD AND AGRICULTURE RELATED  
SUSTAINABLE DEVELOPMENT GOALS**

**Lesson 1**

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Perugia University**

Source: FAO. 2021. Tracking progress on food and agriculture-related SDG indicators 2021: A report on the indicators under FAO custodianship. Rome. <https://doi.org/10.4060/cb6872en>



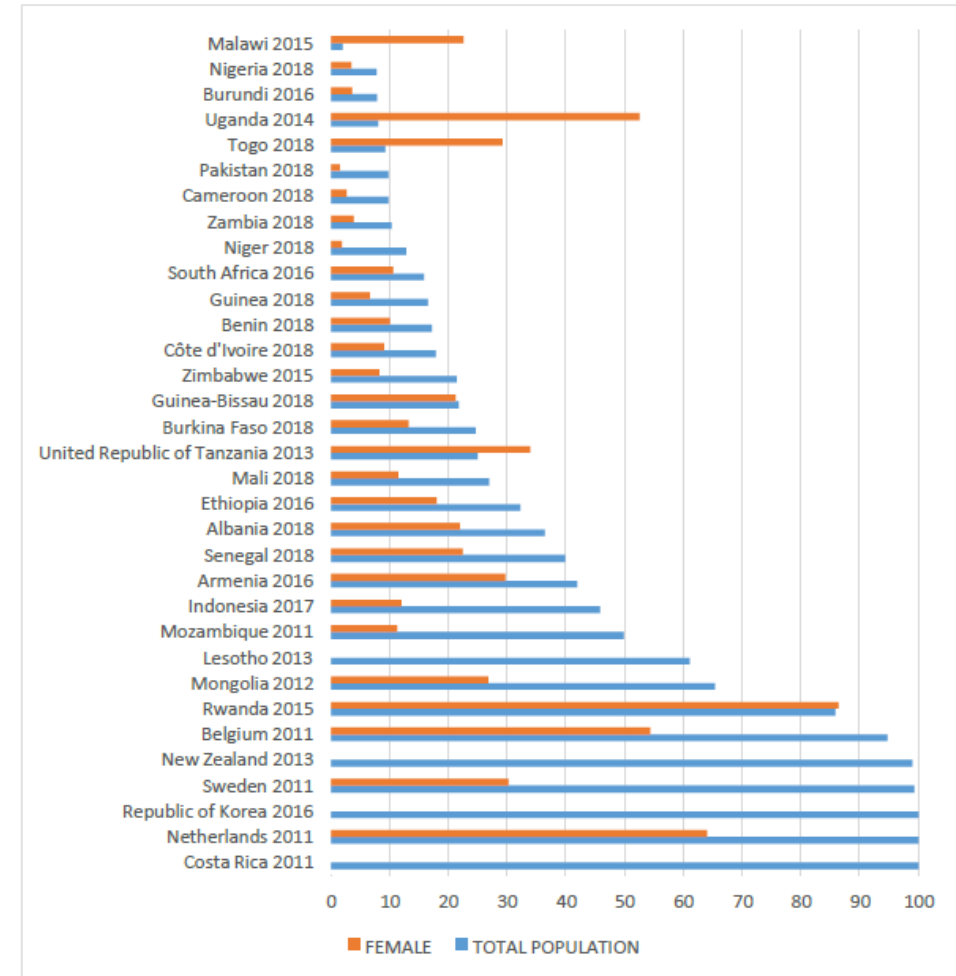
## Food and agriculture-related SDG indicators







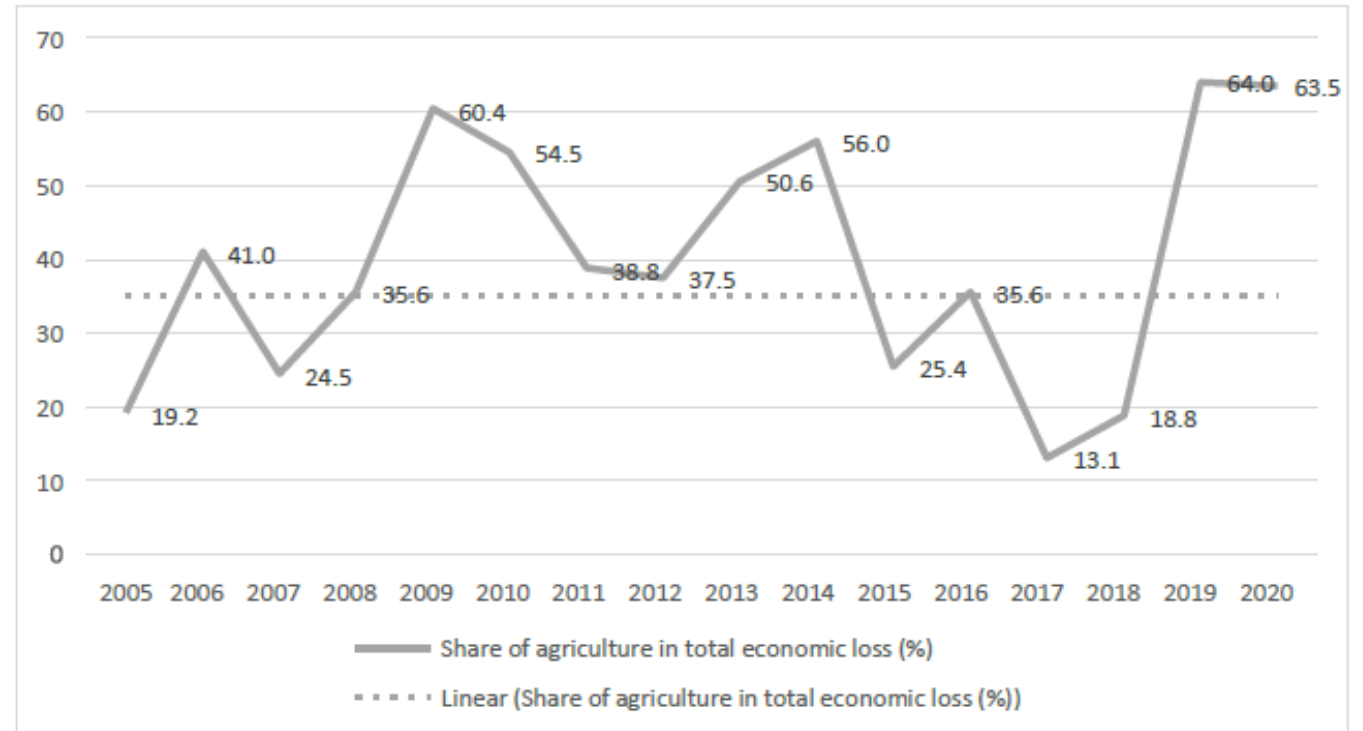
**SDG INDICATOR 1.4.2** Proportion of total adult population with secure tenure rights to land, (a) with legally recognized documentation, and (b) who perceive their rights to land as secure, by sex and type of tenure



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)**

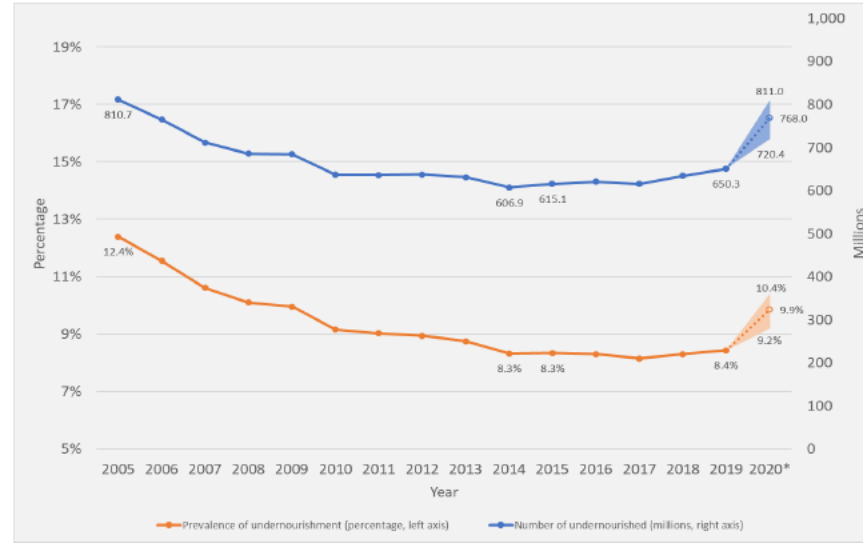


SOURCE: United Nations Office for Disaster Risk Reduction, 2021.

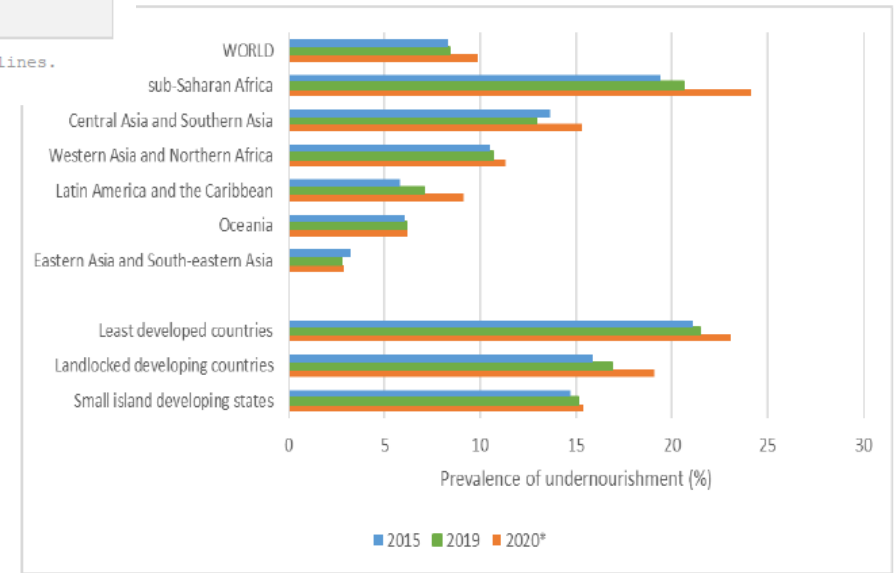




## SDG INDICATOR 2.1.1 Prevalence of undernourishment (PoU)



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.







### INDICATOR 2.1.2 Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)

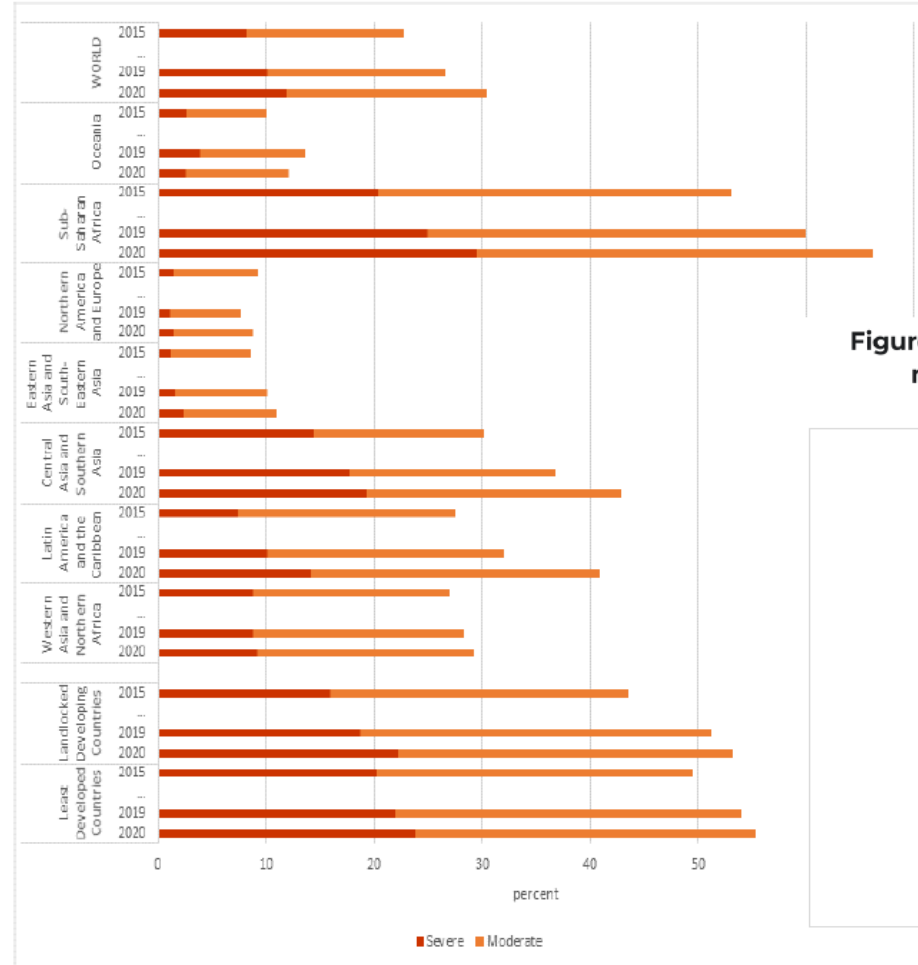
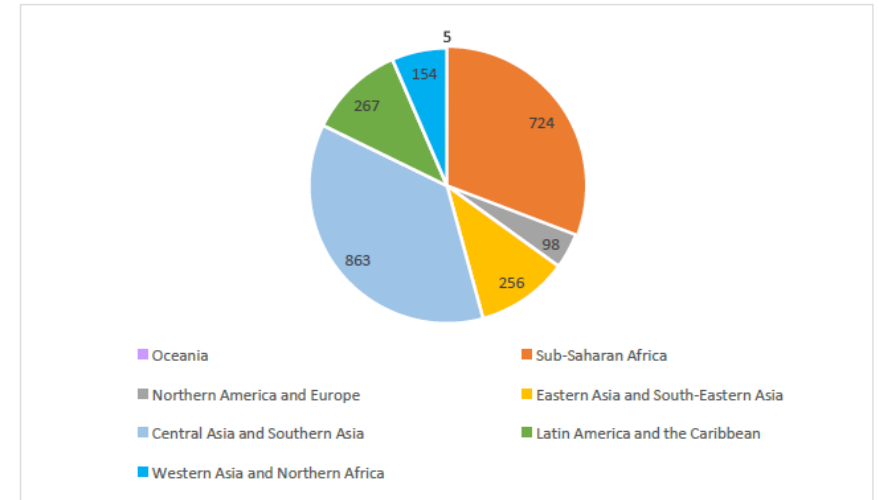
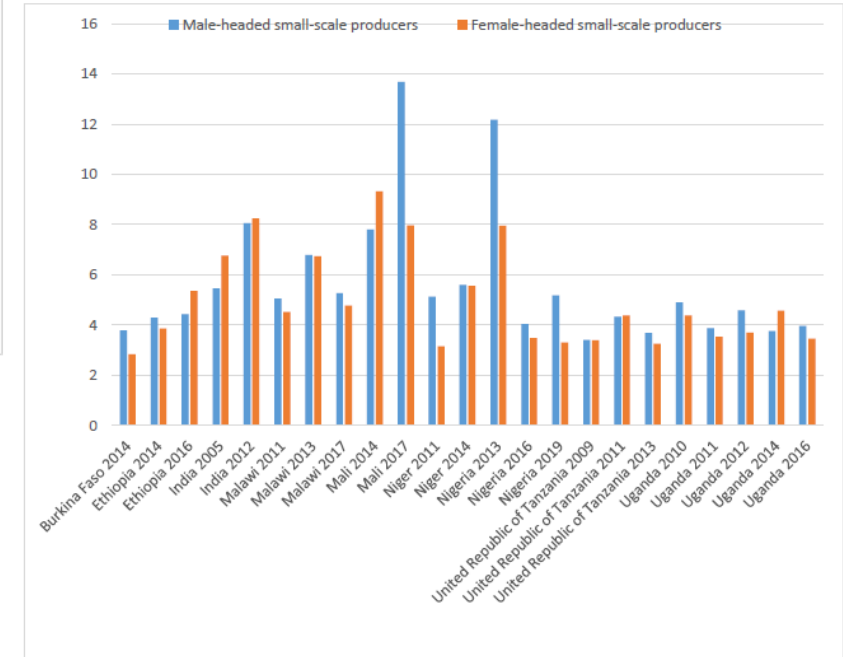
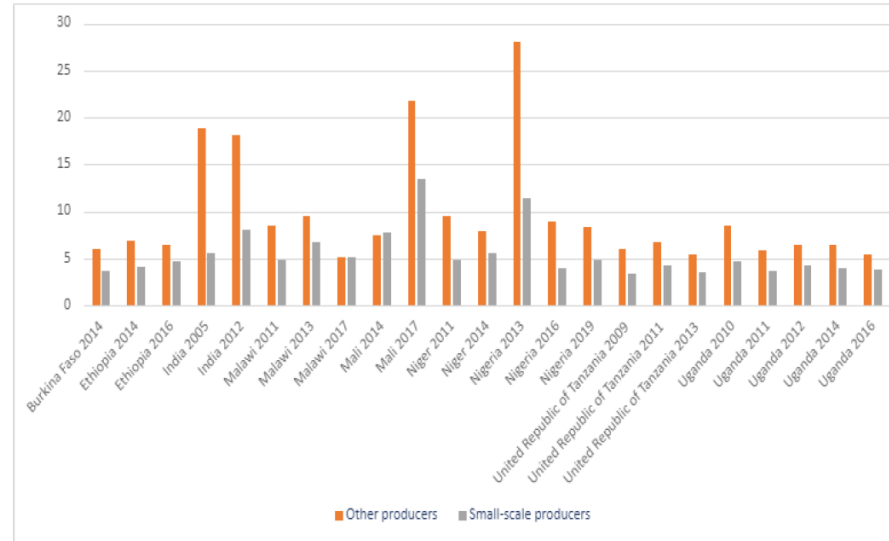


Figure 8: Regional distribution of the population affected by moderate or severe food insecurity, 2020 (millions)





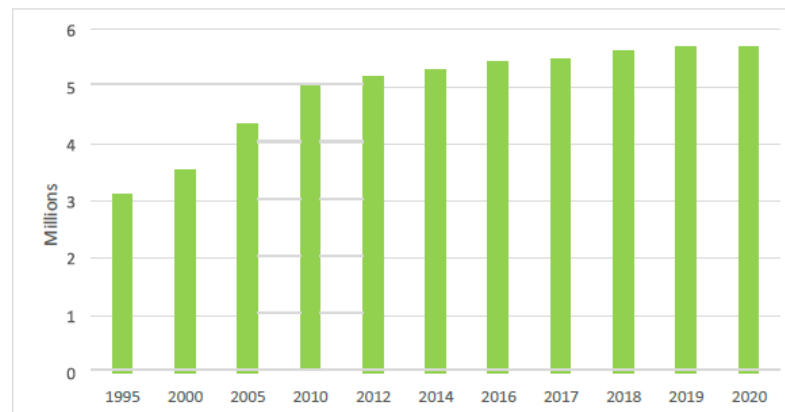
## SDG INDICATOR 2.3.2 Average income of small-scale food producers, by sex and indigenous status



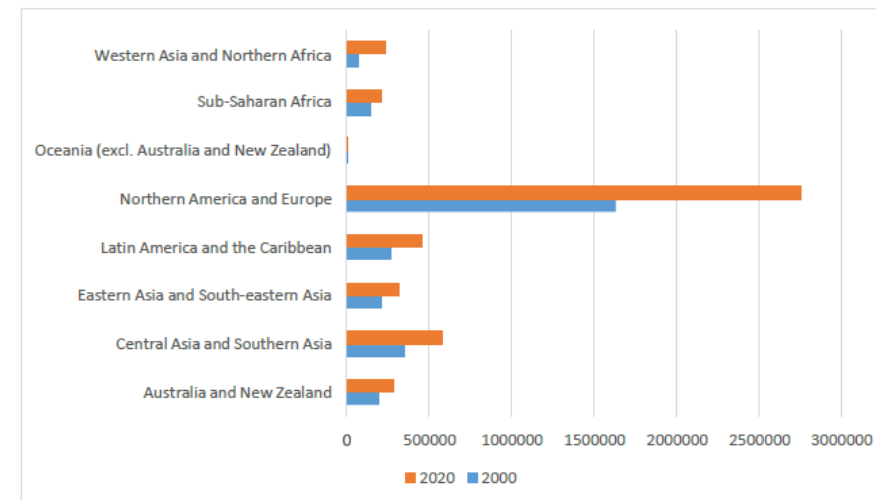


**SDG INDICATOR 2.5.1.A**  
**Number of plant genetic resources for food and agriculture secured in medium-or long-term conservation facilities**

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



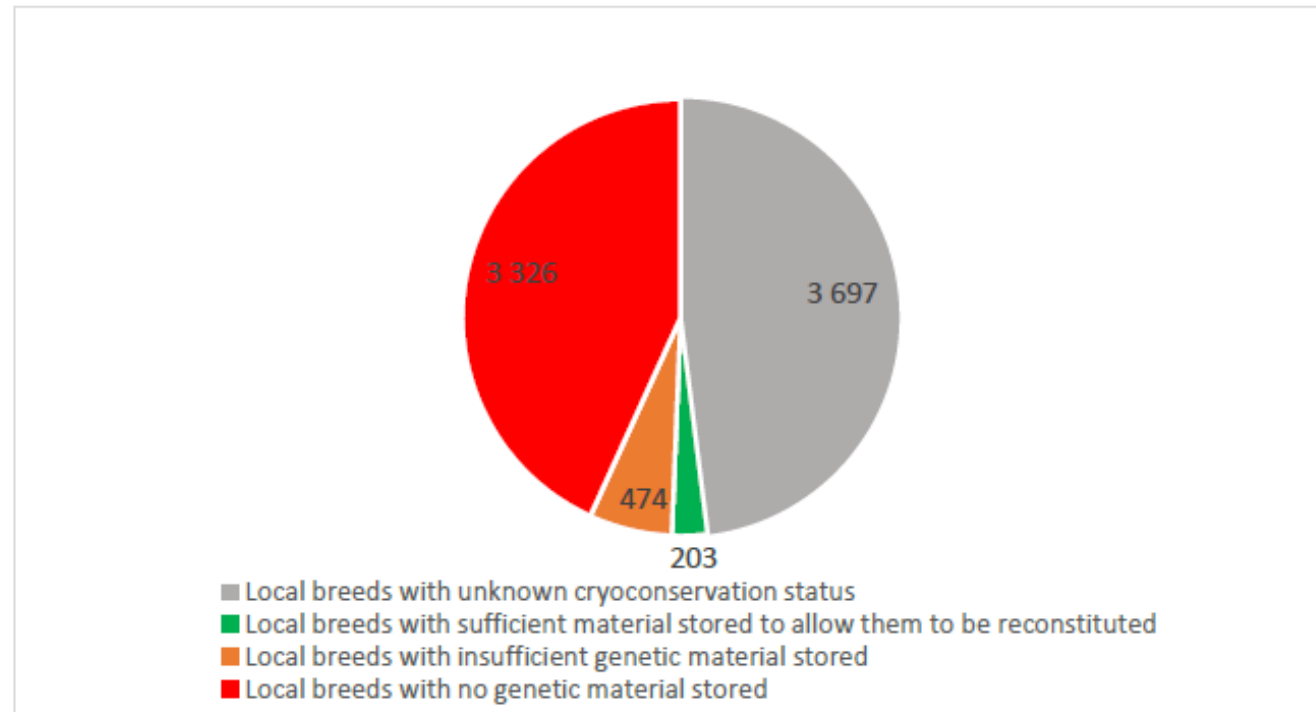
**Figure 17: Plant genetic resources accessions stored ex situ (number)**





**SDG INDICATOR 2.5.1.B**  
Number of animal genetic  
resources for food and  
agriculture secured in  
medium-or long-term  
conservation facilities

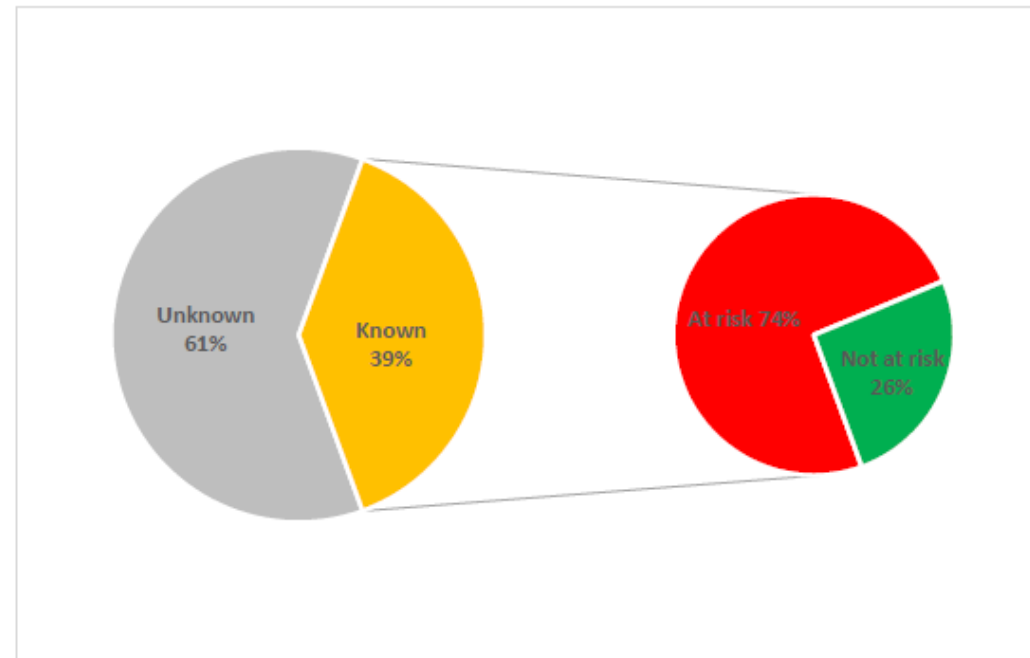
**Figure 19: Proportions of local breeds (including extinct ones) with sufficient, insufficient and no genetic material stored, 2020**





**SDG INDICATOR 2.5.2**  
**Proportion of local breeds**  
**classified as being at risk of**  
**extinction**

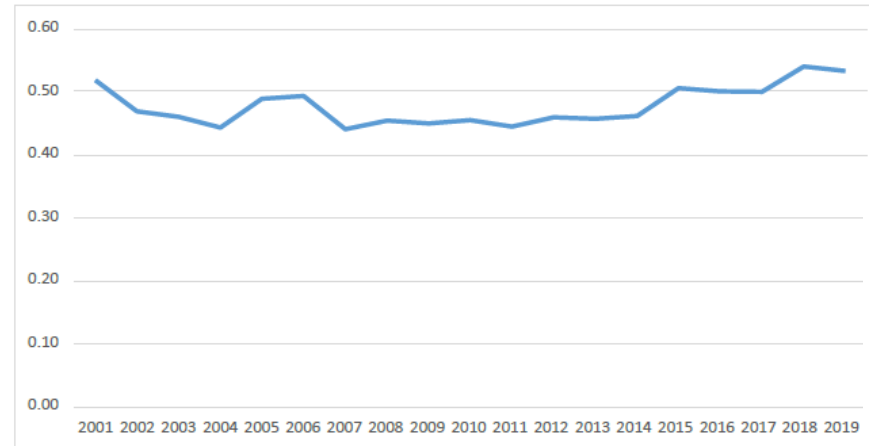
**Figure 20: Proportion of local livestock breeds around the world  
by risk status, 2020**





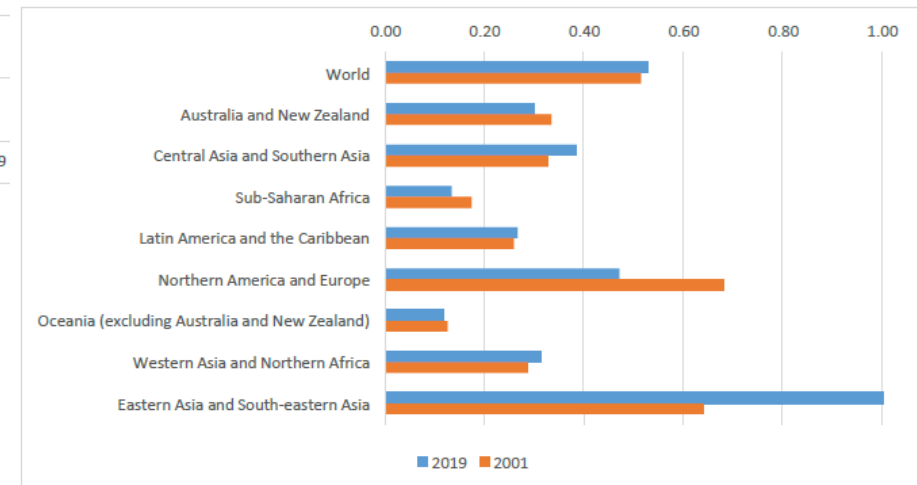
**SDG INDICATOR 2.A.1**  
**Agriculture orientation index for government expenditure**

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



SOURCE: FAO, 2021c.

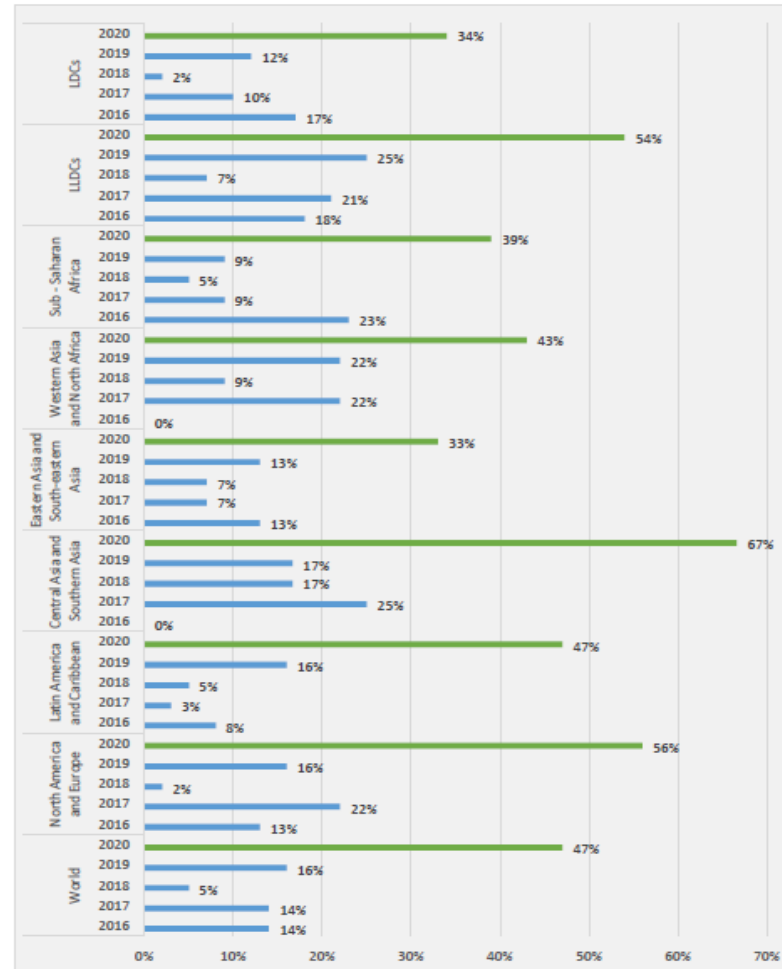
**Figure 23: Agricultural orientation index by SDG sub-regions**





## SDG INDICATOR 2.C.1 Indicator of food price anomalies

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





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Source: FAO. 2021. Tracking progress on food and agriculture-related SDG indicators 2021: A report on the indicators under FAO custodianship. Rome. <https://doi.org/10.4060/cb6872en>







## 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

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

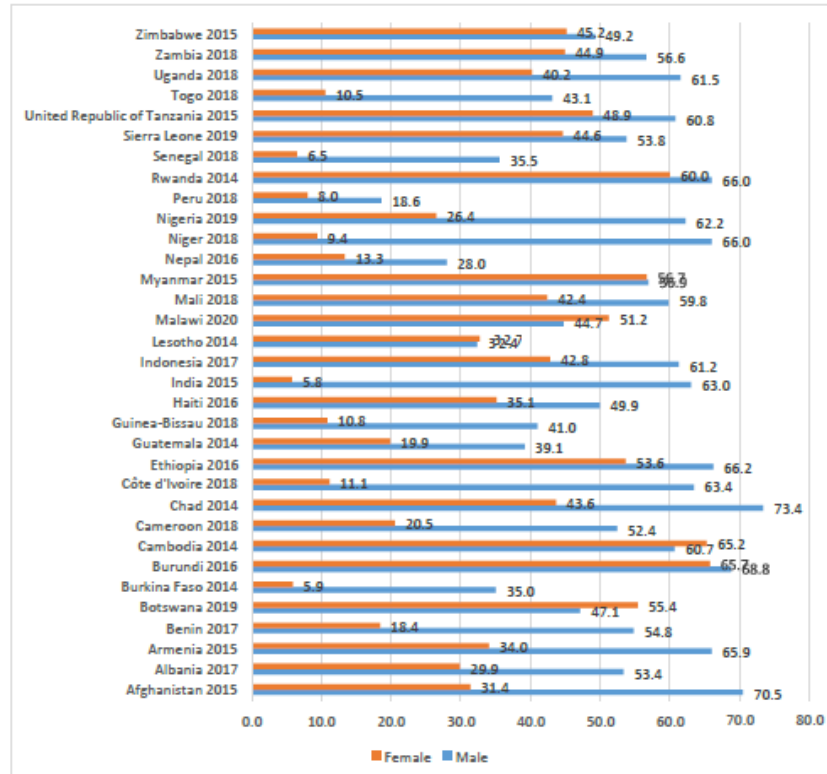
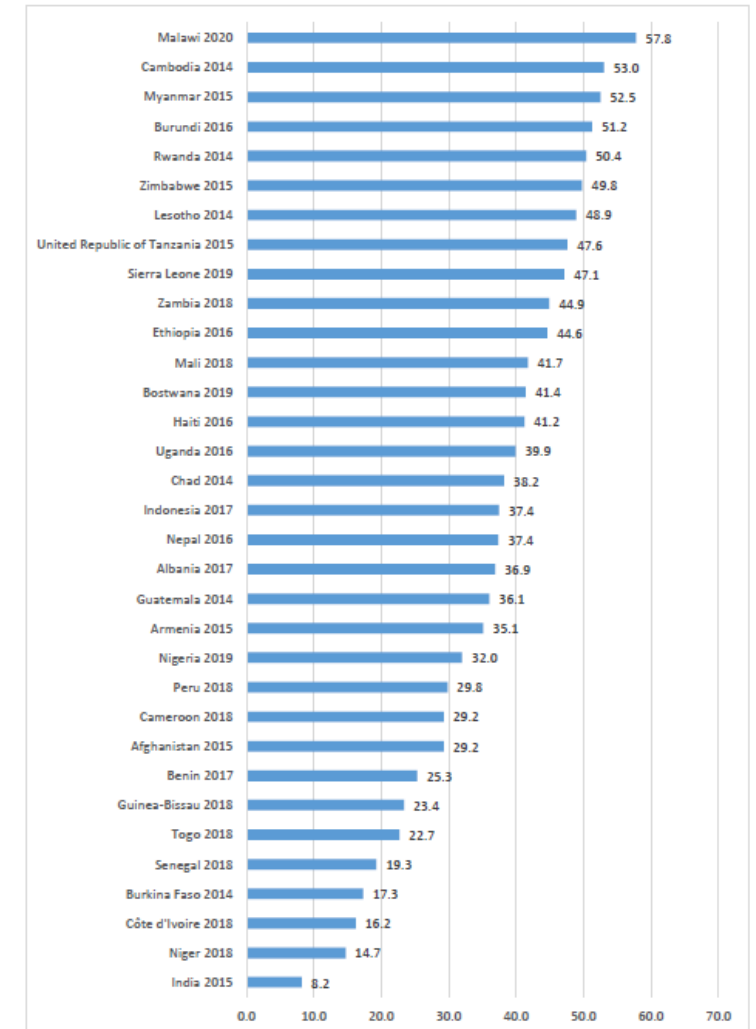


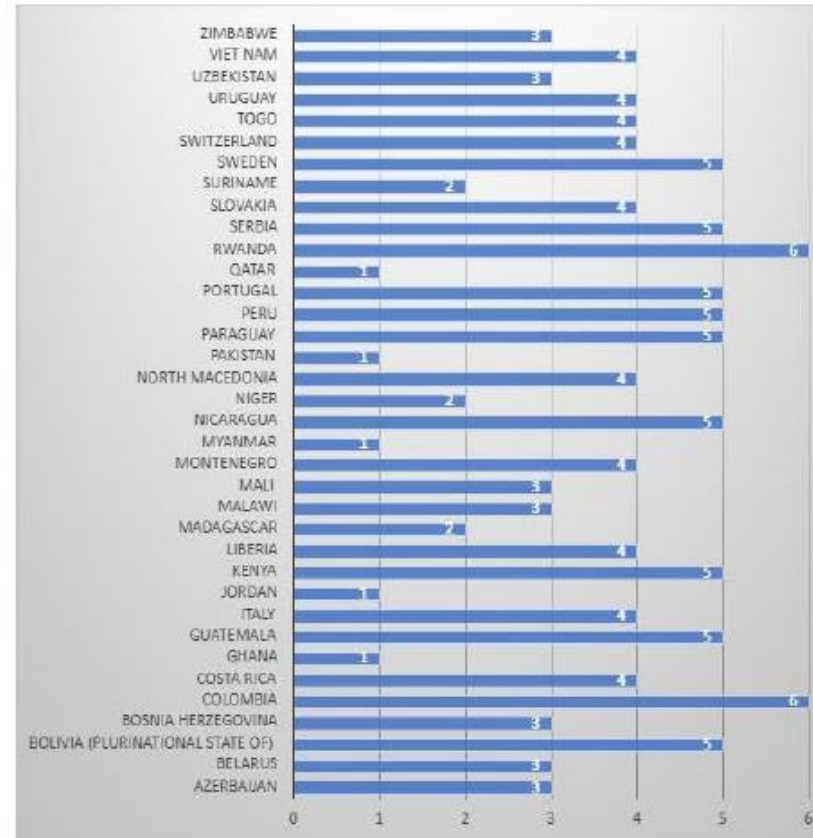
Figure 27: Share of women among owners or right holders





**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**

**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]**





**6** CLEAN WATER  
AND SANITATION





**SDG INDICATOR 6.4.1**  
Change in water-use efficiency over time

Figure 29: Global water use efficiency, 2015–2018 (USD per m<sup>3</sup>)

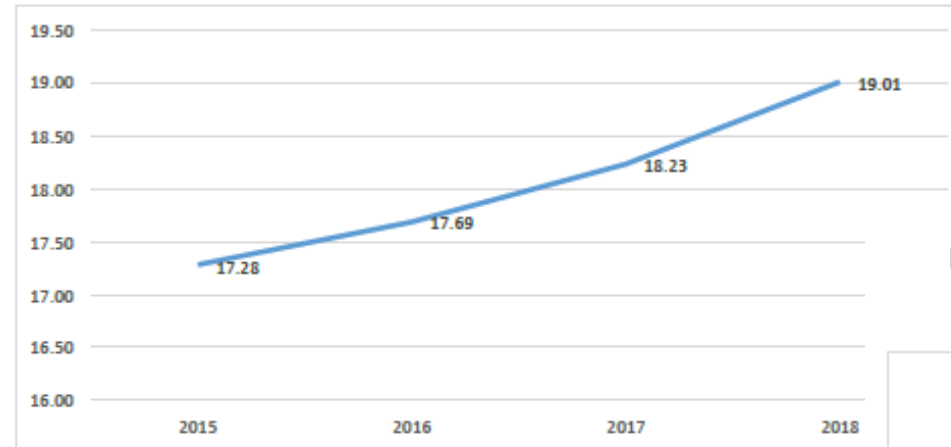
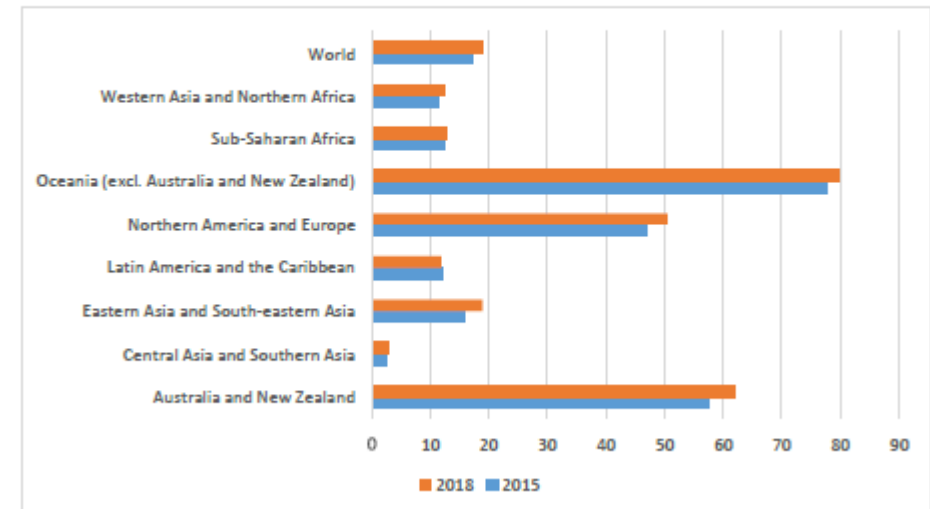


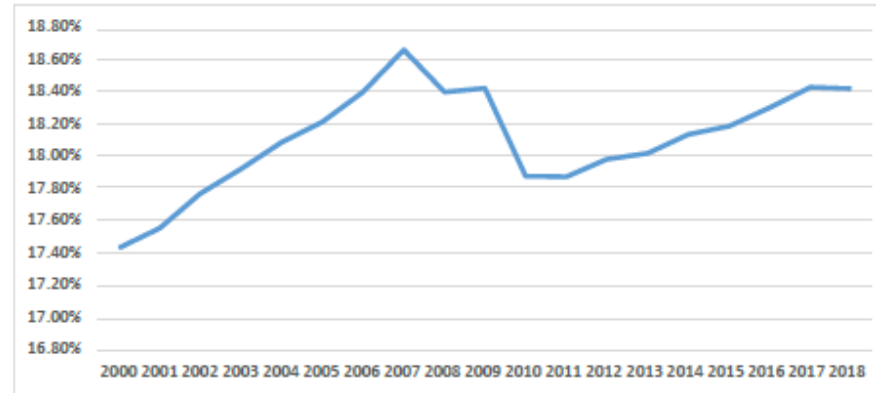
Figure 30: Water use efficiency by region in 2015 and 2018 (USD/m<sup>3</sup>)



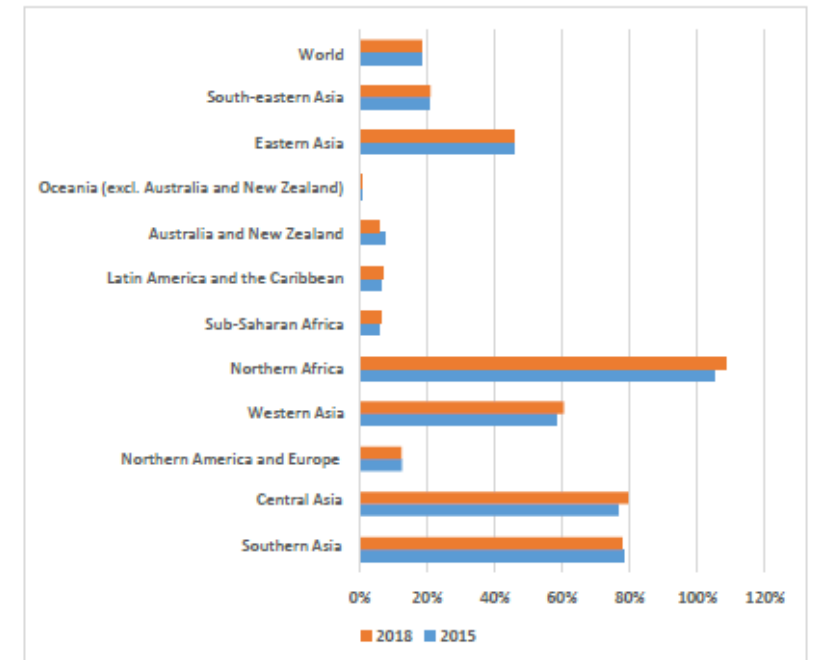


**SDG INDICATOR 6.4.2**  
**Level of water stress: freshwater withdrawal as a proportion of available freshwater resources**

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



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



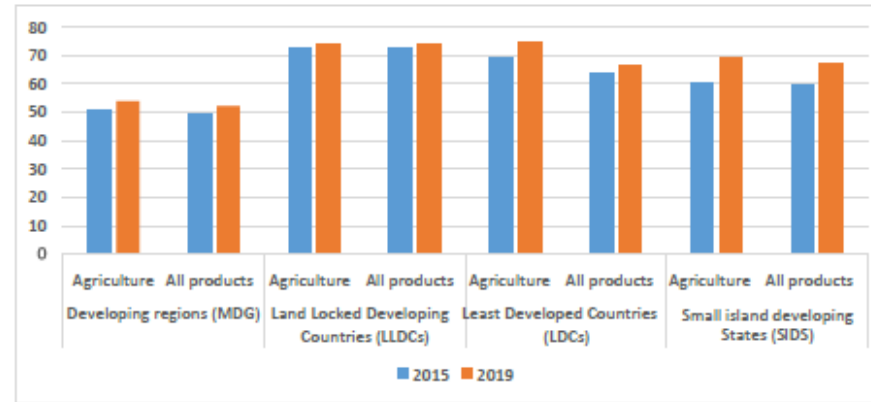




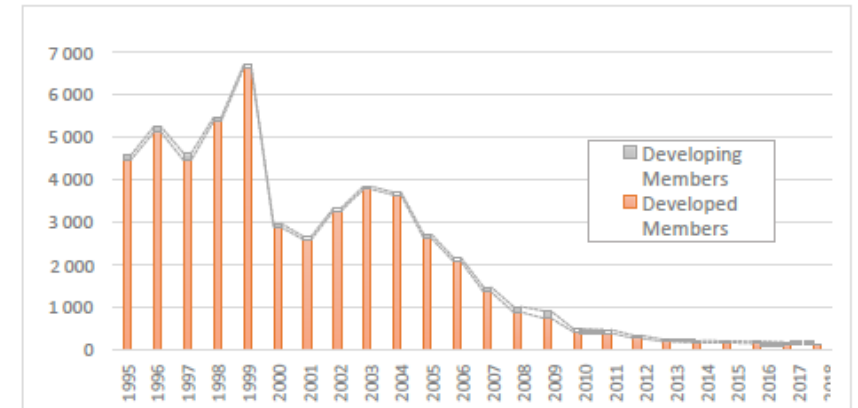


**SDG INDICATOR 10.A.1**  
**Proportion of tariff lines applied to imports from Least Developed Countries (LDCs) and developing countries with zero-tariff**

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

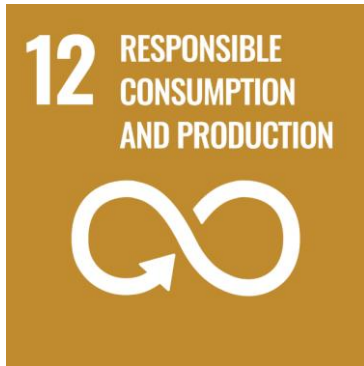


**Figure 35: Export subsidies budgetary outlays (USD million), 1995-2018**



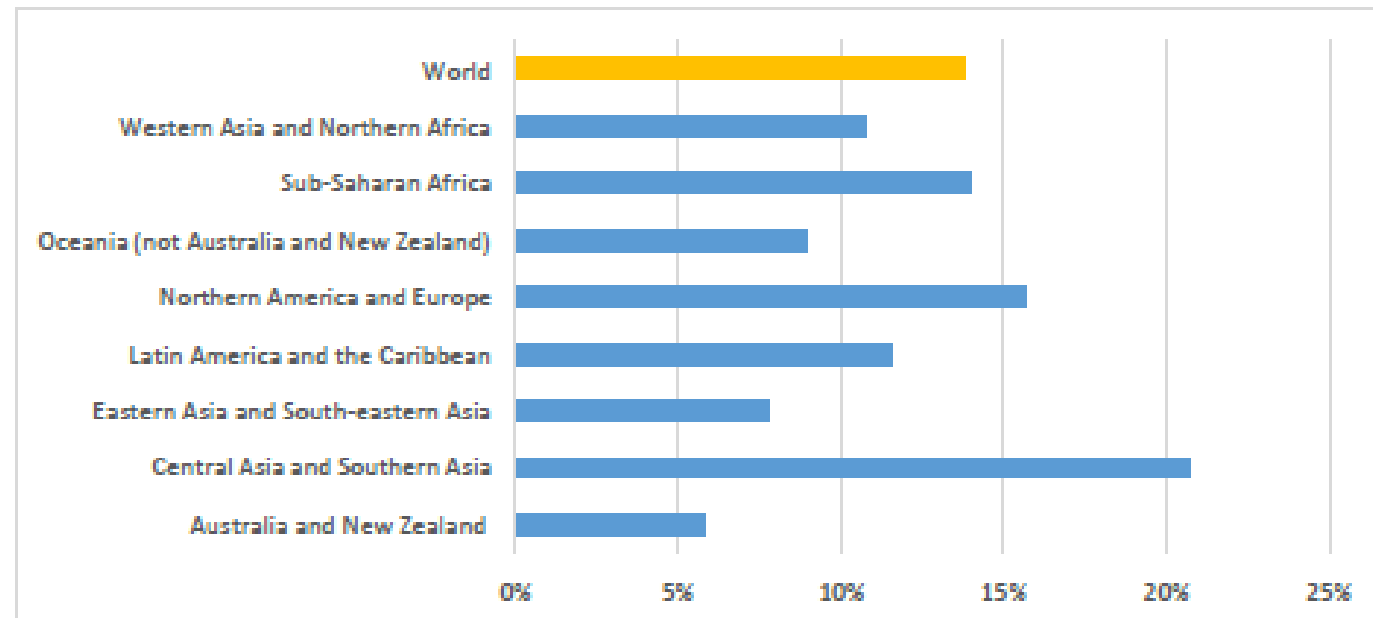


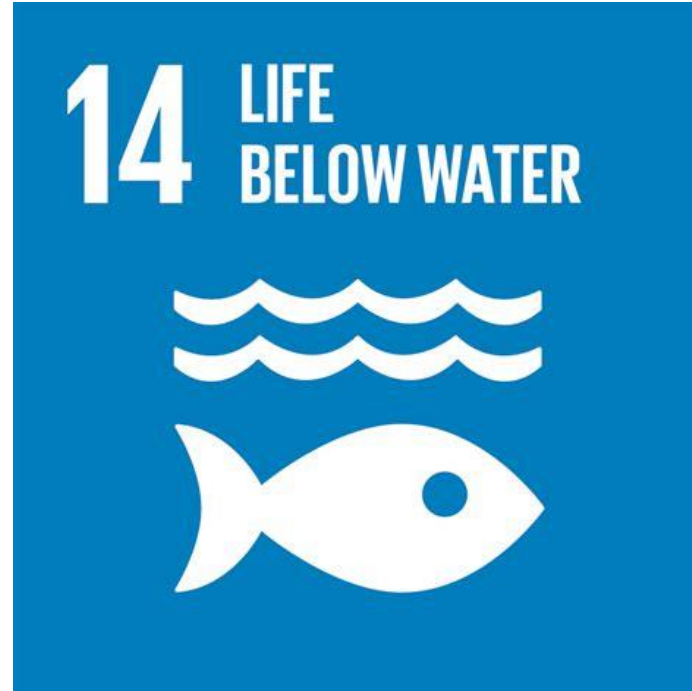




**SDG INDICATOR 12.3.1.A**  
**Food loss index**

**Figure 36: Percentage of food loss by region, 2016**

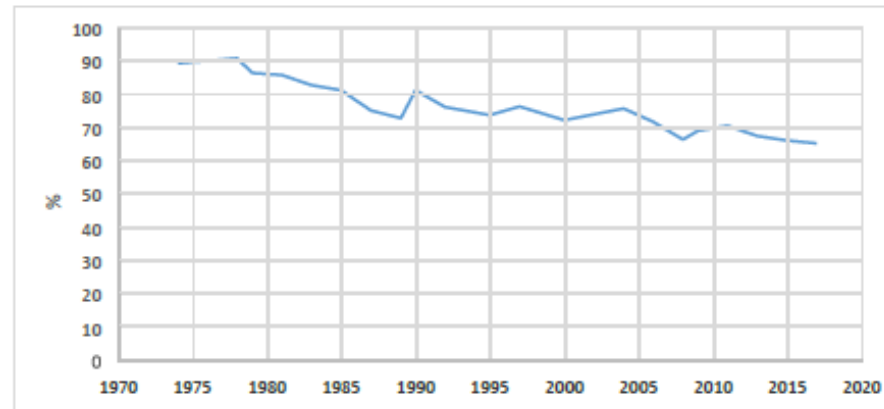




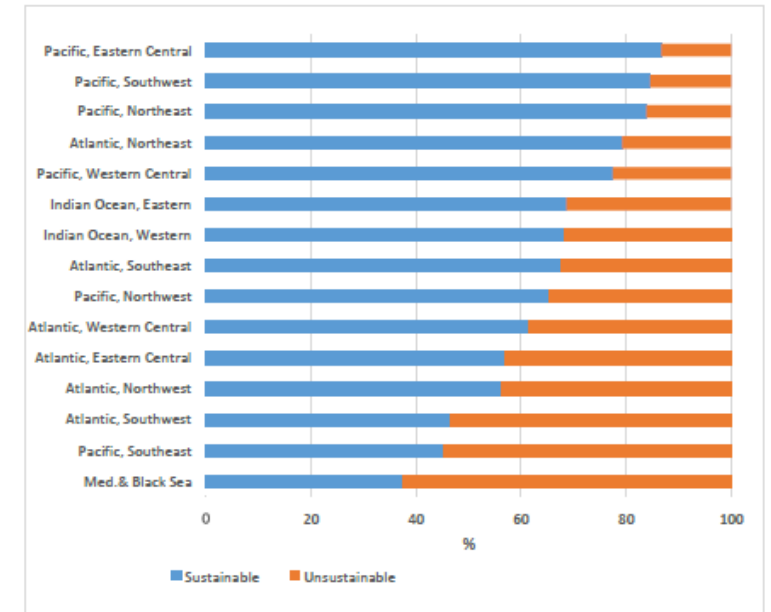


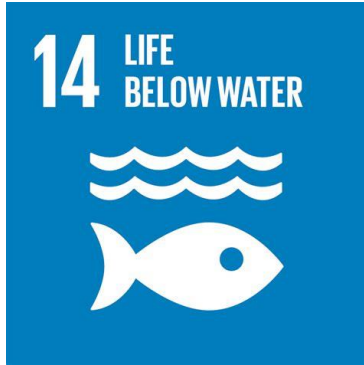
**SDG INDICATOR 14.4.1**  
Proportion of fish stocks within biologically sustainable levels

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



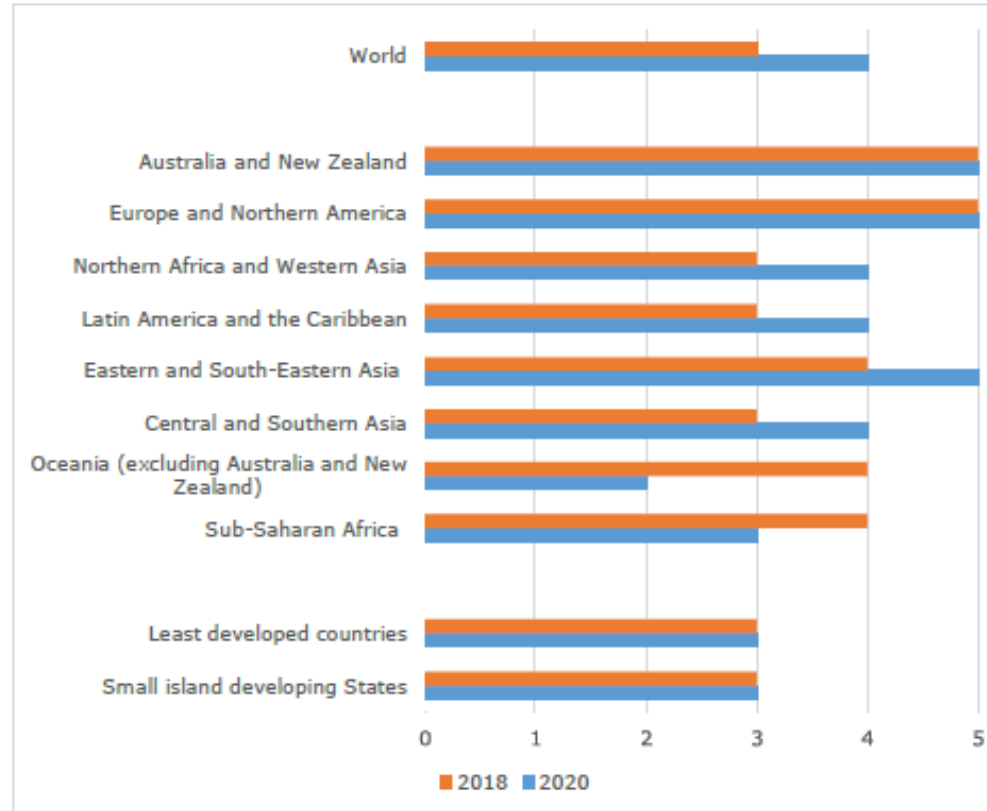
**Figure 38: Fish stock sustainability status across major fishing areas**

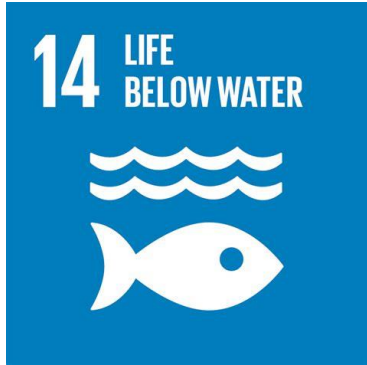




**SDG INDICATOR 14.6.1**  
**Degree of implementation of international instruments aiming to combat Illegal, unreported and unregulated (IUU) fishing**

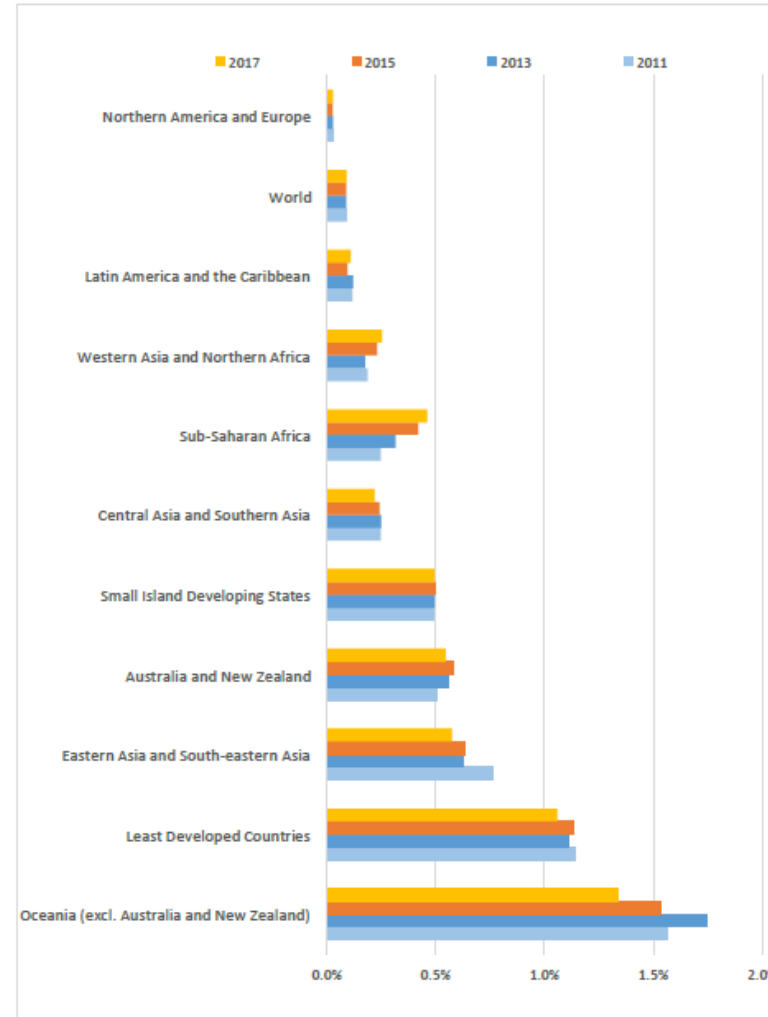
**Figure 41: Progress in degree of implementation of IUU instruments, 2018–2020**





## 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

Figure 44: Sustainable Fisheries as a percentage of GDP





**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**

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



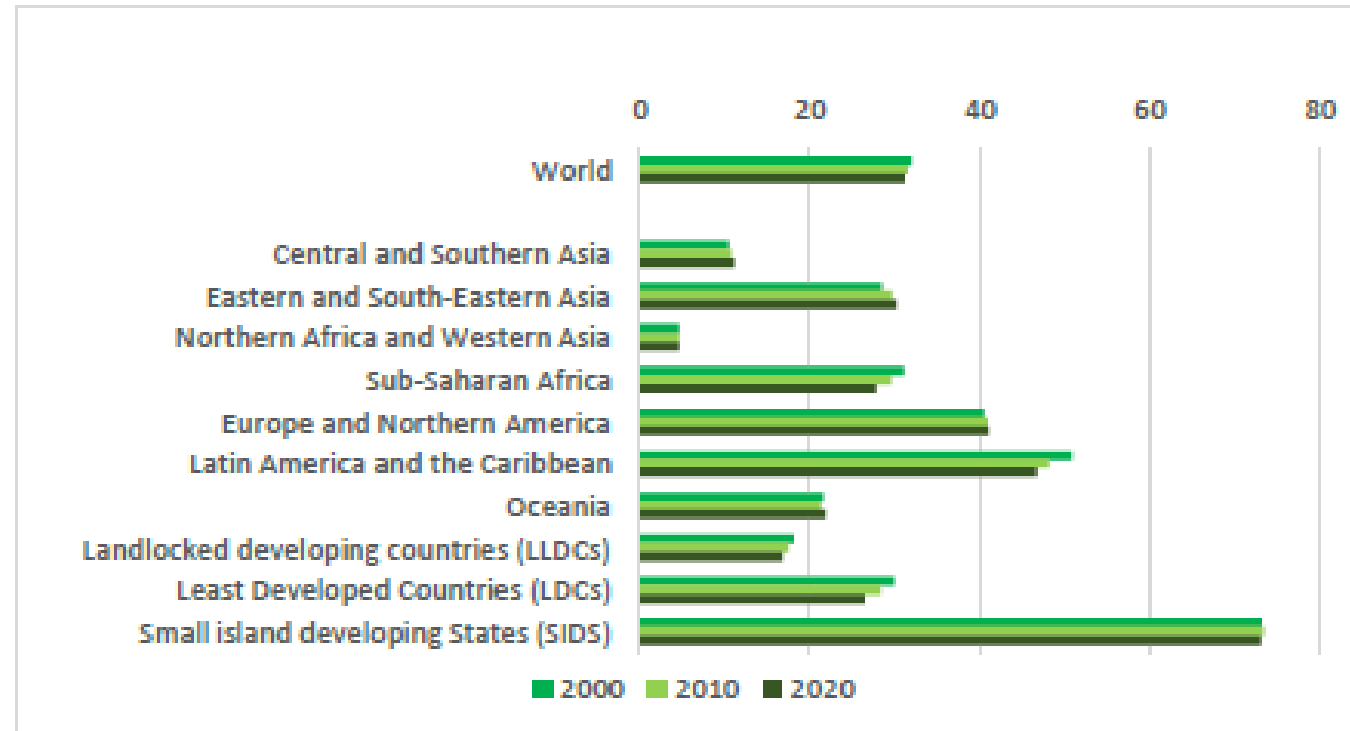






**SDG INDICATOR 15.1.1**  
Forest area as a proportion  
of total land area

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





## SDG INDICATOR 15.2.1 Progress towards sustainable forest management

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	Yellow	Green	Green	Green	Green
Central and Southern Asia	Green	Yellow	Green	Green	Green
Central Asia	Green	Green	Green	Green	Green
Southern Asia	Green	Yellow	Green	Yellow	Green
Eastern and South-Eastern Asia	Green	Green	Green	Green	Green
Eastern Asia	Green	Green	Green	Green	Green
South-Eastern Asia	Red	Yellow	Green	Green	Green
Northern Africa and Western Asia	Red	Green	Green	Green	Green
Northern Africa	Red	Yellow	Green	Green	Red
Western Asia	Green	Green	Green	Green	Green
Sub-Saharan Africa	Red	Yellow	Green	Green	Red
Europe and Northern America	Green	Green	Green	Green	Green
Europe	Green	Green	Green	Yellow	Green
Northern America	Green	Green	Green	Green	Green
Latin America and the Caribbean	Yellow	Green	Green	Green	Green
Oceania	Green	Red	Green	Green	Green
Oceania (exc. Australia and New Zealand)	Yellow	Green	Green	Yellow	Green

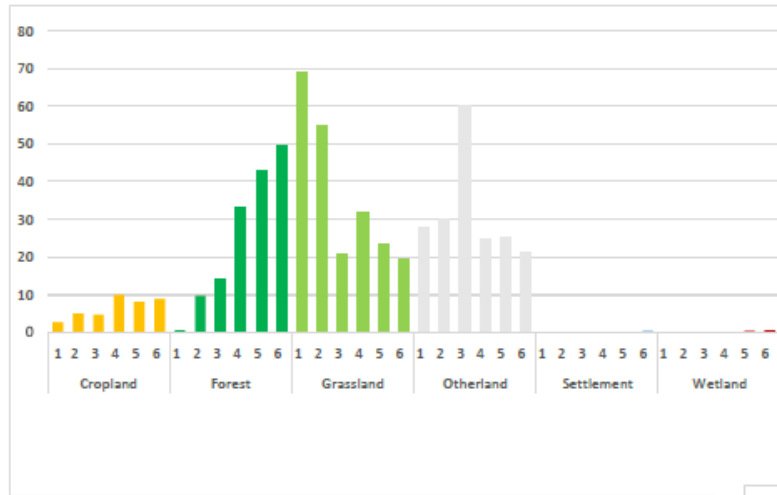
SDG Region	Forest area annual net change rate	Above-ground biomass stock in forest (t/ha)	Proportion of forest area within legally established protected areas	Proportion of forest area under a long-term forest management plan	Forest area certified
World	Yellow	Green	Green	Green	Green
Australia and New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

● Positive change  
 ● No/small change  
 ● Negative change



**SDG INDICATOR 15.4.2  
Mountain Green Cover Index**

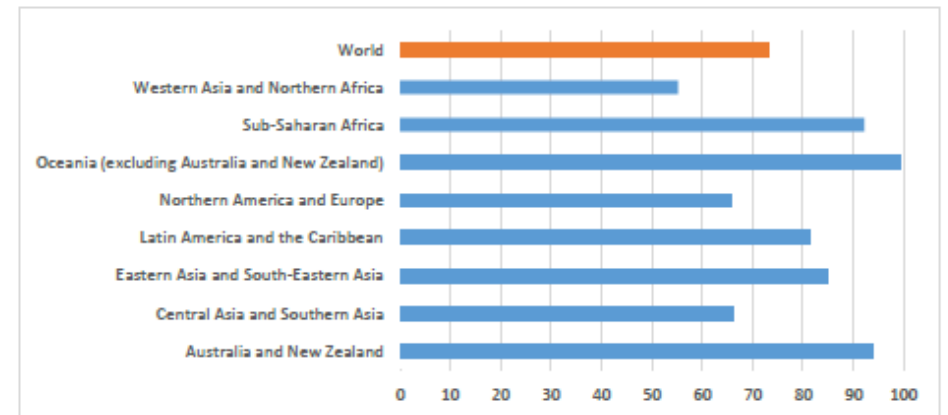
Figure 51: Global mountain cover, disaggregated by elevation and land cover type



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	< 300 m
				LER = 300 m	LER

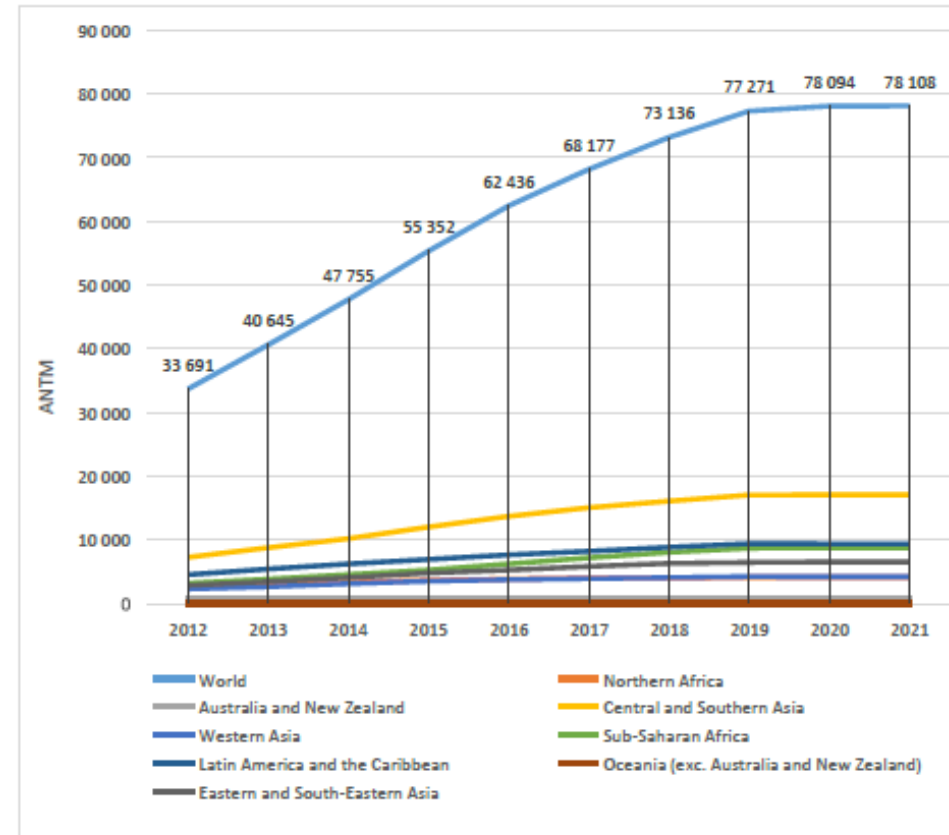
Figure 52: Mountain green cover index by region, 2018





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

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





1. FAO (2021). *Guidance on core indicators for agrifood systems. Measuring the private sector's contribution to the Sustainable Development Goals*. Food and Agriculture Organization of the United Nations, Rome.
2. FAO (2021). *Tracking progress on food and agriculture-related SDG indicators 2021. A report on the indicators under FAO custodianship*. Food and Agriculture Organization of the United Nations, Rome.

## Presenter' bio

### Giordano Stella

- MSc in Sustainable Agriculture at the University of Perugia (Italy) in 2013
- PhD in Energy and sustainable development in 2017
- Temporary research assistant at University of Perugia
- My researches are focused on agro-economics, Food Sovereignty, Alternative Food Networks, organic agriculture and agroecology

