Food and Agriculture Organization of the United Nations

FAO and the SDGs

Accelerating transformation through the four betters



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Foreword

The 2030 Agenda for Sustainable Development remains the world's collective roadmap for development, prosperity and sustainability. At its core lies a truth we can no longer afford to overlook: **agrifood systems are central to the achievement of all 17 Sustainable Development Goals (SDGs)**. From ending poverty and hunger to advancing health, education, equity and climate action – transforming agrifood systems is both a necessity and an opportunity.

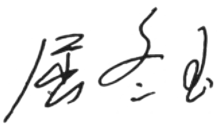
In recognition of this, the FAO Strategic Framework 2022-2031 is based on the SDGs. Also, the FAO Office of Sustainable Development Goals was established so as to systematically embed the SDGs into all dimensions of the Organization's work. The Office has since provided the technical leadership and coherence needed to **strengthen the positioning of agrifood systems transformation at the centre of global and national policy agendas**.

This publication, *FAO and the SDGs – Accelerating transformation through the four betters*, represents a key milestone in that journey. It offers a goal-by-goal overview of how **FAO's Strategic Framework 2022–2031 supports countries in advancing the 2030 Agenda through the transformation to more efficient, inclusive, resilient and sustainable agrifood systems for *better production*, *better nutrition*, a *better environment* and a *better life*, leaving no one behind.** These four betters are not abstract ideals; they are actionable pathways grounded in science, aligned with global commitments and responsive to country needs.

The SDG briefs presented herein consolidate FAO's policy recommendations, technical solutions and country-level support. They reflect the Organization's unique role as a **custodian of 22 SDG indicators**, its normative mandate and its capacity to deliver integrated, evidence-based solutions. The publication also underscores the use of FAO's cross-cutting/cross-sectional "accelerators", namely technology, innovation, data and complements (governance, human capital and institutions), to help countries navigate complex trade-offs and accelerate transformation at scale.

We stand at a decisive moment; governments and partners must act with renewed urgency and shared purpose. This publication is both a tool and a testament: **a tool for decision-makers to leverage FAO's support more strategically, and a testament to the power of coordinated action**.

Together, let us harness the full potential of agrifood systems to deliver on the promise of the SDGs – for people, for the planet, and for prosperity.



Qu Dongyu
Director-General,
Food and Agriculture Organization of the United Nations

Abbreviations

AFF: agriculture, forestry and fishing

AMR: antimicrobial resistance

ATIO: Agrifood Systems Technologies and Innovations Outlook

BEFS: Bioenergy and Food Security approach

CFS: Committee on World Food Security

Gt CO_2eq: billion tonnes of carbon dioxide equivalent

FAO: Food and Agriculture Organization of the United Nations

FAW: fall armyworm

FFS: Farmer Field Schools

GBEP: Global Bioenergy Partnership

GDP: gross domestic product

GHG: greenhouse gas

IFAD: International Fund for Agricultural Development

IFIs: International Financial Institutions

IMI-SDG6: Integrated Monitoring Initiative for Sustainable Development Goal 6

IPCC: Intergovernmental Panel on Climate Change

IPM: integrated pest management

IPPC: Internation Plant Protection Convention

IUU: illegal, unreported and unregulated (fishing)

JFFLS: Junior Farmer Field and Life Schools

LDC: Least Developed Country

MSME: micro-, small- and medium-sized enterprise

NAP: National Adaptation Plan

NDC: nationally determined contribution

PPA: Programme Priority Area

PSMA: Port State Measures Agreement

R&D: research and development

RuLIS: Rural Livelihoods Information System

SDG: Sustainable Development Goal

SEPAL: System for Earth Observation Data Access, Processing and Analysis for Land Monitoring

SME: small- and medium-sized enterprise

SOFI: The State of Food Security and Nutrition

SWAF: the status of women in agrifood systems

UN: United Nations

UNEP: United Nations Environment Programme

UNICEF: United Nations Children's Fund

USD: United States Dollar

WASAG: The Global Framework on Water Scarcity in Agriculture

WHO: World Health Organization

WOAH: World Organisation for Animal Health

WTO: World Trade Organization

Introduction

The 2030 Agenda recognizes that transforming agrifood systems is essential to achieving sustainable development. Food security and nutrition are deeply connected to poverty reduction, climate action and biodiversity protection, as well as with the broader goals of good health, decent work, gender equality community resilience and the sustainable use of resources. The way food is produced, distributed and consumed shapes them all.

The *Strategic Framework 2022–2031* of the Food and Agriculture Organization of the United Nations (FAO) positions the Organization to support Members in transforming agrifood systems through the ***four betters - better production, better nutrition, a better environment* and a *better life*, leaving no one behind**.

The *four betters*: A framework for SDG acceleration

The four betters capture the economic, social and environmental dimensions of agrifood systems and articulate the long-term, aspirational outcomes that guide FAO's contribution across the breadth of the 2030 Agenda, providing a clear structure for the Organization's support to countries in advancing the Sustainable Development Goals (SDGs).

The SDGs are designed as an integrated and indivisible framework that balances the economic, social and environmental dimensions of sustainable development; progress in one area is intended to reinforce progress in others. In this spirit, *FAO's Strategic Framework 2022–2031* positions SDG 1 (No Poverty), SDG 2 (Zero Hunger) and SDG 10 (Reduce Inequalities) at the centre of its contribution to the 2030 Agenda, tackling poverty, hunger and inequality, with the other Goals supporting the *four betters*.



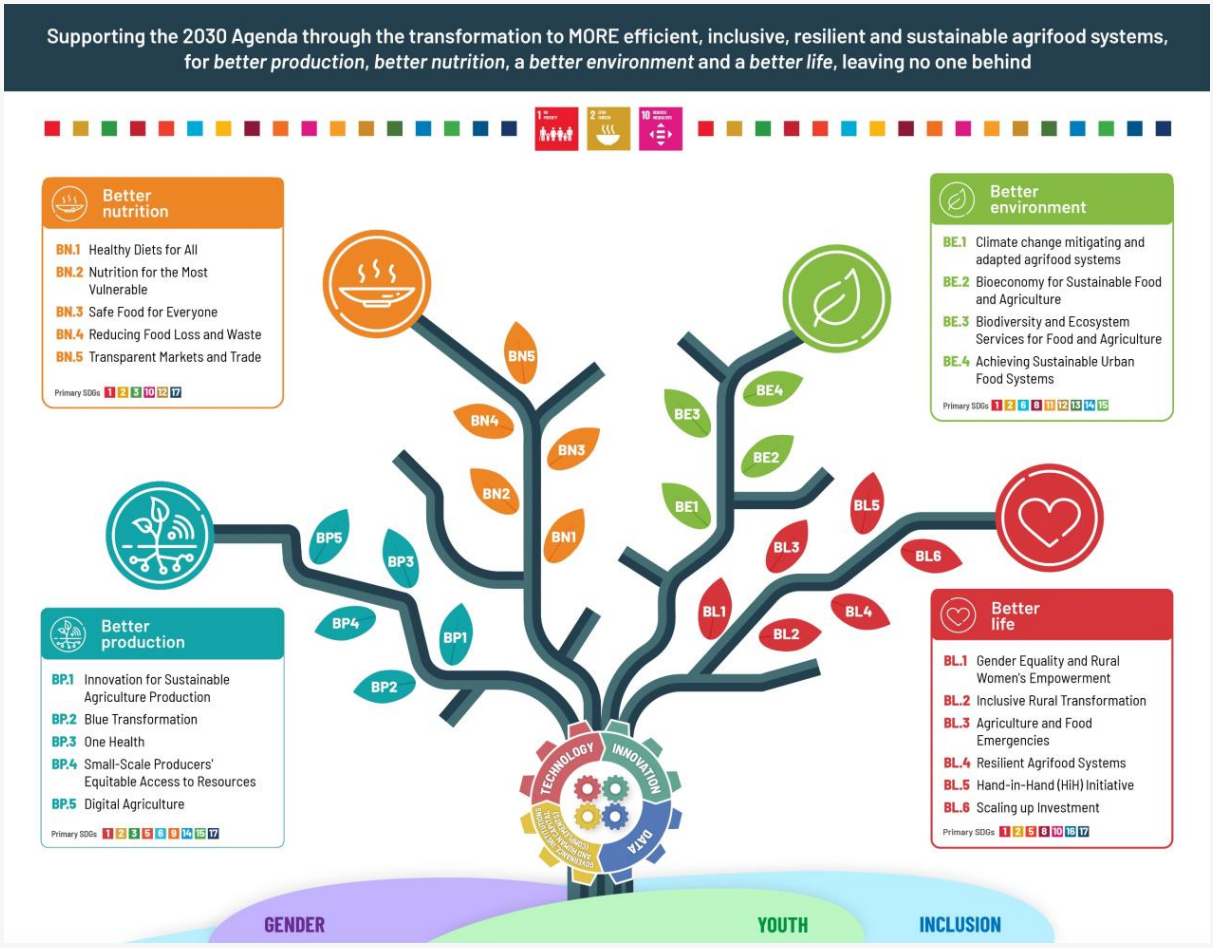
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FAO's results framework operationalizes these interlinkages by organizing delivery through 20 Programme Priority Areas (PPAs), which are linked to specific SDGs and SDG targets, that address critical gaps and aim to create the enabling conditions needed for countries to accelerate progress (Figure 1). In practice, this means many FAO interventions contribute to several SDGs at once, reflecting the SDGs' interconnected nature and the integrated approach needed to advance the Agenda as a whole.

- ***Better production*** advances SDGs 1, 2, 3, 5, 6, 9, 14, 15 and 17 by promoting sustainable, resilient and innovative agrifood systems. This includes supporting countries to adopt more efficient and climate-resilient production practices, expand sustainable aquaculture and fisheries through the Blue Transformation, strengthen One Health capacities for managing biological and ecosystem risks, improve equitable access to land, water, services and markets for small-scale producers, and accelerate the uptake of digital tools and data services in rural areas.

- ***Better nutrition*** contributes to SDGs 1, 2, 3, 10, 12 and 17 by putting healthy diets, food safety and improved nutrition at the centre of agrifood policies. FAO supports countries in shaping food environments that make nutritious foods accessible and affordable, in strengthening targeted programmes for people most at risk of food insecurity and malnutrition, in building robust food-control systems aligned with Codex standards, and in advancing national efforts to reduce food loss and waste and improve market transparency.

Figure 1. FAO strategic results framework



Source: FAO. 2025. *Medium Term Plan 2026-29 and Programme of Work and Budget 2026-27*. Rome. https://openknowledge.fao.org/handle/20.500.14283/nq860en

- ***Better environment*** supports SDGs 1, 2, 6, 8, 11, 12, 13, 14 and 15 by helping countries address climate change, safeguard biodiversity and restore ecosystems. FAO works with governments to integrate climate-resilient and low-emission practices into agrifood systems, develop sustainable and circular bioeconomy solutions, conserve and restore terrestrial, freshwater and marine ecosystems, and strengthen urban agrifood governance to reduce environmental pressures while improving access to food.

- ***Better life*** advances SDGs 1, 2, 5, 8, 10, 16 and 17 by reducing inequalities and strengthening the resilience and prosperity of rural people. FAO promotes gender-transformative policies and equal access to resources for rural women, supports inclusive rural development and decent employment, strengthens countries' capacities to anticipate and respond to shocks, enhances risk management across agrifood systems, scales up territorial development through the Hand-in-Hand Initiative, and improves public and private investment planning.

To maximise the impact of its work and help countries manage complex trade-offs, FAO applies **four accelerators** across all its programme interventions. These accelerators – **technology, innovation, data** and **complements** – act as multipliers to speed up SDG progress. Technology and innovation are helping countries adopt new solutions in agriculture and resource management, from digital tools to improved practices. Data acts as a powerful driver by guiding evidence-based policymaking and tracking progress. The final accelerator, complements, focuses on strengthening governance, human capital and institutions – the enabling conditions that ensure technical solutions take root and last. By mainstreaming these accelerators into every initiative, FAO ensures that its support to countries is transformative and systemic: for example, an agricultural programme is paired with digital innovations and robust data monitoring, and, coupled with institutional capacity-building, yields faster and more scalable results.

In addition, FAO mainstreams **three cross-cutting themes** – gender equality, youth engagement and inclusion – in every programme, reflecting its commitment to equity and the UN principle of **leaving no one behind**.

Together, the *four betters* and their PPAs, the accelerators, and the cross-cutting themes form a cohesive systems-oriented delivery model that links global norms and knowledge to country action, with high-level policy advice down to community-level projects all aligned under one framework (Figure 3). This model not only enhances internal coherence within FAO but also makes it easier for external partners and countries to collaborate with FAO to catalyse SDG acceleration, helping to maximize synergies and manage trade-offs across SDGs.

Figure 2. SDG indicators of which FAO is a custodian and contributing agency



Source: Author's own elaboration

Figure 3. The contribution of the four betters to the SDGs



Source and further details available at: FAO. 2025. *Medium Term Plan 2026-29 and Programme of Work and Budget 2026-27.* Annex 3. Rome. *https://openknowledge.fao.org/handle/20.500.14283/nq860en*

Leading by example – Transforming FAO from within

As it champions transformation externally, FAO is also taking action internally to align its institutional practices with the sustainable development values it promotes. The Organization has embarked on its own reforms to become greener, more inclusive and more flexible, recognizing that credibility and effectiveness start from within. On environmental sustainability, FAO has committed to climate-neutral operations and has implemented a Corporate Environmental Responsibility Strategy to reduce its carbon footprint, energy use and waste at headquarters and field offices. From installing solar panels and cutting travel emissions, to green procurement and recycling programmes, FAO is integrating sustainability into daily operations and contributing to the UN-wide "Greening the Blue" initiative.



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At the same time, FAO is fostering a diverse and inclusive workplace. It has adopted the UN Disability Inclusion Strategy and other measures to ensure accessibility and opportunities for persons with disabilities in its workforce and programming. In 2023, FAO's Members approved the establishment of a dedicated Office for Youth and Women – the first of its kind in the UN system – to mainstream the perspectives of young people and women across all of FAO's work. This new office provides a structural home for the FAO Youth Committee and Women's Committee, amplifying the voice of youth and female staff and catalysing initiatives that promote gender equality and youth empowerment both internally and in FAO's country programmes.

These internal transformations (greening operations, embracing inclusion and reforming organizational structures) are enabling FAO to become a model of the change it advocates.

An institution ready to deliver the 2030 Agenda

To summarise, FAO's institutional and functional response to the SDGs is characterized by strategic clarity, functional excellence and a systems approach to delivery. By uniting its core functions under the Strategic Framework's architecture of *four betters*, PPAs and accelerators, FAO has created a powerful engine for SDG acceleration – one that can drive integrated solutions at scale, from local innovation to global policy.

As the 2030 deadline approaches, accelerating progress is imperative. FAO will continue to champion the *four betters* as an interconnected pathway towards the SDGs, mobilizing partnerships, innovation and investment to turn knowledge into impact. Through its professional expertise, country presence, convening power and renewed institutional practices, the Organization stands as an indispensable actor to help countries transition towards a more sustainable, equitable and food-secure world. FAO's unity of purpose and action offers a compelling foundation for hope: that global transformation is possible and that, together, the international community can still deliver on the promise of the 2030 Agenda.

FAO and the SDGs – Accelerating transformation through the *four betters*

This publication, *FAO and the SDGs – Accelerating Transformation through the Four Betters*, provides an accessible, Goal-by-Goal perspective on how agrifood systems transformation contributes to the achievement of each of the 17 SDGs and how FAO supports Members in doing so. It complements FAO's **Programme Implementation Reports, SDG custodianship reports** and other mandated updates, offering a concise entry point for audiences seeking to understand FAO's work.

At its core, the publication presents **17 stand-alone SDG briefs**, one for each Goal. These briefs provide a non-extensive overview of FAO action in relation to the 17 SDGs and consolidate FAO key messages and recommendations for advancing progress through agrifood systems transformation. They aim to enhance understanding of the relevance of each SDG for agrifood systems transformation, the ways in which agrifood systems influence progress across the 2030 Agenda and beyond, and FAO's contribution through data, policy support, normative guidance, innovation, capacity development, partnerships and country-level action.

Each brief includes:

- **Context and headline messages**, outlining why the Goal is relevant to agrifood systems and how FAO supports countries in addressing it.
- **FAO focus boxes**, featuring selected initiatives, global mechanisms, normative guidance, networks or tools that exemplify FAO's contribution to the Goal.
- **Data highlights**, using FAOSTAT and FAO flagship reports to present up-to-date evidence, key indicators and global and/or regional trends.
- **Key challenges**, identifying the main structural barriers slowing progress –such as conflict, extreme weather events, market instability, environmental degradation, weak governance and financing gaps.
- **Way forward**, structured around policy solutions, institutional reforms, innovation, data, partnerships and capacity development, showing how countries can accelerate progress through FAO-supported approaches.
- **A Learn More section**, directing readers to relevant FAO knowledge products.

Across the briefs, recurring themes reflect the accelerators identified in the Strategic Framework — **technology, innovation, data, governance, human capital and institutions' complements** – as well as the Organization's commitment to **gender equality, youth empowerment, inclusivity and leaving no one behind**. While each brief focuses on a single Goal, collectively they illustrate the interconnected nature of the 2030 Agenda, showing how progress in one domain reinforces outcomes in others. For example, reducing inequalities strengthens resilience, climate action advances food security, responsible consumption reduces pressure on ecosystems, and safe, equitable agrifood systems support healthier populations and more peaceful societies.

Taken as a whole, the SDG briefs offer a consolidated, technically grounded picture of how FAO supports Members in advancing the 2030 Agenda through agrifood systems transformation. They highlight the Organization's data leadership, normative mandate, country-level engagement and convening role – while illustrating, in a clear and accessible format how FAO's work contributes to each of the 17 SDGs.

Food and Agriculture Organization of the United Nations



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FAO and SDG 1: End poverty in all its forms everywhere

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Eradicating poverty for all people, everywhere, is a global commitment under Sustainable Development Goal (SDG) 1. This reflects the fundamental principle that **poverty should be neither tolerated nor accepted** in today's world, while also recognizing that, as a global community, we have the resources needed to achieve this goal.

Households living in extreme poverty are more likely to be based in rural areas and engage in agricultural activities.[1]

In 2019, the Food and Agriculture Organization of the United Nations (FAO) launched the *Framework on Rural Extreme Poverty: Towards reaching Target 1.1 of the Sustainable Development Goals*. Under this framework, FAO committed to undertake and reinforce explicit actions within its mandate targeting the extreme poor, specifically:

Ensuring food security and nutrition, including making the interconnections between poverty and hunger visible and explicit, in both urban areas and across the agrifood system, and promoting the realization of the right to adequate food.

Promoting economic inclusion by enhancing agrifood systems' contribution to reducing extreme poverty through sustainable and equitable economic growth and living incomes.

Fostering environmental sustainability and resilience for rural livelihoods, recognizing their interdependence with the environment, and integrating poverty reduction into climate action, including ensuring a just transition towards a greener economy and healthier diets.

Preventing and building resilience against risks and shocks, and emphasizing prevention, preparedness and appropriate response to the risks that those in extreme poverty face through rights-based approaches and the application of innovation.

FAO's analytical capabilities and focus on poverty reduction have been further strengthened by the establishment, in 2019, of the **Technical Network on Poverty Analysis (THINK-PA)**, a vibrant community of practice around poverty analysis.

Additionally, since 2020, the Organization has been charged with preparing the annual **Report of the United Nations Secretary-General on Eradicating rural poverty to implement the 2030 Agenda for Sustainable Development**, which assesses progress and makes policy recommendations to keep effort on track.

Eradicating poverty is a core priority of the *FAO Strategic Framework 2022–2031*, which advances SDG 1 through Programme Priority Areas, including *Small-scale producers' equitable access to resources*, *Inclusive rural transformation* and *Scaling up investment*, each supports countries reduce rural poverty and strengthen resilience.

Data highlights

The world is not on track to achieve SDG 1 by 2030.

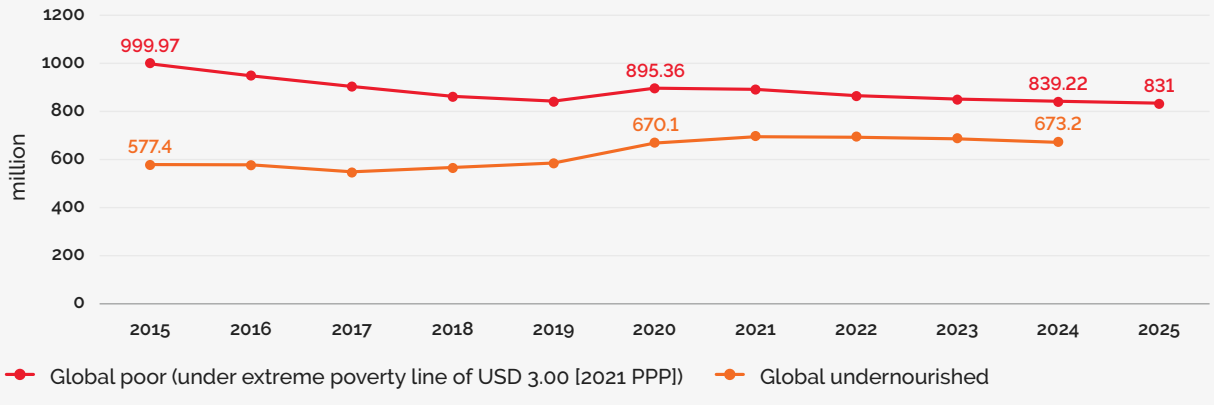
In 2025, 10.1 percent of the population – over one in ten people, or 831 million people globally – lived below the updated extreme poverty line of USD 3 per day (2021 purchasing power parity [PPP]).[2] (Figure 4)

Without a significant acceleration in efforts, 8.9 percent of the global population will still be living in extreme poverty by 2030.[3] These projections align with FAO's current estimates that **512 million people, or 6 percent of the world's population, are still expected to be chronically undernourished in 2030**, illustrating the interconnections between SDG 1 and SDG 2 for vulnerable populations.[4]

The global extreme poverty rate has fallen below its pre-pandemic level, with an estimated 570 000 fewer people living in extreme poverty in 2024 compared with 2019.[2]

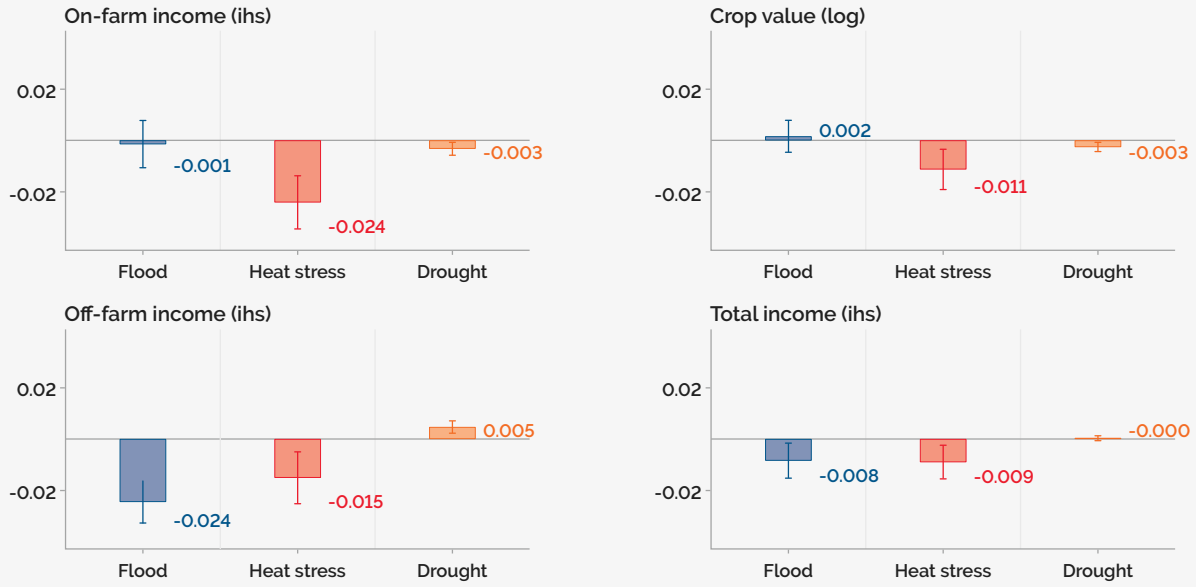
The Global Report on Food Crises 2025 estimates that in 2024, **295.3 million people – or 22.6 percent of the analysed population – experienced high levels of acute food insecurity across**

Figure 4. Estimated number of global poor and undernourished



Source: Author's own elaboration based on data from World Bank. 2025. *Poverty and Inequality Platform.* [Accessed on 10 October 2025.] *https://pip.worldbank.org/home*; FAO. 2025. FAOSTAT: *Suite of Food Security Indicators.* [Accessed in September 2025.] *https://www.fao.org/faostat/en/#data/FS.* Licence: CC-BY-4.0.

Figure 5. Impact of extreme weather events on the incomes of the poor relative to the non-poor



Note: This figure shows the effects of climate stressors (flood, heat stress, drought) on the incomes of poor households relative to non-poor households. Each bar represents the estimated change per additional day of exposure, with negative values indicating greater losses for poor households. Estimates are reported in decimal form.

Source: Adapted from FAO. 2024. *The unjust climate – Measuring the impacts of climate change on rural poor, women and youth.*

53 food-crisis countries and territories. This is the sixth consecutive annual increase. An additional 13.7 million people faced high levels of acute food insecurity compared with 2023.[5]

Not only did 2020 see a historic reversal in global progress in reducing extreme poverty and inequality, but it is also becoming more difficult to reduce poverty through economic growth due to global economic instability and climate change.[1]

Extreme **poverty remains highly concentrated in sub-Saharan African countries** and in **fragile and conflict-affected economies.** Sub-Saharan Africa accounts for 45.2 percent of the global poor, based on the USD 3 a day poverty line established in 2025.[2]

Annual losses from disasters, including climate-related hazards, in crops and livestock production, amount to an average of USD 123 billion. These losses disproportionately affect women, youth and other vulnerable and marginalized communities, undermining hard-won development gains, particularly in Least Developed Countries, Landlocked Developing Countries and Small Island Developing States.[6]

Poor households face significant income losses due to climate stressors, losing 5 percent of their income from heat stress and 4.4 percent from floods annually compared to better-off households. These events exacerbate income inequality, with floods and heat stress widening the rural income gap by USD 21 billion and USD 20 billion each year, respectively.[7] (Figure 5)

Long-term temperature increases intensify poor households' reliance on climate-sensitive agriculture. **A 1 °C rise in average temperature results in a 53 percent increase in farm incomes, but a 33 percent decrease in off-farm incomes for poor households relative to non-poor households, reflecting heightened vulnerability to climate change.**[7]

Key challenges

Vulnerability of poor households to climate change and climate transitions

Climate variability and exposure to more complex, frequent and intense climate extremes threaten to erode – and even reverse – the gains made in eradicating poverty. It is essential to ensure that no one is left behind as we work to mitigate global greenhouse gas emissions and support actions for greener economic transitions. Transition costs can be particularly hard for poorer people to manage and can worsen income inequalities. Greening the economy will require a just transition that considers the most vulnerable populations, including the rural and urban poor. FAO's *Global roadmap for achieving SDG 2 without breaching the 1.5 °C threshold* is a comprehensive, multi-year strategy designed to transform agrifood systems to end hunger and all forms of malnutrition while meeting the Paris Agreement climate goals. Structured around 120 actions across ten domains — including crops, livestock, fisheries, forests, soil and water, clean energy, healthy diets, and food loss and waste — the roadmap sets ambitious targets such as halving per capita food waste by 2030, reducing agrifood systems' methane emissions by 25 percent by 2030, and ultimately transforming these systems into a net carbon sink by 2050.[8] Similarly, transitioning agrifood systems towards producing food for healthy diets can risk excluding the poor, including both farmers and low-income consumers. This transition may increase costs for healthier food options, making them less accessible to poor consumers. Farmers and agricultural workers might struggle to adapt to new production practices or face financial barriers in shifting to more sustainable and health-focused agriculture. Smallholders could be excluded from markets through stringent regulations or certification processes, limiting their income opportunities. Therefore, it is essential to implement inclusive strategies that ensure these transitions benefit all socioeconomic groups, particularly the most vulnerable.



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↑ The Sahel, often hit by conflict, drought and food insecurity, is projected to be severely affected by climate change. With up to 80 percent of its population living in extreme poverty, the Sahel has more widespread poverty than most other parts of Africa. Additionally, it has one of the world's highest population growth rates. Pledges to finance the regreening of the Sahara under the African Union's Great Green Wall initiative have to date been insufficient, missing an opportunity to accelerate progress on SDG 1 and SDG 13.[9]



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↑ **The Rural Livelihoods Information System (RuLIS) is a collaborative initiative developed by the FAO Statistics Division, the World Bank and the International Fund for Agricultural Development (IFAD) to support evidence-based policies aimed at reducing rural poverty. RuLIS compiles and harmonizes data on incomes, livelihoods and rural development from a wide range of countries, providing users with access to standardized indicators derived from nationally representative household surveys. The availability of household income aggregates enables the estimation of Living Income Gaps, an important measure for assessing the wellbeing of agrifood systems' producers and workers.**

Economic shocks from conflict and their impact on poverty reduction

Prospects for economic growth have been undermined by COVID-19 and the impact of global and regional conflicts, which have exacerbated global economic instability, disrupted food supply chains and increased energy prices, significantly affecting poverty levels. Wars, as well as local political instability, create economic uncertainty, slow growth and hinder job creation, making it more difficult for people to escape poverty. Humanitarian aid resources are diverted to address crises, impacting international global poverty alleviation efforts or fundamental national public investments in health, nutrition and education. Additionally, significant displacement of people caused by conflicts heightens poverty and strains resources in host communities and countries.

Poverty implications of tenure insecurity

Land – whether agricultural or urban – is a key asset for reducing poverty. However, systemic discrimination has perpetuated existing inequalities in land access, ownership and control. Tenure security is essential for accessing financial services, making independent decisions regarding household resources and adopting sustainable production practices.[10] When rural households lack secure access to land, water and forests, their ability to optimize resources and capabilities is constrained, undermining both production strategies and food security. According to *the Status of Land Tenure and Governance* (2026), over the past 20 years, the ownership, tenure or use rights of only 35 percent of the world's land is formally documented and some 1.1 billion people, believe it likely they could lose the rights to some or all of their land and housing within the next five years.[11]

Way forward

Ensure just transitions: Implement adaptation measures and sustainability practices in agrifood systems that do not burden the poor. Ensure that the transition to sustainable agriculture and food production includes support for smallholder farmers and low-income consumers, providing them with the resources and opportunities to benefit from these changes. Investments in research and development that address the needs of smallholders, as well as inclusive and adequately funded advisory and extension services, are urgently needed for farmers to adapt to climate change and to bridge the existing productivity gap.

Ensure economic inclusion through innovation and agrifood system opportunities: Foster economic inclusion by leveraging innovation and opportunities within agrifood systems to create jobs and promote a new economic order focused on well-being. Encourage entrepreneurship amongst the youth, support small and medium-sized enterprises and invest in technologies that enhance productivity, sustainability and the inclusion of women in the labour force, ensuring that all segments of society can participate in and benefit from economic growth.



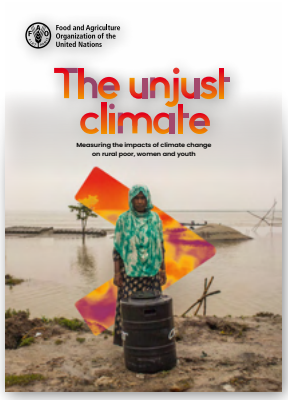
© FAO/Manan Vatsyayana

↑ **FAO supports the development of evidence-based social protection policies, strategies and programmes to achieve SDG 1, promoting inclusive and gender-responsive rural agrifood system transformation, that leaves no one behind. FAO provides technical support and delivers training to governments, develops the capacities of civil society and producer organizations to participate in policy dialogue, and generates evidence to influence thinking on the importance of social protection in enabling rural households to contribute towards economic development.**

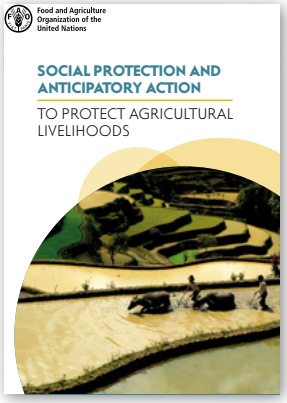
Scale up gender transformative approaches in agrifood systems: Persisting inequalities between women and men undermine global efforts to end poverty and hunger, improve nutrition and promote sustainable agriculture. Conventional gender-sensitive methodologies, which tend to focus on treating the symptoms of gender discrimination without addressing the structural determinants of gender inequality, have often fallen short of attaining long-standing and transformative impacts. It is time to tackle the problem at its source.

Strengthen tenure security for rural poor: Land ownership continues to play an important part in maintaining food security and avoiding extreme poverty. Secure land rights empower people in vulnerable situations, particularly women, foster sustainable resource management and promote investment. Integrating tenure security into social protection and agricultural policies is essential for enhancing food security, reducing poverty and enabling smallholders to access critical resources such as land, fisheries and forests.

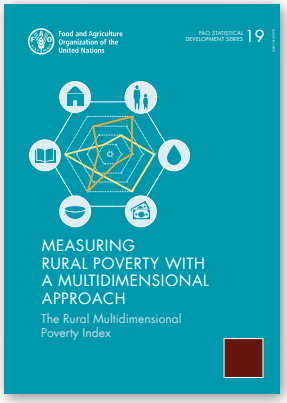
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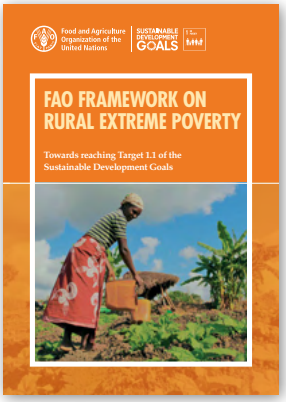
The unjust climate
Measuring the impacts of climate change on rural poor, women and youth



Social protection and anticipatory action to protect agricultural livelihoods



Measuring rural poverty with a multidimensional approach: The Rural Multidimensional Poverty Index



FAO framework on rural extreme poverty
Towards reaching Target 1.1 of the Sustainable Development Goals

Notes:

1 **World Bank.** 2022. *Poverty and Shared Prosperity 2022: Correcting Course.* Washington, DC, World Bank Group. https://hdl.handle.net/10986/37739

2 **World Bank.** 2025. *Poverty and Inequality Platform.* [Cited 8 October 2025.] https://pip.worldbank.org/home

3 **United Nations.** 2025. *The Sustainable Development Goals Report 2025.* New York, USA. https://unstats.un.org/sdgs/report/2025/

4 **FAO, IFAD, UNICEF, WFP & WHO.** 2025. *The State of Food Security and Nutrition in the World 2025 – Addressing high food price inflation for food security and nutrition.* Rome. https://doi.org/10.4060/cd6008en

5 **FSIN & Global Network Against Food Crises.** 2025. *Global Report on Food Crises 2025.* Rome. FSIN. https://www.fsinplatform.org/report/global-report-food-crises-2025/

6 **FAO.** 2023. *The Impact of Disasters on Agriculture and Food Security 2023 – Avoiding and reducing losses through investment in resilience.* Rome. https://doi.org/10.4060/cc7900en

7 **FAO.** 2024. *The unjust climate – Measuring the impacts of climate change on rural poor, women and youth.* Rome. https://doi.org/10.4060/cc9680en

8 **FAO.** 2023. *Achieving SDG 2 without breaching the 1.5 °C threshold: A global roadmap, Part 1 – How agrifood systems transformation through accelerated climate actions will help achieving food security and nutrition, today and tomorrow, In brief.* Rome. https://doi.org/10.4060/cc9113en

9 **Nature.** 2023. Is Africa's Great Green Wall Project withering? *Nature*, 616: 412. https://doi.org/10.1038/d41586-023-01293-6

10 **FAO.** 2025. *The State of Food and Agriculture 2025 – Addressing land degradation across landholding scales.* Rome. https://doi.org/10.4060/cd7067en

11 **FAO, ILC and CIRAD. 2026.** *The status of land tenure and governance.* Rome and Paris. https://doi.org/10.4060/cd8473en



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FAO & SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

As one of the most critical global priorities, Sustainable Development Goal (SDG) 2 underscores the **fundamental right to adequate food**, which is essential for human well-being, economic growth and social stability. The targets of SDG 2 encompass eliminating hunger and malnutrition, doubling agricultural productivity, ensuring sustainable food production systems, maintaining the genetic diversity of seeds and animals, increasing investment, correcting and preventing trade distortions, and limiting extreme price volatility. These objectives reflect the interconnected nature of food security, environmental sustainability and equitable development, making **SDG 2 pivotal to achieving the broader 2030 Agenda for Sustainable Development**.

The Food and Agriculture Organization of the United Nations (FAO) plays a central role in advancing the global agenda on SDG 2. As the United Nations (UN) specialized agency for food and agriculture, **FAO supports countries in developing and implementing policies, programmes and partnerships that address the root causes of hunger and malnutrition**.

As custodian to 11 SDG 2 indicators, FAO leads and provides data-driven insights, technical expertise and capacity building on food security, agrifood systems productivity and sustainability.

It offers policy guidance based on its flagship reports such as *The State of Food Security and Nutrition*, *The State of Food and Agriculture* and *The State of Agricultural Commodity*

Markets. Through normative instruments like the Committee on World Food Security policy recommendations and technical tools such as the FAO Food Insecurity Experience Scale and the Integrated Food Security Phase Classification, FAO helps governments design interventions that improve food access, nutrition and agricultural productivity.

Field programmes implemented by FAO strengthen climate resilient production, improve livelihoods for small-scale farmers, promote nutrition sensitive agriculture and scale up social protection linkages that reduce vulnerability to shocks.

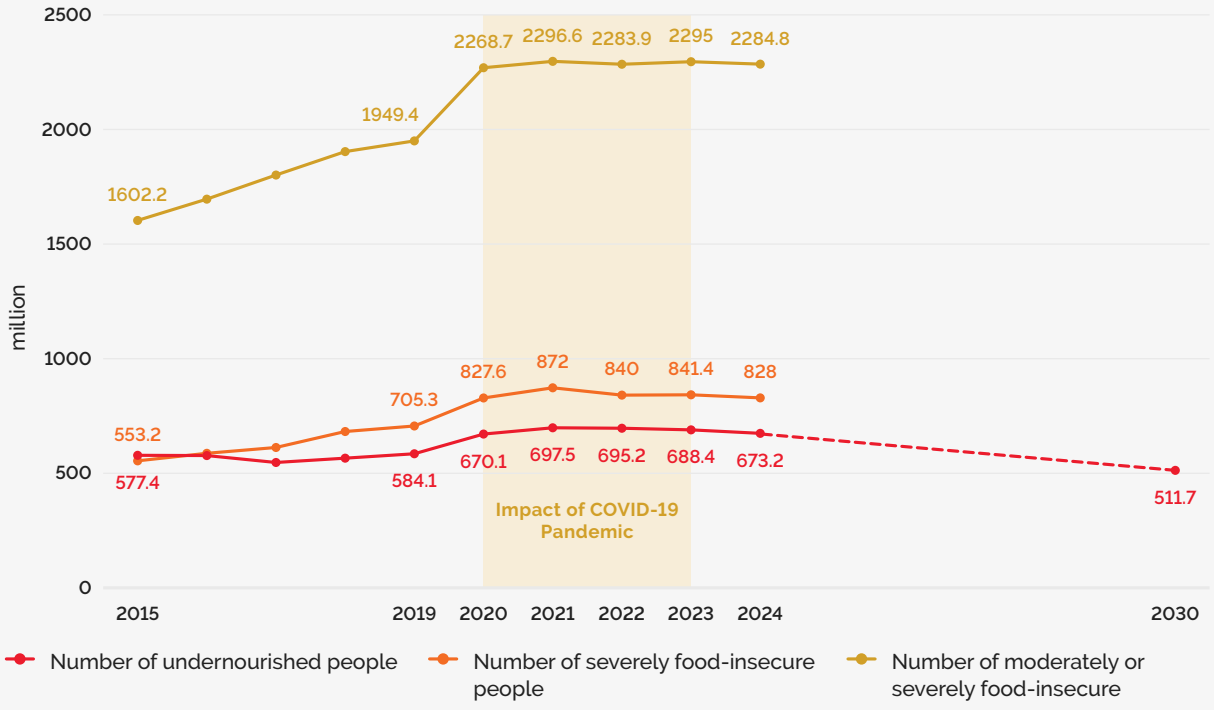
Dialogue and partnerships with governments, civil society, research institutions and the private sector support innovation, investment and capacity development so that countries can accelerate progress towards Zero Hunger.

The **FAO Strategic Framework 2022–2031 seeks to support the 2030 Agenda and the achievement of SDG 2**, through the transformation to more efficient, inclusive, resilient and sustainable agrifood systems for *better production*, *better nutrition*, a *better environment* and a *better life*, leaving no one behind.

Data highlights

The *State of Food Security and Nutrition in the World 2025* points to a decrease in world hunger in recent years (SDG Indicator 2.1.1). **An estimated 8.2 percent of the global population may have faced hunger in 2024, down from 8.5 percent in 2023 and 8.7 percent in 2022.** This progress is driven by notable improvements in South-eastern Asia, Southern Asia and South America. However, in contrast, hunger is continuing to rise in most subregions of Africa and in Western Asia.[1]

Figure 6. Number of undernourished, severely food-insecure and moderately or severely food-insecure



Note: Current prospects are illustrated by dotted line.

Source: Author's own elaboration based on data from FAO. 2025. FAOSTAT: *Suite of Food Security Indicators*. [Accessed in September 2025.] *https://www.fao.org/faostat/en/#data/FS* Licence: CC-BY-4.0.; FAO, IFAD, UNICEF, WFP & WHO. 2025. *The State of Food Security and Nutrition in the World 2025 – Addressing high food price inflation for food security and nutrition*. Rome.

In 2024, between 638 and 720 million people faced hunger, corresponding to 7.8 and 8.8 percent of the global population respectively. Based on the point estimate of **673 million**, this represents **a decrease of 15 million people from 2023 and of 22 million from 2022**. Hunger affected about 307 million people in Africa, 323 million in Asia and 34 million in Latin America and the Caribbean – 20.2, 6.7 and 5.1 percent of the population, respectively.[1]

It is projected however that **512 million people will be facing hunger in 2030**, of whom nearly 60 percent will live in Africa.

Progress has also been made towards achieving the broader goal of ensuring regular access to adequate food for all, with the prevalence of moderate or severe food insecurity declining gradually since 2021 (SDG Indicator 2.1.2). Nonetheless, **in 2024, an estimated 28 percent of the global population (2.3 billion people) were moderately or severely food insecure** (Figure 6).[1]

Food prices rose throughout 2023 and 2024, pushing up the average cost of a healthy diet globally to USD 4.46 purchasing power parity per person per day. Despite this increase, **the number of people unable to afford a healthy diet worldwide declined from 2.76 billion in 2019 to 2.6 billion in 2024**. At the same time, multiple forms of malnutrition are rising, with adult obesity increasing from 12.1 percent of the population in 2012 to 15.8 percent in 2022, and anemia among women aged 15 to 49 reaching 30.7 percent in 2023. Using pooled data from 2020 to 2024, estimates suggest that one-third of women aged 15 to 49 years globally consumed diets that were not sufficiently diverse, thereby putting them at risk of inadequate intake of essential vitamins and minerals required for good nutrition and health.[1]

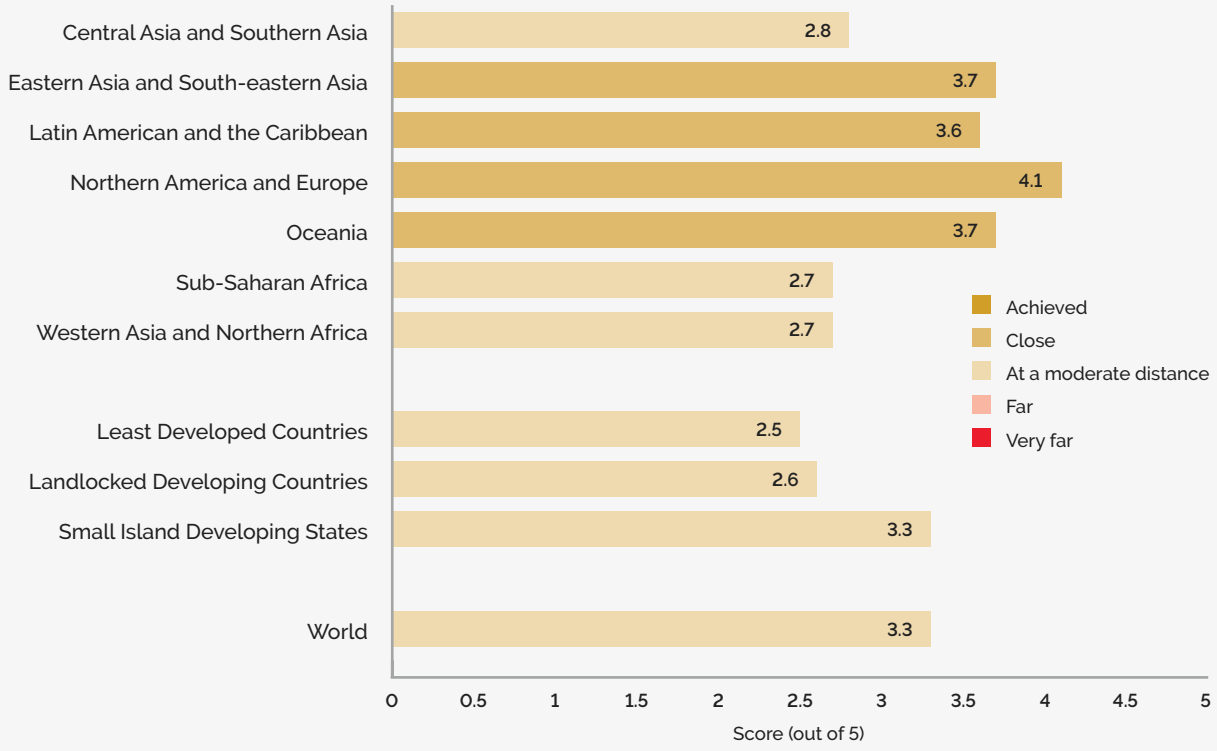
Smallholdings operating on less than two hectares account for nearly 85 percent of the world's 570 million farms and their production is essential to dietary diversity and food security, particularly in low-income settings.[2] However, **in the majority of countries with available data, the average annual income of small-scale producers is less than half that of larger-scale producers (SDG Indicator 2.3.1).** Gender disparities further exacerbate this income inequality.[3]

In almost half of countries with available data, **women-headed production units earn less than 70 percent of male-headed units equivalent**, despite having on par or higher labour productivity.[3] In some countries, this gap may be more pronounced, with men earning more than twice compared to that of women-headed production units.

Data derived from a combination of key economic, social and environmental indicators, suggests that the world is currently **at a moderate distance to achieving productive and sustainable agriculture** (with a score of 3.3 out of 5), while also having registered a slight improvement in the trend (score 4.0 out of 5) since 2015 (SDG Target 2.4). Northern America and Europe (4.1), Eastern Asia and South-eastern Asia (3.7), Oceania (3.7), and Latin America and the Caribbean (3.6), are close to achieving productive and sustainable agriculture, while Central Asia and Southern Asia (2.8), Western Asia and Northern Africa (2.7), and sub-Saharan Africa (2.7) are at a moderate distance. Least Developed Countries and Landlocked Developing Countries, with the lowest scores (2.5 and 2.6 out of 5, respectively) are also at a moderate distance from achieving the target (Figure 7).

Genetic conservation efforts working towards SDG Target 2.5, however, face challenges, with the growth of seed and plant gene bank holdings slowing to 0.5 percent in 2023 and 0.1 percent in 2024, well below the long-term average of 3.2 percent. Wild food plants and crop relatives also remain under-represented in these gene banks. Additionally, **the conservation of genetic diversity for farmed animals is critically low, with sufficient material for recovery available for only 5 percent of local breeds and 17 percent of transboundary breeds as of 2024**.[3]

Figure 7. Distance to achieving productive and sustainable agriculture (SDG Indicator 2.4.1 proxy, current status 2022 score)



Source: Author's own elaboration based on data from FAO. 2025. FAOSTAT: SDG *Indicators*. [Accessed in September 2025.] *https://www.fao.org/faostat/en/#data/FS*. Licence: CC-BY-4.0.

Key challenges

Conflict driven disruptions to food security

Armed conflicts are one of the most significant drivers of food insecurity. Conflict disrupts food production and distribution, inflates the price of nutritious food, displaces populations and exacerbates food crises. **In 2022, almost 60 percent of countries worldwide faced moderately to abnormally high food prices due to the spillover effects of conflicts.**[4]

Climate shocks reduce food production and access to healthy diets

Extreme temperatures, limited water access, climate variability, the evolution of pests and diseases, and the migration of human beings and species pose substantial threats to agrifood systems worldwide. Climate change is disproportionately affecting the incomes of rural people living in poverty, particularly women and older populations, further limiting access to healthy diets.[4] Therefore, the challenges of the climate crisis cannot be tackled separately from efforts to address poverty and malnutrition.

Soil degradation undermines crop yields

Land degradation has become a pervasive global challenge, eroding productivity and ecosystem health across countries of all income levels and farms of all sizes. More than one-third of the world's agricultural land is now degraded, affecting 1.7 billion people living in areas experiencing significant yield losses as a result. Over 300 million of these people are in regions already experiencing food insecurity.[5]

Way forward

Strengthen resilience and anticipatory action against shocks: Numerous simultaneous shocks, such as the COVID-19 pandemic, extreme weather events, conflicts and wars, and the economic downturn, have slowed progress towards eradicating hunger and improving access to healthy diets. These shocks have also introduced new challenges to agrifood systems. Anticipatory actions, preventive measures, building resilience and ensuring the sustainability of these measures are critical to transforming agrifood systems so they can feed the growing population. The Financing for Shock-Driven Food Crises Facility aims to bridge the increasing gap between required funding for food crises and early actions needed to prevent them. By focusing on anticipatory financing and actions, the Facility enables a faster response using scientific triggers and pre-established action plans. The facility seeks to shift from costly emergency funding to a cost-effective, proactive approach by leveraging insurance companies and blended financing to mitigate extreme shocks and crises before they escalate into severe food insecurity.

Promote resilience-building through preventive and absorptive components: To eradicate hunger and malnutrition, ensure access to healthy diets and produce nutritious food, efforts must focus on making agrifood systems more resilient.

Adopting preventive components: Adopting early warning systems, implementing the One Health approach and developing insurance mechanisms to minimize the consequences of shocks.

Adopting absorptive components: Expanding social protection programmes to provide immediate assistance for vulnerable populations, increasing productivity and efficiency and maintaining trade and food mobility in times of crisis.



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↑ In the wake of a devastating earthquake in 2023, cooperatives in Türkiye, supported by FAO, are promoting women's entrepreneurship and economic self-sufficiency. FAO provided machinery and equipment to help the cooperative rebuild and relaunch its e-commerce efforts. Such initiatives align with FAO's commitment to invest in gender equality and women's empowerment in agrifood systems. These go a long way in advancing progress and enhancing the resilience and food security of households and communities.

Expand inclusive social protection systems: Expanding social protection programmes is essential to increasing resilience, particularly for women, girls and Indigenous Peoples who face heightened vulnerability and are more susceptible or prone to risks due to social, economic and cultural factors, and discriminatory practices. Scaling up and innovating within social protection programmes, while addressing the root causes of vulnerability, are critically important, taking lessons from experiences during the COVID-19 pandemic.

Promote integrated responses for inclusive agrifood systems: Improving agrifood systems requires integrated actions at all levels, to promote healthy diets and sustainable consumption practices. It is important to recognize the important contribution of land and aquatic foods, small-scale and family farmers, pastoralists, herders, fishers, aquaculture producers, forest-dependent people and women and men working in agrifood systems in ensuring food security and nutrition, while realizing the right to adequate food. Such transformation requires government-led actions based on science and evidence, adopting new technologies, innovations and emerging social solutions, building on Indigenous Peoples' and traditional knowledge and involving all relevant stakeholders.

Reduce food loss and waste: Cutting food loss and waste creates a triple-win opportunity by improving food security, delivering climate benefits and increasing the availability of nutritious food while minimizing pressure on natural resources.



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↑ The FAO Global Soil Doctors Programme promotes sustainable soil management in 21 countries, addressing agricultural challenges due to soil degradation. The programme's success stems from its focus on farmers' practical knowledge and fostering collaboration through locally adapted, multilingual strategies.



© FAO/Sylvain Cherkaoui

↑ The FAO 'Strengthening Agricultural Adaptation' project aims to reinforce climate adaptation planning for food security and nutrition in Côte d'Ivoire, Haiti and Senegal, which are particularly vulnerable to climate change impacts. The project promotes practices that protect biodiversity, value ecosystem services and build on traditional knowledge, while recognizing the key role of rural women and youth in climate change adaptation planning.

Empower women and advance gender equality: Empowering women and addressing gender disparities are essential to reducing food insecurity and malnutrition while building resilient agrifood systems. Despite women's significant contributions to agrifood systems, they remain particularly disadvantaged in land ownership, face large productivity and wage gaps and often hold informal, low-paid and vulnerable positions within them. To address these inequalities, intentional gender transformation actions are needed to challenge discriminatory norms as well as formal policies and laws that perpetuate gender inequality and close the wage, productivity, asset and service gaps on a large scale.

Leave no one behind: Ensuring the inclusion of youth and marginalized groups and adhering to the leave no one behind principle fosters a more inclusive agrifood system, driving sustainable development and social justice.

Tailor support to smallholder farms: Farmers must have secure land tenure, access to markets and credit and be supported by effective institutions and inclusive governance frameworks, in order to sustainably close yield gaps in smallholder systems.

Address land degradation: Land degradation affects farms of all sizes, and solutions must be tailored, and include promoting appropriate intensifications such as the use of fertilizer, machinery, irrigation, regenerative practices and locally adapted soil management solutions.

Increase efficiency through innovation: Geospatial targeting, innovations in precision agriculture, reducing food loss and waste, and advancing the circular bioeconomy are vital avenues for enhancing efficiency and sustainability.

Enable consumers to access and choose healthy diets: Improve food environments and ensure people are aware, motivated and empowered, and can afford nutritious, safe and diverse foods, supported by effective education, consistent messaging and policies that facilitate healthier dietary patterns.

Scale up climate-smart and nature-based agriculture: Agrifood systems can improve their capacity to mitigate and adapt to the impacts of the climate crisis, enhance biodiversity, store carbon and reduce emissions through the use of climate-smart approaches, nature-based solutions, bioeconomy innovations and agroecological methods. The FAO *Global roadmap for achieving SDG 2 without breaching the 1.5 °C threshold*, goes beyond simply aligning agrifood systems transformation with climate action — it uses climate action as the foundational lever to simultaneously advance food security, nutrition, livelihoods, and environmental resilience across the full spectrum of agrifood systems. It outlines tangible actions, solutions and clear outcomes across ten distinct domains, eight sectors and two cross-cutting policies, requiring urgent implementation at national, regional and global levels over the next three years. These measures aim to ensure agrifood systems work for people and the planet, enhancing food security and enabling healthy diets for all, while keeping within the 1.5 °C climate target.

Accelerate the transition to more efficient, inclusive, resilient and sustainable agrifood systems: To bring about a healthier and equitable future, including achieving Zero Hunger and ending malnutrition in all its forms, it is critical to reverse ecosystem degradation, adapt to and mitigate climate change and support rural and urban livelihoods. Enhancing agricultural systems (i.e. crops, livestock, forestry, fisheries, and aquaculture) to be more productive, efficient and sustainable is critical for managing and protecting natural resources and preventing, halting and reversing ecosystem and biodiversity degradation.



© FAO/Marco Palombi

↑ FAO's work includes the development and scaling of information and communication technologies (ICTs) and Agro-informatics Digital Public Goods. These are critical tools for enabling evidence-based decision-making, sustainable natural resource management and strengthening early warning systems.

Increase and target investment to sustainable agrifood systems: Ending hunger and improving agricultural productivity and resilience requires increased, and more cost-effective, financing. However, investment in agriculture is declining. Government expenditure on agriculture relative to the sector's contribution to gross domestic product declined from 0.50 in 2015 to 0.43 in 2023, which may signify that governments are investing less in agriculture compared to the sector's contribution to the economy.[2] Mobilizing adequate and strategic financing, in light of the recommended definition (chapter 3) and principles (chapter 5) outlined in *The State of Food Security and Nutrition 2024*, is crucial for transforming agrifood systems and achieving Zero Hunger. Agrifood systems must attract climate financing to mitigate their impacts and adapt to evolving challenges.

Invest in innovation, science and digitalization for agrifood systems: Facilitating an enabling policy environment that considers the needs, priorities, knowledge and contributions of small-scale and family farmers, fishers, aquaculture producers, rural women, Indigenous Peoples and forest-dependent people is essential to unleashing the potential of science, technology and innovation while building on Indigenous and traditional knowledge. Furthermore, the digital transformation must focus on bridging the rural divide and empowering vulnerable populations, including women and youth, through access to information, technology and markets. Data-driven agriculture promises opportunities for more efficient, inclusive, resilient and sustainable agrifood systems, positively affecting food markets and agricultural productivity to enhance food security.

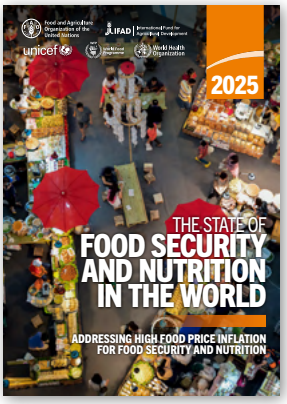
Foster strategic partnerships and collaboration: Partnerships are key to agrifood systems transformation; collaborations across sectors, partners and geographies are necessary to address complex global challenges. By working with governments, science and research institutions, extension services, cooperatives, producer organizations, private sector entities, civil society, marginalized communities and lawmakers (such as parliamentarians who play a critical role in shaping legislation and policies to support agrifood systems), we can build on the momentum of global processes such as the UN Food Systems Summit, the SDG Summit and the Summit of the Future. These partnerships can create opportunities for all to participate in agrifood systems, support sustainable agriculture and rural transformation, and improve livelihoods while addressing social inequalities.

Leverage trade to build resilience: Countries should use trade as a means to enhance the efficiency, sustainability and resilience of agrifood systems and support progress towards achieving the SDGs, including keeping markets and trade channels open for the movement of food, fuel, fertilizer and other agricultural inputs and outputs.

Foster open, fair and equitable trade: Promote a non-discriminatory, rules-based, open, fair, inclusive, equitable and transparent multilateral trading system, with the World Trade Organization (WTO) at its core, to support agricultural and rural development, and contribute to world food security and improved nutrition for all. Additionally, it is necessary to strengthen market transparency. Ensuring access to timely and credible market data and information facilitates decision-making, reduces uncertainly in markets and reinforces resilience to socioeconomic shocks, conflicts, pandemics and extreme weather events.

Promote data and evidence-based policies: Enhancing the collection of reliable, timely, disaggregated data and information at national and subnational levels, and ensuring evidence-based policy and decision-making are crucial for improving food security and nutrition.

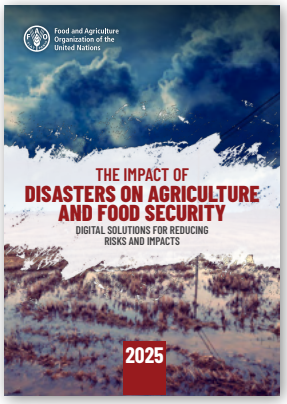
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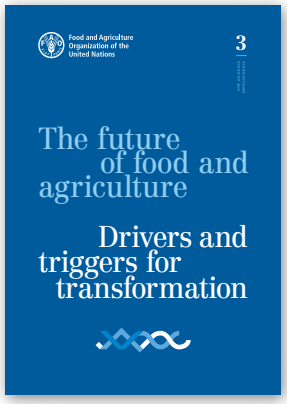
The State of Food Security and Nutrition in the World 2025



The State of Food and Agriculture 2024



The Impact of Disasters on Agriculture and Food Security 2025



The future of food and agriculture – Drivers and triggers for transformation



The State of Food and Agriculture 2025.



The State of Agricultural Commodity Markets 2024



Tracking progress on food and agriculture-related SDG indicators 2025



Achieving SDG 2 without breaching the 1.5 °C threshold: A global roadmap, Part 1

Notes:

1 **FAO, IFAD, UNICEF, WFP & WHO.** 2025. *The State of Food Security and Nutrition in the World 2025 – Addressing high food price inflation for food security and nutrition.* Rome. https://doi.org/10.4060/cd6008en

2 **FAO.** 2025. *The State of Food and Agriculture - Addressing Land Degradation Across Landholding Scales.* Rome. https://doi.org/10.4060/cd7067en

3 **FAO.** 2025. *Tracking progress on food and agriculture-related SDG indicators 2025.* Rome. https://doi.org/10.4060/cd5832en

4 **FAO, IFAD, UNICEF, WFP & WHO.** 2022. *The State of Food Security and Nutrition in the World 2022 – Repurposing food and agricultural policies to make healthy diets more affordable.* Rome. https://doi.org/10.4060/cc0639en

5 **FAO.** 2024. *The unjust climate – Measuring the impacts of climate change on rural poor, women and youth.* Rome. https://doi.org/10.4060/cc9680en

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FAO and SDG 3: Ensure healthy lives and promote well-being for all at all ages

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Realizing healthy lives and well-being for all, as committed to under Sustainable Development Goal (SDG) 3, cannot be achieved without transforming agrifood systems. **Food is a major contributor to health: what is produced, how it is produced, how it reaches people's tables and how it is consumed directly shapes nutrition outcomes, disease risks and environmental health.**

SDG 3 is therefore closely linked to the mandate of the Food and Agriculture Organization of the United Nations (FAO). Poor diets are now the leading driver of disease worldwide, while unsafe food and unsustainable farming practices fuel the public health burden, from antimicrobial resistance (AMR) to pollution-related and chronic disease deaths. At the same time, agriculture is on the front line for preventing zoonotic spillovers and protecting ecosystems that sustain human health.

FAO's contribution to SDG 3 is embedded in the FAO *Strategic Framework 2022–2031* and addresses the multiple health implications of agrifood systems.

Guided by the *Vision and Approach for FAO's work in Nutrition* (2025–2031), FAO promotes people-centred agrifood policies, assists Members in developing and implementing national dietary guidelines, provides scientific advice on different aspects of healthy diets and advances an inclusive and resilient agrifood systems approach, aimed

at improving the availability, accessibility, affordability and consumption of nutritious food. It also supports awareness raising and behaviour change in agrifood systems actors, including consumers. This work is framed under the Programme Priority Area (PPA) of *Healthy diets for all* in the FAO Strategic Framework (2022–2031).

In partnership with the World Health Organization (WHO) and through the Codex Alimentarius Commission, FAO provides scientific advice on food safety and quality and develops science and risk-based international food standards. FAO supports the development of national food control systems – a cornerstone of the implementation of risk-based approaches to food safety at global and national level – and fosters public-private collaboration along the food chain. Achieving *Safe food for everyone*, is a PPA under the FAO Strategic Framework (2022–2031).

One Health is a further PPA, that aims to sustainably balance and optimize the health of people, plants, animals and ecosystems. To address the challenges that zoonotic diseases and AMR pose to sustainable agrifood systems and public health, FAO established the Joint FAO/WHO Centre (CODEX Food Standards and Zoonotic Diseases), which coordinates FAO's collective work on AMR. FAO also collaborates closely with the United Nations Environment Programme (UNEP), World Health Organization (WHO) and the World Organisation for Animal Health (WOAH) to address risks at the human, animal, plant and environment interface. As part of this Quadripartite collaboration, integrated actions on the health of people, animals, plants and ecosystems are promoted. FAO promotes and supports adoption of a One Health approach in agrifood systems through a dedicated platform, the One Health Knowledge Nexus.



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↑ **The Reduce the Need for Antimicrobials on Farms for Sustainable Agrifood Systems Transformation (RENOFARM) initiative is an action-oriented, country-focused and country-led initiative responding to the global agrifood systems transformation agenda. RENOFARM engages the entire production chain, from farm to fork, providing comprehensive support in implementing good production practices that lead to a reduced need for antimicrobials and a prudent and responsible use when antimicrobials are needed. Furthermore, it includes regional and global components to support country-level action by supporting National Action Plans on antimicrobial resistance (AMR).**

FAO monitors and advises on the sustainable use of fertilizers, pesticides, soil and water resources, supporting countries in reducing pollution and protecting ecosystems. Through innovative and integrated solutions, such as integrated pest management (IPM), integrated land and water management, nature-based solutions and life cycle management of pesticides, FAO aligns its efforts with key multilateral environmental agreements, including the Basel, Rotterdam and Stockholm Conventions.

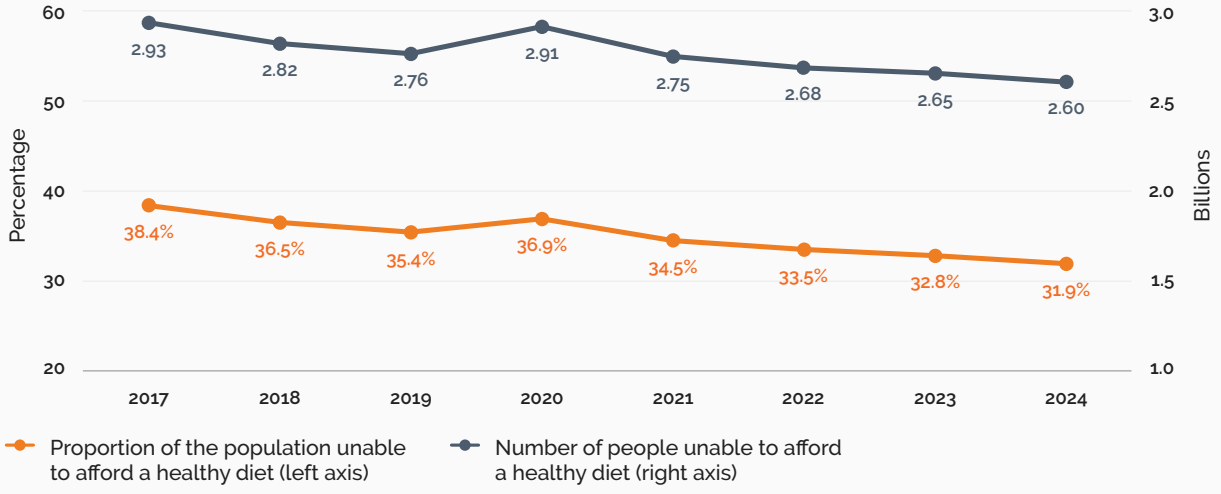
Data highlights

Unhealthy diets are a global health risk **however, in 2024 healthy diets were unaffordable for 2.6 billion people**.[1] Unhealthy diets are one of the major risk factors for non-communicable diseases, including **for almost two-thirds of all deaths globally and more than half of all premature deaths. At the same time, undernutrition, of which unhealthy diets are a principal cause, is a factor in approximately half of all the deaths occurring in children under 5 years.**[2, 3]

The State of Food Security and Nutrition in the World 2025 highlights the triple burden of malnutrition — undernutrition, obesity and micronutrient deficiencies — affecting populations across all regions. In 2024, it is estimated that between 638 and 720 million people faced hunger; adult obesity has risen from 12.1 percent in 2012 to 15.8 percent in 2022; and micronutrient deficiencies are also on the raise, with global prevalence of anemia in women aged 15 to 49 years increasing to 30.7 percent, leaving them and their children at heightened risk of impaired physical and cognitive development (Figure 9).[2, 3]

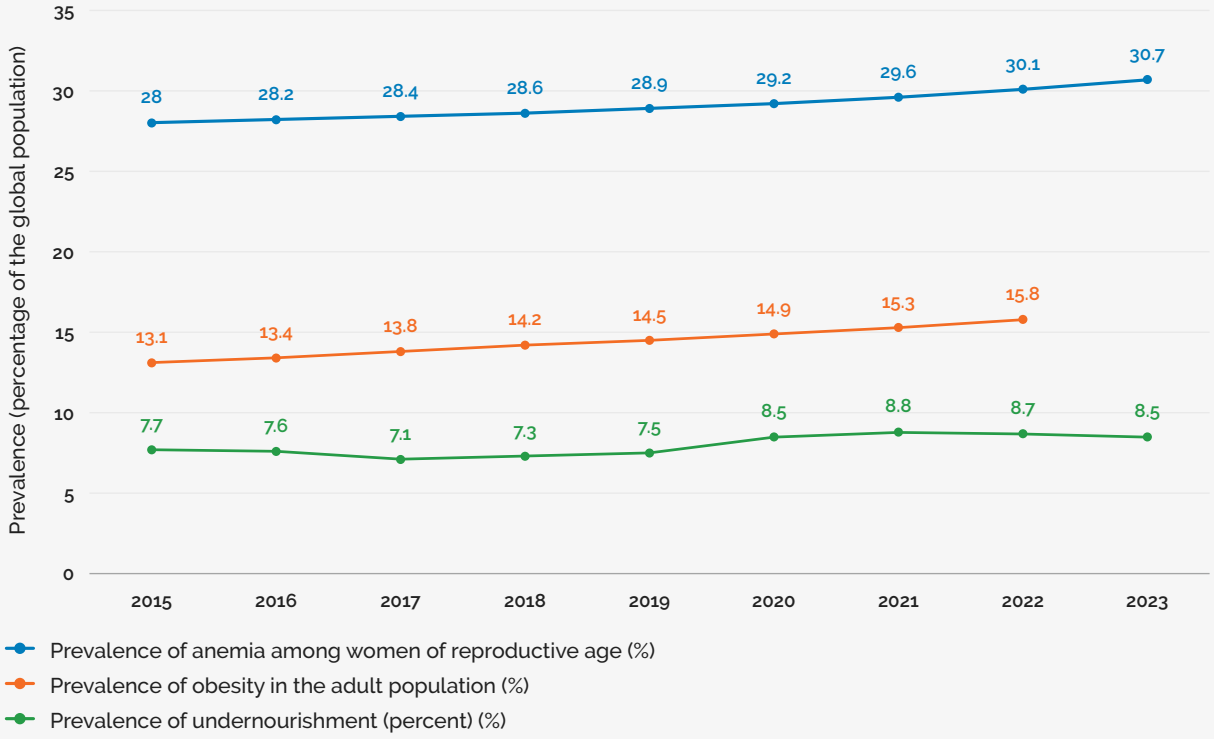
Food safety is critical to food security and public health. Each year, **as many as 600 million people fall sick due to contaminated food and up to 420 000 of them die.**[4] Effective food safety and quality control systems are therefore critical for safeguarding the health and well-being of people.

Figure 8: Proportion of the population and number of people unable to afford healthy diet globally, 2017-2024



Source: FAO, IFAD, UNICEF, WFP and WHO. 2025. *The State of Food Security and Nutrition in the World 2025 – Addressing high food price inflation for food security and nutrition.* Rome. https://doi.org/10.4060/cd6008en

Figure 9. Trends in malnutrition since 2015



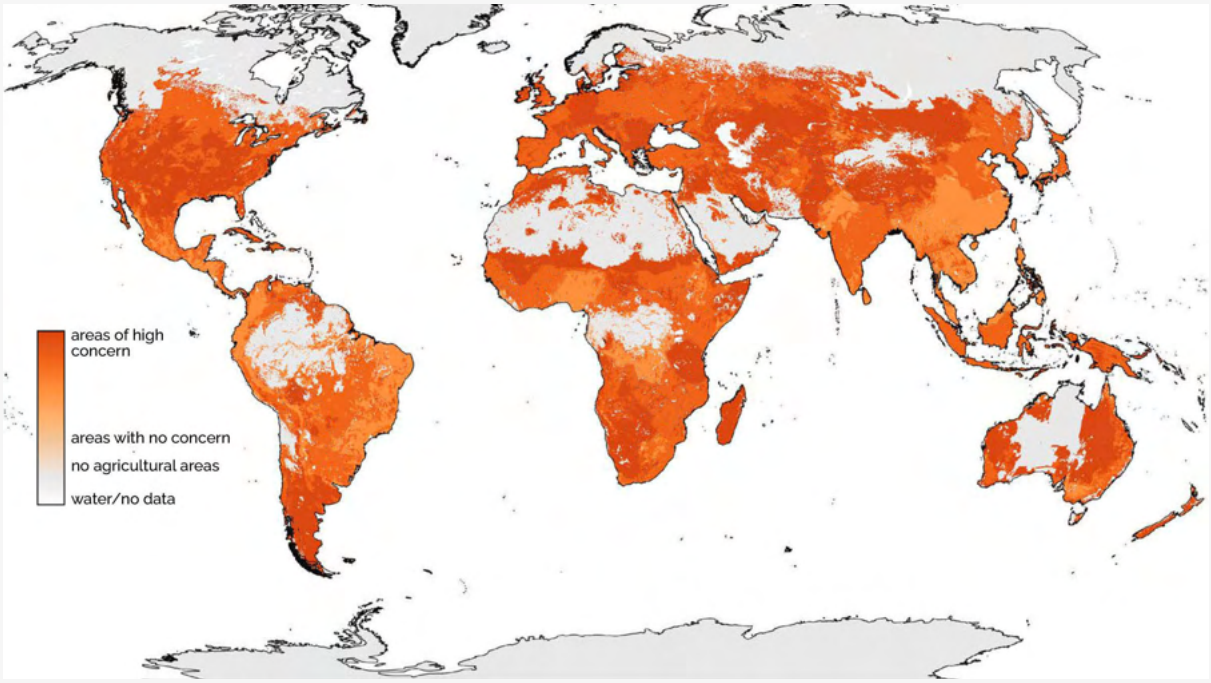
Source: Author's own elaboration, based on data from FAO. 2025. FAOSTAT: *Suite of Food Security Indicators*. [Accessed in September 2025.] https://www.fao.org/faostat/en/#data/FS. Licence: CC-BY-4.0.

In 2019, bacterial AMR was associated with 5 million human deaths worldwide and directly attributable to 1.3 million.[5] Agriculture is a major contributor, with global antibiotic consumption in the sector estimated at between 63 000 and 240 000 tonnes annually. The livestock sector accounts for the largest share, and global livestock antibiotic use is predicted to rise by 30 percent by 2040 compared to 2019 levels.[6] As AMR has multiple drivers and needs to be tackled on many fronts, a One Health approach is essential to ensure that all sectors and stakeholders communicate and work effectively together.

Zoonotic diseases – diseases shared between animals and people – can pose serious risks to both animal and human health. There are over 200 known types of these diseases and **60 percent of all human infectious diseases are zoonotic in origin.**[7]

Rising demands on agrifood systems are accelerating global environmental degradation (Figure 10). Alongside climate change, pollution – particularly soil pollution – is a major global challenge. When soils lose their ability to absorb contaminants, risks for ecosystems and human health increase. Unsustainable practices, such as excessive agrochemical use and poor water management, drive soil pollution and remobilize contaminants. **In 2023, global pesticide use reached 3.73 million tonnes, double 1990 levels, and inorganic fertilizer use reached 190 million tonnes.**[8, 9] Soil pollution disproportionately harms people in vulnerable situations, including children and pregnant women, exacerbating health inequalities. Low- and middle-income countries bear the highest burden of pollution-related mortality and disease.[10]

Figure 10. Global regions of concern (global areas susceptible to pesticide pollution)



Note: Refer to the disclaimer on page ii for the names and boundaries used in this map.

Source: Adapted from Tang, F.H.M., Lenzen, M., McBratney, A. & Maggi, F. 2021a. Risk of pesticide pollution at the global scale. Nature Geoscience, 14(4): 206–210; FAO. 2021. *The State of the World's Land and Water Resources for Food and Agriculture – Systems at breaking point. Synthesis report 2021.* Rome. https://doi.org/10.4060/cb7654en

Key challenges

Health and nutrition risks linked to climate change and biodiversity loss

Climate change disrupts food production and spreads pests and diseases, while biodiversity loss weakens ecosystem resilience, making agrifood systems more vulnerable to shocks. Rising temperatures, floods, droughts and other extreme weather events reduce yields, compromise nutrient quality, affect food safety and heighten the risk of food insecurity and malnutrition. These impacts disproportionately affect the poorest households, who rely heavily on climate-sensitive agriculture, and exacerbate existing health inequities.[11]

Weak policy integration limits progress on nutrition and public health

Health, agrifood and environment policies often operate in isolation, limiting opportunities for coherent responses. Weak integration of nutrition and health priorities into agrifood systems strategies continues to undermine progress towards healthier diets and improved public health outcomes.



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↑ **Plastic use is widespread in agrifood systems, from mulching films to irrigation, but, as it breaks down into micro and nanoplastics, it contaminates soils, water and food, posing risks to ecosystems and human health. Policy responses remain fragmented: plastics are often regulated by environmental agencies, while their health impacts fall under agriculture, food safety or public health mandates. FAO is striving to connect science and policy in this area. A key part of this effort is the integration of One Health thinking, which brings together environmental scientists, veterinarians, agronomists and health experts to develop holistic, evidence-based solutions. Through global assessments, expert convenings and the development of a voluntary code of conduct for sustainable plastic use in agriculture, FAO is working to safeguard human health by reducing plastic pollution across agrifood systems.**

Way forward

Advance a One Health approach: Recognizing the interdependence of people, animals, plants, and the environment, FAO calls for a One Health transformation of agrifood systems to deliver SDG 3.

Promote healthy diets for all: Scale up policies and programmes that make nutritious foods accessible, affordable and desirable, in line with *FAO/WHO guidance* on the four principles of healthy diets; adequate, balanced, diverse and moderate, as well as national dietary guidelines. These policies and programmes can include information/communication targeting different population groups but, most importantly, education and other behavioural approaches to support and empower consumers to become agents of change.

Strengthen food safety for everyone: Support countries to implement Codex standards, modernize food control systems and expand early warning and response mechanisms.

FAO One Health Priorities:

Improving early warning systems on animal and plant pests and diseases, including zoonotic diseases at the human-animal-plant-environment (HAPE) interface.

Strengthening biosecurity for pest and disease management in animals and plants, including zoonotic diseases, pests and invasive alien species management.

Facilitating effective emergency preparedness and response for anticipatory action on and response to food-chain emergencies, food safety issues and other health events at the human, animal, plant and environment interface.

Heightening AMR risk management at national, regional and global level by supporting One Health responses to AMR in the food and agriculture sector.

Enhancing One Health systems through strengthening contributions to One Health and biodiversity, and its ecosystem services, environmental health, soil/land, water, food safety and the sustainability of agrifood systems.



© FAO Kenya

↑ In Kenya, smallholder farmers have faced major losses from fall armyworm (FAW), especially in maize production. In response, FAO launched a sustainable FAW management project in 2022 under the FAO–China South-South Cooperation Programme. Using IPM techniques — like biological control with Trichogramma wasps, early planting, crop rotation and pest monitoring — yield losses dropped from 18 to 5.5 percent. These efforts boosted maize yields, reduced pesticide use, and improved food security and safety for smallholder farmers to protect health, prevent increases in malnutrition and avoid environmental pollution.

Reduce harmful inputs: Advance sustainable fertilizer and pesticide management, integrated pest control, and responsible antimicrobial use to curb AMR.

Enhance governance: Embed One Health into national policies, link health and agrifood monitoring, and enforce environmental and food safety regulations.

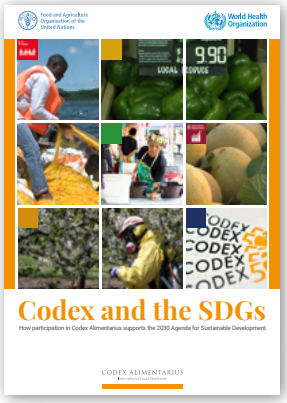
Build resilience: Integrate climate adaptation, biodiversity protection, pollution prevention and social protection to reduce health risks for the most vulnerable.

Mobilize partnerships: Deepen United Nations, civil society, and private sector alliances to accelerate global action at the health–food–climate nexus.

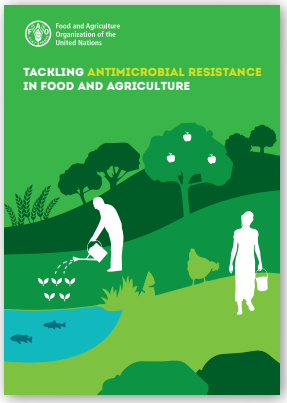
Learn more



Food systems-based dietary guidelines: An overview



Codex and the SDGs: how participation in Codex Alimentarius supports the 2030 Agenda for Sustainable Development



Tackling antimicrobial resistance in food and agriculture



FAO Conceptual Framework for Integrated Land and Water Resources Management

Notes:

1 **FAO, IFAD, UNICEF, WFP & WHO.** 2025. *The State of Food Security and Nutrition in the World 2025 – Addressing high food price inflation for food security and nutrition.* Rome. https://doi.org/10.4060/cd6008en

2 **FAO.** 2024. *The State of Food and Agriculture 2024 – Value-driven transformation of agrifood systems.* Rome. https://doi.org/10.4060/cd2616en

3 **United Nations.** 2025. *The Sustainable Development Goals Report 2025.* New York, USA. https://unstats.un.org/sdgs/report/2025/

4 **FAO.** 2023. *Safe food for everyone – FAO's work on food safety: science, standards and good practices.* Rome. https://doi.org/10.4060/cc4347en

5 **Murray, C.J., Ikuta, K.S., Sharara, F., Swetschinski, L., Aguilar, G.R., Gray, A., Han, C. et al.** 2022. Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. *The Lancet*, 399(10325): 629-655. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)02724-0/fulltext#seccestitle10

6 **Acosta, A., Tirkaso, W., Nicolli, F., Van Boeckel, G., Cinardi, G. & Song, J.** 2025. The future of antibiotic use in livestock. *Nature Communications*, 16(2469). https://doi.org/10.1038/s41467-025-56825-7

7 **FAO.** 2025. Decoding pathogen spillover: Understanding the origins of zoonotic threats. In: One Health. Rome. [Cited 5 September 2025.] https://www.fao.org/one-health/highlights/understanding-the-origins-of-zoonotic-threats/en

8 **FAO.** 2025. *Pesticides use and trade – 1990–2023.* FAOSTAT Analytical Briefs, No. 109. Rome. https://doi.org/10.4060/cd5968en

9 **FAO.** 2025. *Inorganic fertilizers – 2002–2023.* FAOSTAT Analytical Briefs, No. 108. Rome. https://doi.org/10.4060/cd5938en

10 **FAO & UNEP.** 2021. *Global assessment of soil pollution: Report.* Rome. https://doi.org/10.4060/cb4894en

11 **FAO.** 2024. *The unjust climate – Measuring the impacts of climate change on rural poor, women and youth.* Rome. https://doi.org/10.4060/cc9680en

Food and Agriculture Organization of the United Nations



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FAO and SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Education is both a fundamental right and a driver of sustainable agrifood systems transformation, shaping the knowledge, skills and values that underpin food security, decent livelihoods and sustainable resource management. When education and skills development are linked with food security and nutrition, they create the foundation for healthier populations and more resilient societies.

Globally, 150.2 million children under five were affected by stunted growth in 2024, 35.5 million are overweight, and millions more lack essential nutrients.[1] Poor nutrition affects children's ability to learn and thrive, while limited access to education perpetuates cycles of poverty, food insecurity and inequality. Ensuring that all learners acquire the knowledge and skills needed for sustainable development is therefore central to breaking this cycle. This includes not only formal schooling but also lifelong learning opportunities for adults, who are often the primary decision-makers in household food production and consumption. Empowering adults through education strengthens their ability to improve nutrition, manage natural resources sustainably, and adapt to climate and market changes. Non-formal education approaches, such as Farmer Field Schools (FFS), play a key role in this regard by offering experiential, group-based learning that builds on local knowledge and fosters innovation.

Holistic school food and nutrition programmes, relevant vocational and technical training and



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↑ The FAO School Food Global Hub, launched in 2022, is a knowledge exchange platform and one-stop shop for resources on school food and nutrition from around the world. It features more than 48 country profiles, showcasing approaches and processes for setting and implementing national school meals nutrition guidelines and standards, policies and food and nutrition education. It includes global and regional guidance on various aspects of school food and nutrition developed by UN agencies and other international organizations.

inclusive lifelong learning opportunities are essential to build the human capital needed for agrifood systems transformation and key elements within Sustainable Development Goal (SDG) 4.

The Food and Agriculture Organization of the United Nations (FAO) undertakes numerous activities to advance SDG 4.

FAO has developed a comprehensive approach to **school food and nutrition programmes** that adopt an agrifood systems perspective, aiming to support countries to improve school aged children's and adolescents' nutrition and diets through coordinated, synergistic programmes that deliver lasting impact. This includes: 1) enabling policies; 2) food and nutrition education; 3) improvements in the food environment; and 4) links to local food procurement.

Since the launch of this approach in 2019, FAO has supported countries in the development of landmark legislation, implemented field projects to strengthen national school meal programmes, integrated food and nutrition education in school curricula and linked these programmes to smallholder farmers. Alongside this, FAO advocates for education systems sensitive to the needs of rural communities. It encourages the adoption of school calendars compatible with seasonal rural work and training curricula that are better adapted to equip rural youth with the skills required in rural labour markets. These initiatives encourage school attendance, bring direct nutritional and physical development benefits to young children and have long-lasting social, economic and environmental benefits for the community as a whole.

For over three decades, FAO has championed the FSS approach, empowering and educating over 25 million producers across more than 90 countries. This approach has been applied to a wide range of topics including soil health, sustainable crop, water and land management, integrated pest management, livestock and aquaculture systems, agroforestry, nutrition and market access.[2] Through the **Global Farmer Field Schools Platform**, FAO fosters strategic collaboration and innovation among diverse organizations implementing the FFS approach worldwide. This platform plays a pivotal role in ensuring the quality, coherence, and impact of FFS interventions, scaling their contribution to resilient livelihoods, agrifood systems transformation and climate change adaptation.

FAO promotes and has implemented numerous **vocational training initiatives**, focused on equipping young people with the technical and vocational skills needed for employment, decent jobs and entrepreneurship. For example, Junior Farmer Field and Life Schools (JFFLS) equip youth with life skills, agricultural knowledge and business capacities.[3]

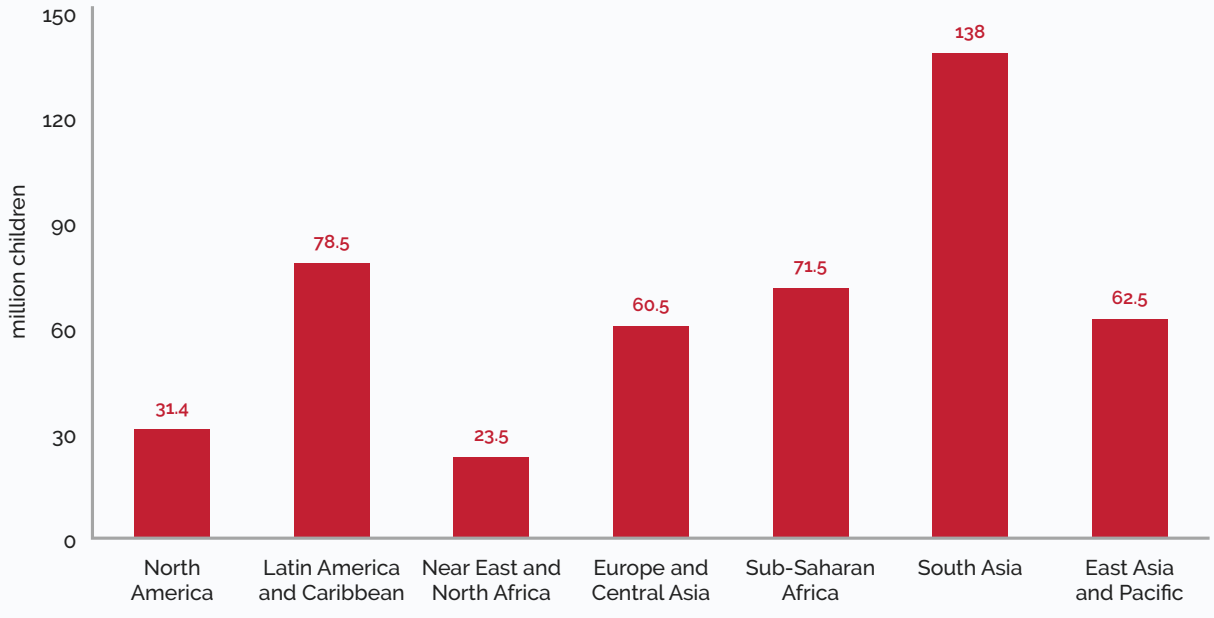
FAO collaborates with **technical and vocational education and training institutions and universities** to generate, translate and disseminate knowledge, modernize agrifood curricula, strengthen research capacities and prepare professionals for green and digital transitions in agrifood systems. These partnerships facilitate the development of curricula focused on food security, sustainable agriculture and rural development. They increase academia's engagement in multistakeholder processes and dialogues on food security and sustainability issues and raise awareness of key initiatives to improve food security and nutrition, reduce rural poverty and achieve the SDGs.

The FAO eLearning Academy emerged as a global leader in digital education in 2020, offering over 1 000 free, multilingual and certified e-learning courses, serving as a global public good, and promoting sustainable agrifood systems and innovative agricultural practices. Created through collaboration with over 1 000 partners, the Academy has reached over one million professionals worldwide, expanding access to employability competencies across sectors and regions. Its mission is to promote universal education and foster gender and social equality. To further support lifelong learning, the Academy is collaborating with hundreds of universities and academic networks to establish Master's and Postgraduate Degree programmes, reinforcing its role in shaping the future of global education. FAO courses are used worldwide by governments to formulate, implement and evaluate policies; by universities to enrich their curricula; and by farmers' organizations, research centres, non-governmental organizations and civil society organizations to strengthen the capacities of their staff.[4]

Data highlights

Despite improvements in education globally over the last several decades, rural youth continue to have lower access to quality formal education compared with their urban peers (SDG Target 4.5):

Figure 11. Number of children receiving school meals, 2024



Source: Adapted from WFP. 2024. *State of School Feeding Worldwide 2024*. Rome. https://doi.org/10.71958/wfp130772

74 percent of rural young people complete lower-secondary education compared with 85 percent of urban young people. Only 20.5 percent of rural girls living in protracted-crisis agrifood systems complete lower-secondary education, compared with over 50 percent of their male and female peers in urban areas, and 98 percent of girls living in industrial agrifood systems.[5]

Globally, **over 20 percent of youth were not in education, employment or training in 2023**, with young women twice as likely to fall into this category.[6]

School meals are a successful policy tool to boost school attendance and learning outcomes to support SDG 4.1. **School feeding programmes can increase enrolment by an average of 9 percent and improve attendance by 8 percent.**[7] Children receiving meals attend school 4–7 more days per year and show better cognitive and learning outcomes.[8]

Before the COVID-19 pandemic, about **388 million schoolchildren received school meals in 161 countries**, making these programmes the most extensive safety net worldwide.[9] **Between 2020 and 2023, national school food programmes reached nearly 80 million additional children, bringing the global total to an unprecedented 466 million.** Low-income countries led this progress with an impressive growth rate of almost **60 percent between 2022 and 2023** (Figure 11).[10]

In many low- and middle-income countries, students who attend schools often leave without the skills required for better remunerated on- and off-farm jobs, creating a disconnect between education and local labour market demand. **Globally, only 13.6 percent of youth have completed vocational education intended to address this skills gaps.**[5]



© FAO/Riccardo Gangale

↑ **Farmer Field Schools (FFS) are not a static approach; more than 35 years since their inception, and with over 25 million producers empowered, they continue to evolve, innovate and respond to global challenges. This transformation has gained new momentum following the launch of FAO's New Ambition for FFS, which aims to scale their impact through: 1) regenerating agroecosystems to enhance resilience and sustainability; 2) unlocking equal opportunities for women, men and youth in agriculture; and 3) nurturing local economies and entrepreneurship to strengthen rural livelihoods. The New Ambition positions FFS not merely as a field-level methodology, but as a scalable, quality-assured learning and convening platform for innovation that connects regenerative production, inclusive local economies and social transformation contributing to multiple SDGs. To achieve this FAO continues to accelerate field action in 75 countries and enrich the global knowledge base through critical resources such as toolkits, robust digital monitoring and evaluation systems, e-learning courses, or piloting the use of AI to support FFS facilitators.**[3]

Key challenges

Education losses linked to child labour in agriculture

Poverty and hunger can push families to rely on child labour. Economic crises, climate change and environmental degradation exacerbate these pressures, for example, extreme temperatures have been found to push children to increase their weekly working time by 49 minutes relative to prime-aged adults.[11] When children work long hours, their opportunity to attend school and develop skills is restricted, reducing their chances of accessing decent and productive employment.

Barriers to education for seasonal workers and their children

Young seasonal migrants and/or the children of seasonal migrant workers may face barriers accessing education, including a need for documentation or the threat of deportation keeping children and youth from enrolling in school; incompatibility of school calendars and admission timing with the working season; and the location of agricultural work, as schools may not be present in remote areas or transportation unavailable.[5]

Education disruption due to crises, conflict and displacement

Armed conflict, climate-induced disasters and other crises are increasingly disrupting schooling. The COVID-19 pandemic caused the largest education crisis in history, with long-term effects on learning loss and dropout rates that are still being recovered. In areas with protracted-crisis, only 50 percent of youth in urban areas complete lower-secondary education, reducing to just 20.5 percent of rural girls.[5] Displacement as a result of conflict, disasters or other crisis poses serious challenges for the education of young people; an estimated 40 percent of the forcibly displaced population globally are under 18, totalling 47 million children and nearly half of school-aged refugees are out of school. Displacement can cause large influxes of children and youth in a short period of time, necessitating urgent action and the allocation of considerable resources. In remote and rural areas, key challenges include the need for parallel systems to educate displaced students, a lack of recognition of previous degrees or courses, teacher shortages, slow recruitment processes, language barriers, trauma, insufficient psychosocial support, teachers without adequate training to deal with displaced populations, social tensions, and prolonged detention or transit zones without access to education while applications are processed.[5, 12, 13]



© Pep Bonet/NOOR for FAO

↑ FAO developed the Sustainable School Methodology to support countries in implementing and strengthening school feeding programmes (SFP) to reduce hunger and improve food security and nutrition. This methodology advances public procurement from family farming into school meals, aligned with dietary guidelines, and aimed at improving the nutritional quality of school menus. It also seeks to increase access to healthy diets, improve infrastructure and financing, promote community participation and healthy food environments and ensure inter-institutional and intersectoral coordination, as well as food and nutrition education. Through the Sustainable School Feeding Network (RAES), 18 countries in Latin America and the Caribbean receive FAO's assistance for SFPs to generate impacts on education, nutrition and rural development, and guarantee the right to adequate food. RAES is coordinated by the FAO-Brazil Cooperation, with support from the Brazilian Cooperation Agency of the Ministry of Foreign Affairs and the National Fund for Education Development, with the executive secretariat led by FAO. Participating countries share experiences through the network for scaling up best practices through South–South and triangular cooperation. The network promotes the Sustainable School Methodology, already present in 23 000 educational facilities of 14 countries, benefiting over 1.6 million children. The model also created 2 300 pedagogical gardens and procured community participation of 15 000 parents and guardians. Overall, 30 countries in Latin America and the Caribbean are implementing SFP's for more than 80 million children; eight have school meals legislation; and six have developed national or local projects with FAO.[14]

Way forward

Scale up school-based food and nutrition education: Holistic and coherent food and nutrition school programmes and policies are key to achieving children's human right to adequate food as well as improving children's health and school performance, as children who are hungry or malnourished cannot take full advantage of their learning opportunities. Investing in improving the nutrition of school-aged children is part of the solution to improving school performance. Schools are golden settings for advancing nutrition and for development, and properly planned and implemented school-based food and nutrition programmes can tackle malnutrition and other development challenges, yielding multiple benefits across the SDGs. Within these programmes, school feeding is an opportunity not only to improve the nutrition situation but also to improve school attendance and educational outcomes.



© FAO/Riccardo De Luca

↑ FAO aims to inspire and equip the next generation of leaders to drive the transformation of agrifood systems and is guided by its *Strategic Framework 2022–2031*. This framework is built around the *four betters – better production*, *better nutrition*, a *better environment* and a *better life*, leaving no one behind, which together represent a comprehensive approach to achieving sustainable development. The 'FAO Four Betters Courses initiative' , launched during the World Food Forum 2024, seeks to align university curricula with these ambitious transformative goals by integrating FAO elearning Academy courses and related knowledge assets, therefore fostering a closer integration between academic curricula and the practical skills and competencies needed to address the complexities of the agrifood sector. Through this initiative, FAO strives to enhance education standards, enrich academic programmes and prepare students with the practical knowledge and competencies needed to address the complex challenges facing global agrifood systems today.

Expand agrifood systems-related training for youth: Expanding practical and relevant training opportunities is central to enabling young people to participate meaningfully in agrifood systems transformation. Vocational and on-the-job programmes, business incubation and entrepreneurship support can equip youth with the skills and confidence needed to join and shape evolving agrifood value chains. Strengthening collaboration between education systems and agrifood employers helps to align training content with the labour-market and innovation needs. Non-formal and lifelong learning models, such as FFS, offer field-based, experiential learning adaptable to all ages and contexts, providing flexible pathways for youth to build competencies and pursue opportunities in agrifood systems.

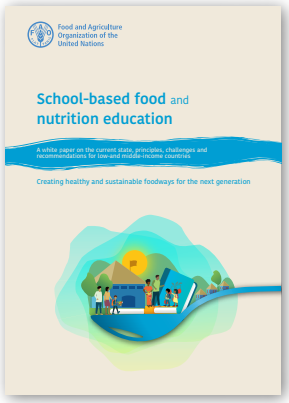
Promote skills development for agrifood jobs: Strengthening the skills of young people entering agrifood systems is essential for expanding their opportunities and improving livelihoods. This involves building both technical skills in areas such as agronomy, processing and information and communications technology for agriculture, and soft skills including leadership, communication and problem solving. Farmer centred learning approaches, such as FFS and JFFLS, help build ecological literacy, analytical capacity and collective decision-making and should be institutionalized. It is also important to foster youth agency and leadership through peer-to-peer learning, mentorship and youth adult partnerships that strengthen confidence and life skills. Embedding capacity development across education, health and agriculture, and grounding it in needs assessments, mentoring and practical training rather than short or isolated workshops, can create a more coherent and effective foundation for young people to thrive in agrifood jobs.

Empower community-based learning and innovation: The prevailing tendency of agrifood innovation systems and development projects is to operate in a top-down manner, privileging technological solutions from high-income regions while offering limited recognition and support to farmer-led or community-based innovations. This imbalance limits empowerment, sidelines marginalized groups and contributes to the persistence of global inequalities. Moving forward, participatory and context-sensitive education and training systems are essential to ensure that local knowledge, community innovation and traditional practices inform and shape agrifood systems transformation.

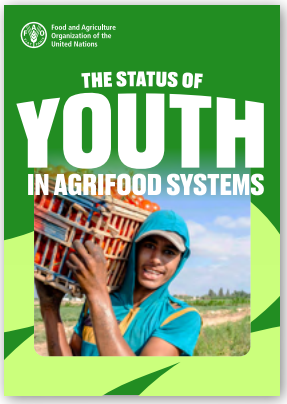
Ensure inclusive and gender-transformative education and training: Creating inclusive learning programmes that empower girls, rural youth and marginalized groups is essential for expanding opportunities and strengthening participation in agrifood systems and requires combining technical training with life-skills education. Gender-transformative and community-based approaches (such as FAO's Dimitra Clubs, Reflection-Action Circles) help to increase the participation of young women and girls in education and community decision-making. Embedding equity and inclusion principles in teacher training, curriculum design and local learning materials can ensure that learning environments are supportive, responsive and accessible to all learners.

Embed sustainability and agrifood systems literacy across curricula: Integrating sustainability and agrifood systems literacy into school curricula helps to build understanding of the links between agriculture, environment, health and consumption. Introducing hands-on, context-based learning through school gardens, nutrition clubs and field experiments can nurture responsible production and consumption habits from an early age. Within FFS, agrifood system analysis and participatory experimentation can help to foster ecological literacy and collective problem-solving for sustainable agriculture.

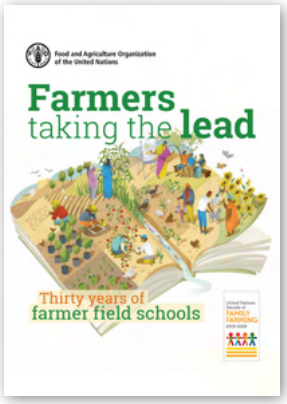
Learn more



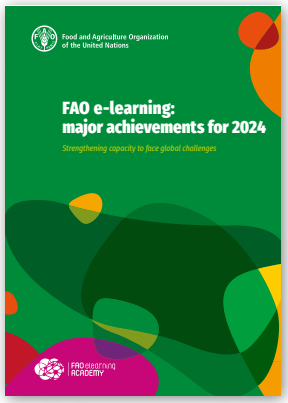
School-based food and nutrition education



The Status of Youth in Agrifood Systems



Farmers taking the lead: 30 years of Farmer Field Schools



FAO elearning: major achievements for 2024

Notes:

1 **UNICEF, WHO & World Bank Group.** 2025. *Levels and trends in child malnutrition: UNICEF/WHO/World Bank Group joint child malnutrition estimates: key findings of the 2025 edition.* New York, USA. https://www.who.int/publications/i/item/9789240112308

2 **FAO.** n.d. *Global Farmer Field School Platform.* [Cited September 2025.] https://www.fao.org/farmer-field-schools/home/en/

3 **FAO.** 2022. *TECA – Technologies and Practices for Small Agricultural Producers.* [Cited September 2025.] https://teca.apps.fao.org/en/technologies/10090/

4 **FAO.** 2025. *FAO eLearning Academy: major achievements for 2024 – Strengthening capacity to face global challenges.* Rome. https://doi.org/10.4060/cd4121en

5 **FAO.** 2025. *The Status of Youth in Agrifood Systems.* Rome. https://doi.org/10.4060/cd5886en

6 **ILO.** 2022. *Global Employment Trends for Youth 2022 - Investing in transforming futures for young people.* Geneva. https://doi.org/10.54394/QSMU1809

7 **UNESCO, UNICEF & WFP.** 2023. *Ready to learn and thrive: School health and nutrition around the world.* Paris. https://www.wfp.org/publications/ready-learn-and-thrive-school-health-and-nutrition-around-world-2023

8 **WFP.** 2019. *The Impact of School Feeding Programmes.* Rome. https://executiveboard.wfp.org/document_download/WFP-0000110058

9 **FAO.** 2021. *Investing in the food and nutrition of all children is a human rights issue.* [Cited September 2025.] https://www.fao.org/right-to-food/news-and-events/news/news-detail/Investing-in-the-food-and-nutrition-of-all-children-is-a-human-rights-issue/en

10 **WFP.** 2024. *State of School Feeding Worldwide 2024.* Rome. https://doi.org/10.71958/wfp130772

11 **FAO.** 2024. *The unjust climate – Measuring the impacts of climate change on rural poor, women and youth.* Rome. https://doi.org/10.4060/cc9680en

12 **UNHCR.** 2025. *Refugee data finder.* [Cited March 2025.] www.unhcr.org/refugee-statistics

13 **UNHCR.** 2023. *Unlocking potential: The right to education and opportunity.* New York, USA. www.unhcr.org/media/unhcr-education-report-2023-unlocking-potential-right-education-and-opportunity

14 **FAO, ABC/MRE & FNDE/MEC.** 2022. *Situational state of Sustainable Schools 2021: Executive summary.* Brasilia. https://doi.org/10.4060/cc0679en

Food and Agriculture Organization of the United Nations



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FAO and SDG 5: Achieve gender equality and empower all women and girls

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Women perform key roles in agrifood systems, contributing significantly to agricultural production, processing and retail, off-farm agrifood system employment, natural resource management, and unpaid domestic and care work. Their knowledge and labour contribute significantly to food security, nutrition, biodiversity, climate action and rural development in general. Despite these essential contributions, women continue to face systemic barriers, including limited access to and control over land, credit, education and technology. Addressing these inequalities is essential to uphold women's rights and unlock their potential to drive inclusive growth, resilience and sustainable development.

The Food and Agriculture Organization of the United Nations (FAO) is committed to addressing gender gaps in agrifood systems and promoting gender equality and women's empowerment as a key driver of resilient and inclusive rural economies. The *FAO Policy on Gender Equality 2020–2030* provides a framework to guide the Organization in aligning its technical and normative work with clear gender equality objectives relevant to its mandate. This work on *Gender equality and rural women's empowerment* is a Programme Priority Area under *FAO's Strategic Framework 2022–2031*.

Among its many actions to advance Sustainable Development Goal (SDG) 5, FAO focuses on improving women's access to and control over productive resources – such as land, inputs, credit and technology, including information and communications technologies – and on strengthening their participation in decision-making processes. To support these efforts, *The status of women in agrifood systems* (SWAF) 2023 report compiles the most up-to-date evidence on the remaining challenges and policy solutions to close gender gaps and accelerate progress on women's empowerment and gender equality in agrifood systems.

FAO has also developed tools such as Gender-Lex, a cross-cutting thematic database which facilitates access to national and international legal and policy instruments on gender equality in areas under FAO's mandate.

Furthermore, FAO provides **technical support to governments and parliaments** to develop gender-responsive public policies and programmes, establish sex-disaggregated statistics and implement initiatives that address gender gaps in food security, nutrition, poverty and climate resilience. Central to this support are the SDG 5.a.2 legal assessments and policy dialogues, which mobilizes key stakeholders around the major areas in FAO's mandate and offers a direct entry point to address gender inequalities through sectoral laws and policies.



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↑ **In Burkina Faso, the FAO Forest and Landscape Restoration Mechanism promotes gender equality and inclusivity by offering training programmes that empower women in sustainable land management. These initiatives not only boost women's livelihoods but also ensure their active participation in decision-making processes regarding land use.**

At the field level, FAO has supported Kenya and Uganda through Flexible Voluntary Contribution Sub-Programmes, achieving significant results through integrated, context-specific approaches. These include the Women's Empowerment Farmer Business School, designed to strengthen women's agency, entrepreneurial skills and market access. Complementing this, a social and behaviour change strategy employs locally tailored tools such as participatory radio dramas, culturally relevant jingles, Talking Books in Kenya and Dimitra Clubs in Uganda. Through collective action and household and community dialogues, these gender-transformative approaches challenge discriminatory norms and promote more equitable attitudes and practices at the individual, household and community levels.

To promote action around the recommendations of the SWAF report in 2024, FAO launched "**Commit to Grow Equality**", the first multistakeholder initiative to directly highlight the role of women in agrifood systems. The initiative aims to enhance efforts to achieve SDG 5 in the remaining five years of the 2030 Agenda. Bringing together governments, philanthropy, the private sector, the United Nations and other multilateral agencies, civil society organizations and others, the initiative seeks to mobilize investments, partnerships and actions for making agrifood systems work better for women. As part of this initiative, FAO has committed to tracking gender-transformative actions in all its projects and ensuring that 10 percent are tagged as gender-transformative by 2030.

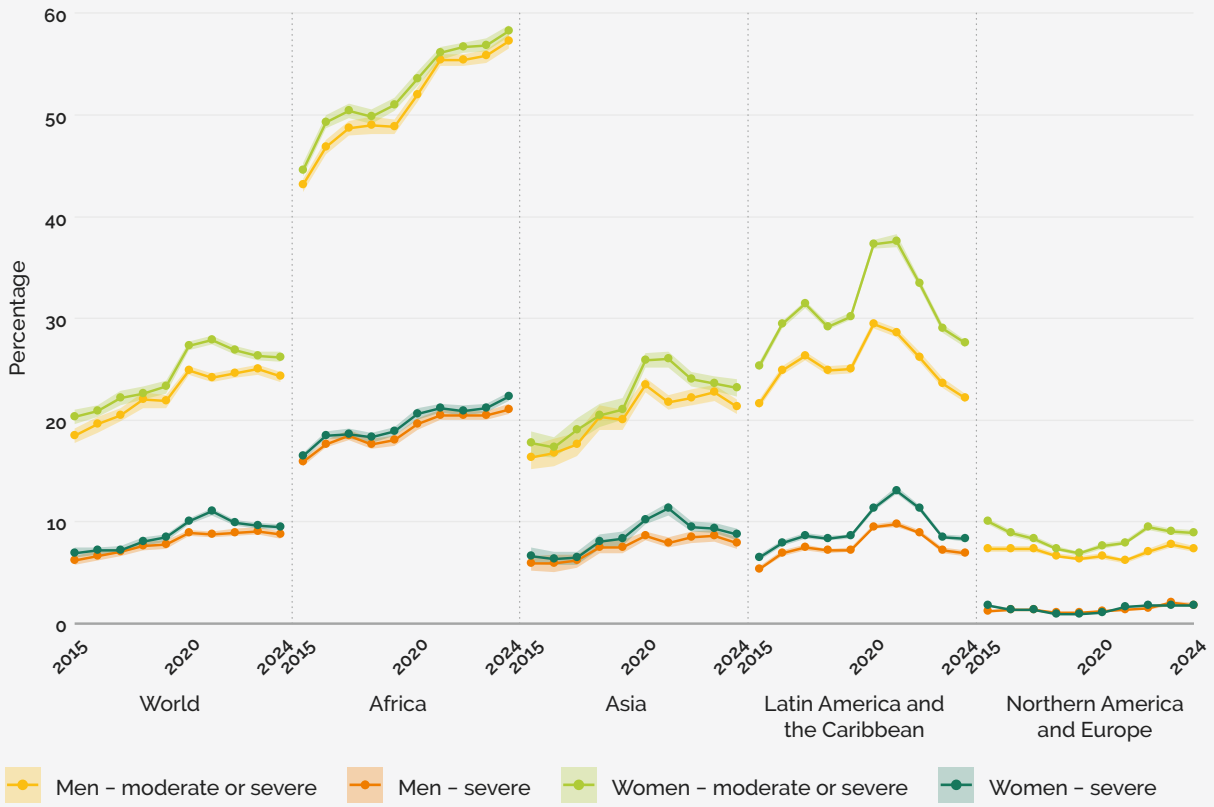
FAO has also launched a programme to promote the dissemination and uptake of the *Committee on World Food Security Voluntary guidelines on gender equality and women's and girls' empowerment in the context of food security and nutrition* in 10 countries by 2026 - a key policy instrument for strengthening the gender-responsiveness of policies, strategies and programmes. In 2026, FAO will also introduce a dedicated gender domain in its statistical database FAOSTAT. This platform will provide open access to all available data on critical dimensions of gender equality and women's empowerment in agrifood systems, including women's work, training and asset ownership, as well as data on women's food security and nutrition. Improved data availability and accessibility will increase visibility of existing gaps and support evidence-based actions to close them.

Data highlights

There are persistent gaps in progress towards the achievement of SDG 5. Women remain concentrated in informal, part-time and low-paid employment, earning significantly less than men, and continue to have limited influence in decision-making positions across agrifood value chains (SDG Target 5.5). There remains major barriers to women's equal rights to economic resources, including ownership and control over land, access to financial services (SDG Target 5.a) and access to agricultural technologies (SDG Target 5.b). These inequalities are often rooted in discriminatory norms, legal frameworks and policies that restrict women's access to the resources and opportunities essential for empowerment and economic participation (SDG Target 5.1).

Agrifood systems are major employers of both women and men. Globally, women account for 39 percent of all agrifood systems workers: 38 percent of agricultural workers and 41 percent of off-farm agrifood systems workers.[1] In the fisheries and aquaculture sector, women represent 21 percent of the primary production workforce but nearly half of the total workforce across the entire aquatic value chain. In both agriculture and aquaculture, women are significantly more likely than men to work part-time, in informal and vulnerable positions and face higher job insecurity, with negative impacts on income, well-being and food security.[2]

Figure 12. The prevalence of food insecurity among women and men across all regions, 2015-2025



Source: FAO, IFAD, UNICEF, WFP and WHO. 2025. *The State of Food Security and Nutrition in the World 2025 – Addressing high food price inflation for food security and nutrition.* Rome. https://doi.org/10.4060/cd6008en

Women engaged in waged agricultural employment earn 82 cents for every dollar earned by men.[2]

Beyond restricting women's economic opportunities, persistent structural barriers also hinder their access to and control over land, education, technology, and finance.

Across the 91 countries reporting on SDG 5.a.2, protections for women's land rights are absent or limited in 49 percent of them, with corrective measures to promote women's land rights generally lacking. 38 percent of reporting countries do not guarantee equal inheritance rights and only one-third require jointly owned land to be registered in the names of both spouses, with far lower rates in sub-Saharan Africa (25 percent) and Western Asia (8 percent). By contrast, 56 percent of countries require spousal consent for transactions involving jointly held land, a safeguard that is widespread across Europe, Asia, sub-Saharan Africa, and Latin America and the Caribbean. In many contexts the recognition of customary tenure systems does not adequately guarantee gender equality in land rights. Among the 45 countries recognizing customary law or tenure, only 25 establish that gender equality or non-discrimination prevails in cases of conflict.[3] Despite these challenges, progress has been made over the past decade, with significant increases in women's land ownership in several countries in sub-Saharan Africa.[4]

Figure 13. Gender disparities in access to agrifood resources across countries where data is available; comparative analysis of men's vs women's access



Note: This graph presents a comparative analysis of gender disparities in access to key agrifood resources across countries where sex-disaggregated data is available. The values reflect the percentage point difference in access between men and women. Positive values (shaded in orange) indicate where men have greater access to the resource compared to women, while negative values (shaded in blue) indicate that women have greater access than men. The darker the shading, the greater the disparity in access.

Source: Author's own elaboration based on data from FAO. 2025. *RuLIS*. [Accessed in March 2025.] *https://www.fao.org/in-*

> Land ownership inequalities reduce women's income by limiting their access to finances and extension services, their economic security and therefore their resilience to shocks. In nearly half of countries with available data, small-scale food production units headed by women **earn less than 70 percent of the income earned by male-headed units.**[5]

Education gaps remain significant, with the largest disparities among the poorest households and in rural areas. In a sample of 20 countries, **fewer than 1 percent of poor rural women completed secondary education, creating a fundamental barrier to women's empowerment.**[2]

Systematic gender gaps in access to agricultural inputs and technologies continue to constrain women's productivity and economic potential (Figure 13). Women in agriculture still have significantly less access to inputs than men, including to improved seeds, fertilizers and mechanized equipment – in fact **the gender gap in mechanization remains unchanged or has widened** over the past 20 years.[6] Women frequently receive information about new agricultural technologies indirectly, delaying adoption, and remain **under-served by extension and advisory services**.

Additionally, across all regions, women have less access to financial services than men, limiting their ability to pursue economic opportunities, generate income, save and accumulate assets and build economic security and resilience. Barriers include lack of income or assets useable as collateral, lack of specific training and education needed to run businesses, and gender-discriminatory social norms and practices. However, the gender gap is closing in relation to mobile internet access – dropping from 25 percent to 16 percent between 2017 and 2021 – and in access to bank accounts.[2]

Empowering women in agrifood systems is not just a matter of fairness, it is an economic imperative. **Closing the gender gap in farm productivity and the wage gap in agrifood system employment could boost global gross domestic product by nearly USD 1 trillion and reduce food insecurity for 45 million people.**[2]



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↑ The Inclusive Dairy Value Chain Development Project, implemented by FAO in partnership with the European Bank for Reconstruction and Development in Kazakhstan, utilized a mobile app called Collect Mobile to help smallholder farmers meet industry standards and improve supply chain management. This initiative is part of FAO's broader efforts to generate and disseminate knowledge on gender-responsive digital and mechanization solutions through evidence-based projects, strategic partnerships, and targeted technical assistance. By documenting good practices and lessons learned, FAO contributes to a growing body of knowledge on how digital tools and labour-saving technologies can effectively reach and benefit rural women.

Key challenges

Climate change pressures deepen gender gaps in income, resilience and adaptive capacity

Gender inequality significantly impacts women's ability to adapt to climate change. Women farmers and low- and middle-income, female-headed households experience greater income losses from climatic shocks – including heat stress and flooding – than male-headed households, by 8 percent and 3 percent respectively, resulting in billions of dollars lost annually. Climate change also further intensifies women's already heavy work and care burden.[7] A 1 °C increase in long-term average temperatures correlates with a 34 percent reduction in the total income for female-headed households compared to male-headed households.[7] This heightened climate vulnerability stems from entrenched social structures, discriminatory norms and institutional barriers that limit women's access to resources, income opportunities, extension and financial services in rural areas, as well as women's disproportionate responsibility for unpaid domestic and care work. Effective climate policies must prioritize gender equality and women's empowerment, with particular attention to young women and those belonging to marginalized groups, including Indigenous women, women with disabilities and elderly women.

Conflict driven food insecurity disproportionately affects women and girls

Conflict and protracted crises remain the main drivers of food insecurity. Their impacts are highly gendered: women and girls are disproportionately affected by humanitarian emergencies and displacements. Evidence indicates that in 2023, one in four women and girls experienced moderate or severe food insecurity, rising to one in two women and girls suffering from food insecurity in conflict-affected areas.



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↑ FAO implements projects in various countries which aim to provide better training and capacity building for women, as well as help them gain access to technologies, extension and financial services, to improve their resilience to climatic and other shocks. For example, a farmer field school project in the Churia Region, Nepal, funded by the Green Climate Fund and implemented by FAO together with the Government of Nepal, focuses on enhancing women's adaptive capacity, through trialling climate resilience techniques and crop varieties to help improve yields and reduce water use as well as produce inputs such as fertilizers on-farm.

Way forward

Scaled-up gender transformative approaches: To address the structural barriers that women encounter in agrifood systems, proven interventions need to be upscaled to address gender-based constraints in assets, services, work and productivity, while also transforming discriminatory social norms, policies and laws that perpetuate gender inequality. Research demonstrates that these interventions are both cost-effective and yield high returns.

Enhance data collection: Despite progress, major gaps remain in the availability of policy-relevant data on women's access to resources and services, nutrition, and climate-change adaptation and resilience. Stronger investments are needed to improve the collection and analysis of data disaggregated by sex, age, socioeconomic status, ethnicity, indigenous identity, disability, geographic location and other intersecting inequalities.



© FAO/Andrew Esiebo

↑ FAO Dimitra Clubs exemplify effective gender transformative interventions serving as safe platforms for discussion, problem-solving and collective action at a community level, enabling women to become key agents of change in the development of their communities. Men, community leaders and local authorities are also engaged as crucial allies in advancing gender equality, fostering collaboration and mutual understanding within communities. The clubs typically address issues related to improving rural livelihoods and driving social change, including tackling gender-discriminatory norms and gender-based violence. Achievements include the recognized participation of women in local decision-making, shifts in gender roles and improved household relationships. Between 2018 and 2025, FAO successfully integrated this community-led, gender transformative approach into more than 100 country projects across 20 countries. Over 11 800 Dimitra Clubs, involving 350 000 members, have indirectly benefited 12 million rural people. Dimitra Clubs have contributed to improved food security and nutrition, enhanced climate resilience, strengthened social cohesion and the empowerment of women and girls – while also challenging harmful social norms that perpetuate gender inequality.



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↑ **Representatives from National Statistical Offices and Ministries of Agriculture participate in a training session as part of the GIZ-FAO Partnership on Land Rights for Women in the Western Balkans. This training was part of a series of sessions, held from April to July 2024, aimed to enhance data collection and analysis for SDG Indicator 5.a.1 and 5.a.2, supporting gender-responsive land policies across Albania, Bosnia and Herzegovina, Kosovo, North Macedonia, Montenegro and Serbia.**

Secure tenure and land ownership: Strengthening women's rights to own or have secure tenure rights yields positive impacts on empowerment, investment, natural resource management, access to services and institutions, resilience and food security, increasing women's bargaining power. Urgent action is needed to collect, analyse and use sex-disaggregated data to assess men's and women's access to and control over land, and to review and repeal discriminatory provisions in land, family and inheritance laws, to formulate and implement evidence-based laws, policies and strategies. Complementary actions are also needed, including the allocation of dedicated resources, raising awareness of national and local formal and informal institutions, strengthening women's legal literacy and access to justice - for example through access to community-based legal aid - and ensuring women's meaningful participation and leadership in local land institutions and land governance processes.

Access to agricultural extension and advisory services: Targeting both women and men in extension services is a promising approach towards strengthening women's access to training and information, with positive impacts for on-farm productivity, maximizing food security and nutritional outcomes. Service design must address women's constraints related to time, mobility and education, ensuring that extension and advisory services respond to their needs and priorities.

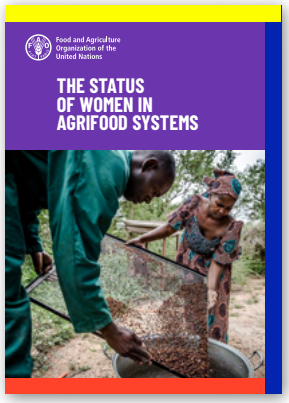
Gender responsive financial mechanisms: Adequate policies, regulations and gender transformative business models that ensure women's financial inclusion in agrifood systems are essential. In addition, as outlined in FAO's *Rural women and financial inclusion – Technical Guidance Note*, there is a critical need to strengthen women's financial literacy, entrepreneurial skills and decision-making capacity. Building these capacities will enable women to access and

manage financial resources effectively, participate meaningfully in value chains, adopt innovative technologies, and scale up their enterprises. This strengthens their overall economic security, including their capacity to secure and maintain land ownership.

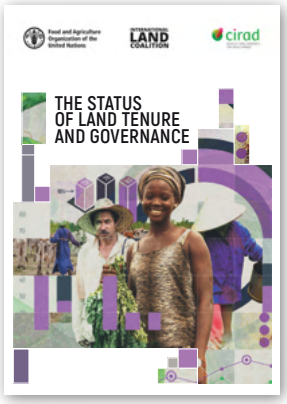
Expand access to gender-responsive digital solutions and labour-saving technologies: Strengthening women's access to digital solutions and labour-saving practices and technologies can improve efficiency and income, reduce time burdens, and enhance quality of life, thereby enhancing women's empowerment. Enhancing access requires supportive policies, financial and delivery models that reduce cost barriers and align with women's needs as well as targeted skills development.

Social protection: Social welfare programmes increase women's employment opportunities, strengthen women's resilience and support the equitable redistribution of unpaid domestic and care work. By improving economic security, these initiatives help prevent distress land sales during crises and facilitate climate adaptation and recovery from economic and climatic shocks. Inclusive programme design can also support rural women with disabilities or those caring for family members with disabilities by reducing financial vulnerability, improving access to services and recognizing caregiving responsibilities.

Learn more



The status of women in agrifood systems



The status of land tenure and governance



Towards digital inclusion in rural transformation



Development finance for gender equality and women's empowerment in agrifood systems

Notes:

1 **Costa, V., Piedrahita, N., Mane, E., Davis, B. & Slavchevska, V.** 2025. Global Estimates of Women's and Men's Employment in Agrifood Systems from 2000 to 2021. *Global Food Security*, 48: 100904.

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

3 **FAO, ILC & CIRAD. 2026.** *The status of land tenure and governance.* Rome and Paris. https://doi.org/10.4060/cd8473en

4 **FAO.** 2024. Indicator 5.a.1 - (a) Percentage of people with ownership or secure rights over agricultural land (out of total agricultural population), by sex; and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure. In: *SDG Indicators Data Portal.* Rome. https://www.fao.org/sustainable-development-goals-data-portal/data/indicators/5a1-women-ownership-of-agricultural-land/en

5 **FAO.** 2024. Indicator 2.3.2 Average income of small-scale food producers, by sex and indigenous status. In: *SDG Indicators Data Portal.* Rome. https://www.fao.org/sustainable-development-goals-data-portal/data/indicators/average-income-of-small-scale-food-producers-by-sex-and-indigenous-status/en

6 **FAO.** 2025. *RuLIS.* [Accessed on 20 March 2025.] https://www.fao.org/in-action/rural-livelihoods-dataset-rulis/en. Licence: CC-BY-4.0.

7 **FAO.** 2024. *The unjust climate – Measuring the impacts of climate change on rural poor, women and youth.* Rome. https://doi.org/10.4060/cc9680en

Food and Agriculture Organization of the United Nations



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FAO and SDG 6: Ensure availability and sustainable management of water and sanitation for all

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Water underpins food security, nutrition, rural livelihoods and ecosystem health, however population growth, economic development and climate change are placing increasing demand on already limited water resources.

By 2050, food production must increase by 50 percent compared with 2012 levels to meet the needs of the growing world population, further intensifying pressures on water.[1] The way water resources are governed and managed will determine whether agrifood systems can meet rising demands without undermining the environment.

Sustainable Development Goal (SDG) 6 calls for universal access to and sustainable management of water and sanitation, (SDG Targets 6.1 and 6.2), improved water quality and reduced pollution (SDG Target 6.3), greater water-use efficiency and sustainable withdrawals (SDG Target 6.4), integrated water resources management and transboundary cooperation (SDG Target 6.5), and the protection of water-related ecosystems (SDG Target 6.6). Agrifood systems are essential to achieving these targets: they are the major users by far of freshwater resources, shape how it is used and can offer solutions for sustainability and resilience.

Access to safe water, sanitation and irrigation remains deeply unequal in rural areas of low- and middle-income countries. Women and girls disproportionately bear the responsibility for

collecting water due to prevailing gender norms, often at the cost of their education, safety and livelihoods. Water insecurity directly affects household health and nutrition, with children, pregnant women and the elderly particularly vulnerable. Gender inequalities in land rights limit women's water rights and access to irrigation technologies. Although water user groups and community-based management are common, women's participation remains low, and few countries have developed gender-responsive water policies. These disparities constrain productivity, resilience and empowerment, and slow progress towards inclusive water governance.[2]

The Food and Agriculture Organization of the United Nations (FAO) plays a pivotal role in advancing SDG 6 through:

Water resource and use monitoring: FAO serves as custodian for two SDG 6 indicators critical to agriculture: 6.4.1 – Change in water-use efficiency, and 6.4.2 – Level of water stress. In line with this, it collects and provides access to data monitoring the availability and use of water resources under FAO's Global Information System on Water and Agriculture (AQUASTAT). It develops water accounting methodologies, trains national experts and strengthens integrated water monitoring systems enabling evidence-based policy and investment decisions worldwide. FAO also produces flagship knowledge products such as *The State of the World's Land and Water Resources for Food and Agriculture* (SOLAW), using the water data collected through AQUASTAT.

Governance: FAO supports stronger water governance by helping countries build enabling environments that make water management more effective, equitable and sustainable. FAO supports integrated water resources planning and builds the capacity of water institutions including water user associations. Through the *Global Dialogue on Water Tenure*, FAO convenes governments, research institutions and other stakeholders to clarify concepts and assess existing tenure arrangements. FAO also promotes inclusive participation by women, youth and Indigenous Peoples in agricultural water management.



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↑ The Integrated Monitoring Initiative for SDG 6 (IMI-SDG6) is a partnership between eight UN agencies, including FAO. It was established at the beginning of the 2030 Agenda period, to accelerate the achievement of SDG 6. IMI-SDG6 supports countries to collect, analyse and report SDG 6 data and assists policy and decision-makers to use this data for better policymaking and investments. To this end, the initiative creates guides, organizes training and develops methodologies for contextualized and disaggregated data and information.

It helps modernize irrigation governance, design tools for decision-making and supports governance of groundwater and water quality by strengthening policies, standards, monitoring and regulations.

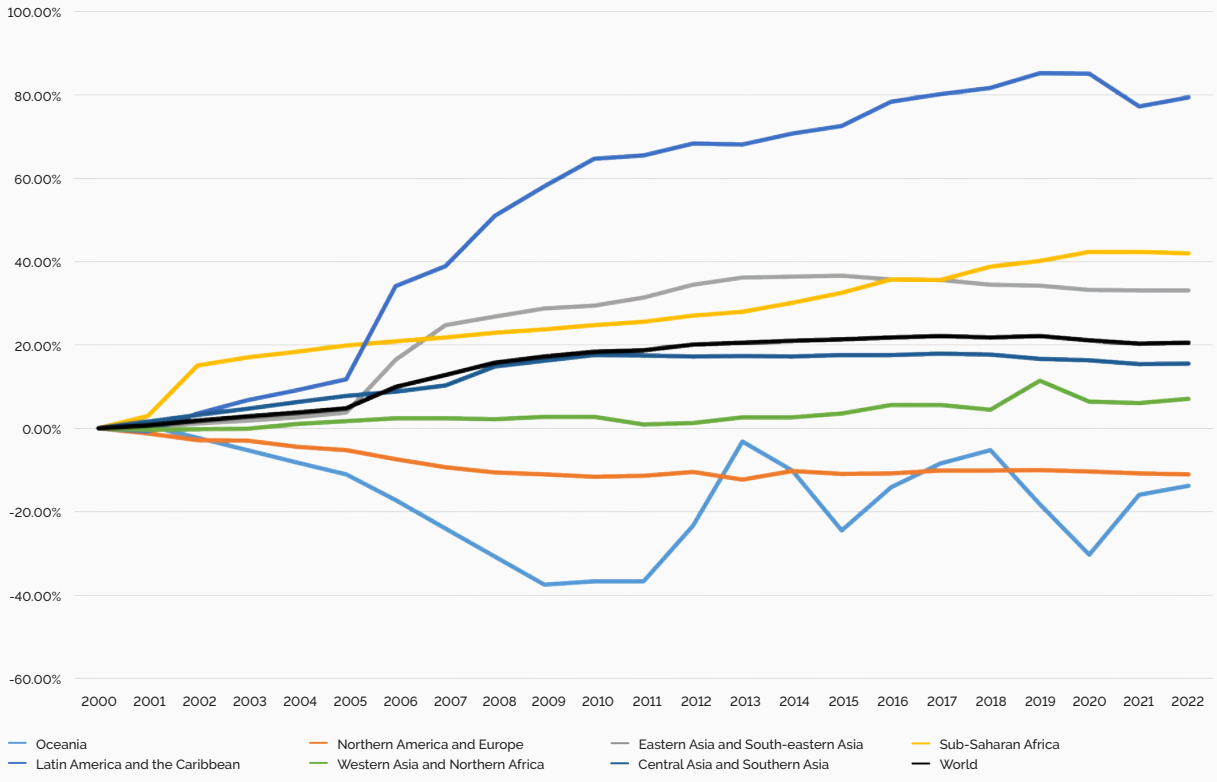
Innovation and technology: FAO advances innovation in efficient irrigation, wastewater reuse, nature-based solutions, and the use of remote sensing for water monitoring to enhance sustainable use and protect water ecosystems. This work contributes to the objectives of the Programme Priority Area *Innovation for sustainable agriculture production* under the *FAO Strategic Framework 2022–2031*.

Partnerships and global engagement: FAO is an active member of UN-Water, contributing to the *UN World Water Development Report* and global water governance processes. FAO hosts the *Global Framework on Water Scarcity in Agriculture* (WASAG) which convenes governments, research institutions and international organizations to develop tools and solutions to reduce water scarcity in agriculture. It also supports the implementation the Convention on Biological Diversity, Convention to Combat Desertification and Convention on Climate Change, on water–climate–ecosystem linkages.

Data highlights

Agriculture accounts for more than 70 percent of global freshwater withdrawals,[3] with groundwater withdrawals for irrigated agriculture reaching 820 km³ in 2018 (up from 688 km³ in 2010). This represents over 30 percent of agriculture's total freshwater use. This figure continues to grow at 2.2 percent annually, reflecting growing pressure on groundwater resources (Figure 14).[4]

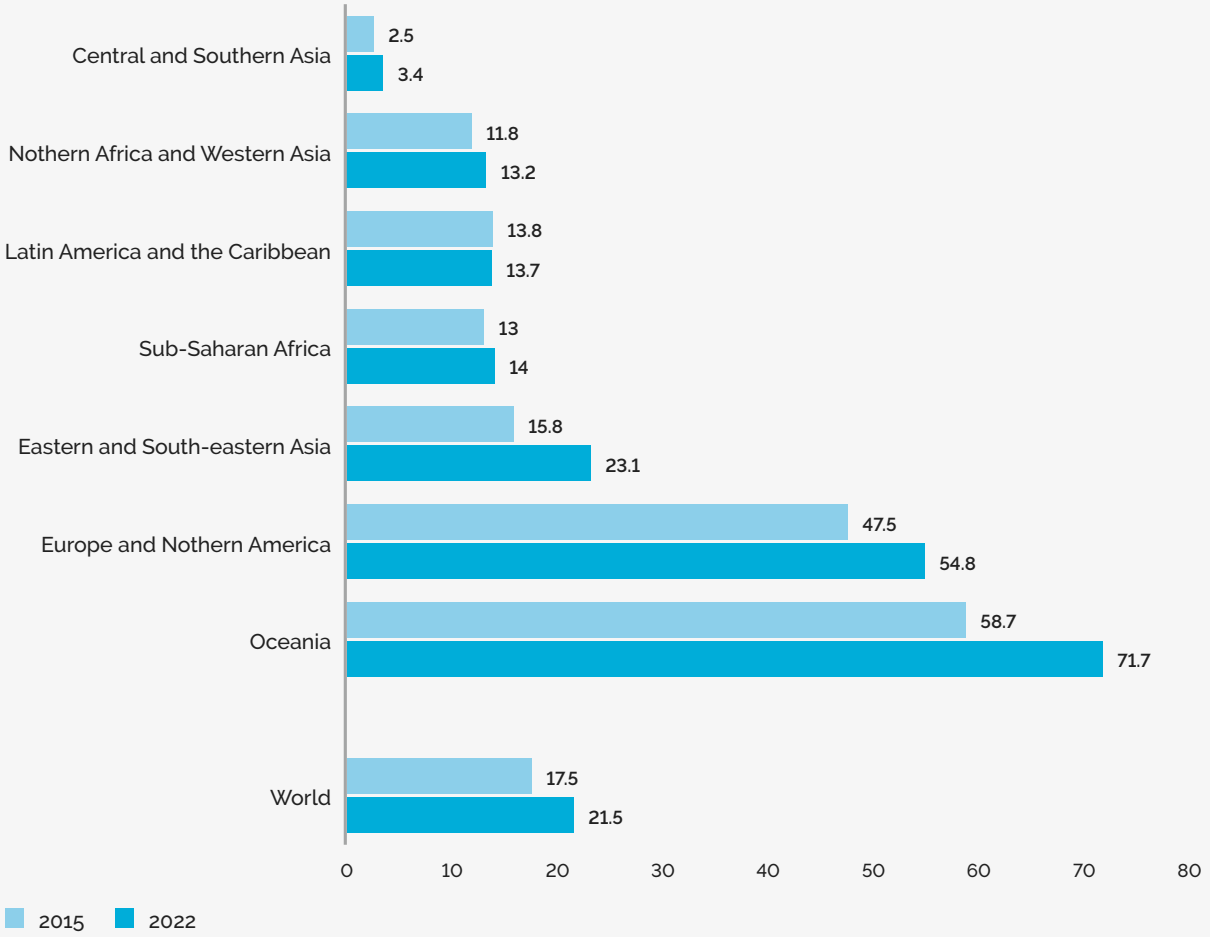
Figure 14. Change of agricultural water withdrawal by region



Note: The graph indicates total water withdrawal for use by the agricultural sector since 2000 as a percentage (water withdrawal in a given year minus baseline water withdrawal divided by baseline water withdrawal).

Source: Authors' own elaboration, based on data from AQUASTAT: *Total water withdrawal indicators*. [Accessed in October 2025.] *https://www.fao.org/aquastat/en/*. Licence: CC-BY-4.0.

Figure 15. Water-use efficiency, 2015-2022 (dollars/m3)



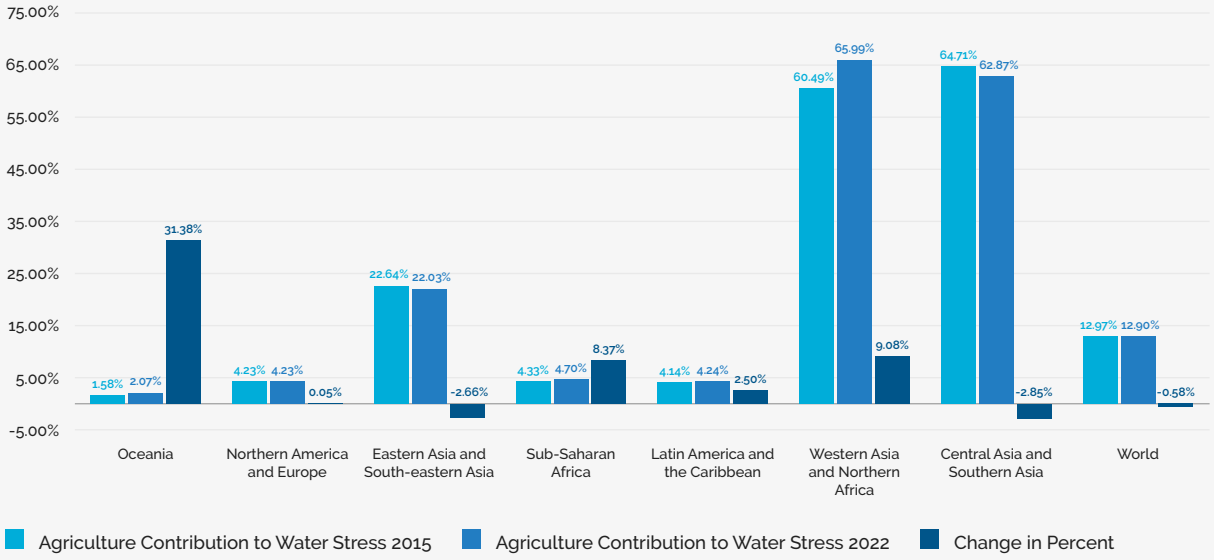
Source: Adapted from United Nations. 2025. *The Sustainable Development Goals Report 2025*. New York. *https://unstats.un.org/sdgs/report/2025/*

Irrigated croplands produce 48 percent of all crops in value terms, indicating that irrigated land is 3.2 times more productive than rainfed land in value terms. On average, the yield of irrigated land is 76 percent higher than that of rainfed land.[3] However, nearly 84 percent of smallholder farms in low- and middle-income countries are located in water-scarce regions, and fewer than one-third have access to irrigation.[5] **10 percent of the global irrigated land area receives untreated or partially treated wastewater**, covering than 30 million hectares in 50 countries. Wastewater used for irrigation is one of the significant drivers of diffuse soil pollution.[4]

Between 2015 and 2022, global water-use efficiency increased by 23 percent, rising from USD 17.5 to USD 21.5 m³ (Figure 15), however more than half of countries still operate below the global benchmark of USD 20/m³.[6]

Global water stress has remained unchanged since 2015 at 18 percent and within this, agriculture's contribution to global water stress has reduced only slightly from 12.97 percent in 2025 to 12.90 percent in 2022. But regional disparities are stark: twenty-five countries, representing one-quarter of the global population, face extremely high water stress every year (Figure 16).[7,8] Water use patterns vary by income level, with lower-income countries using up to 90 percent of their water for agriculture, while higher-income countries allocate more to industry.[9]

Figure 16. Agriculture's contribution to water stress; comparison of 2015 and 2022



Source: Author's own elaboration, using data AQUASTAT: SDG 6.4.2 *Water Stress*. [Accessed in October 2025.] *https://data.apps.fao.org/aquastat/*. Licence: CC-BY-4.0.

Key challenges

Climate change reduces water availability and increases water related risks

Rising temperatures, erratic rainfall patterns and extreme weather events impact water resources and cause flooding and drought. On average, approximately 10 percent of the global population live in countries with high and critical water stress levels.[10] Intensifying seasonal variability and uncertainty in water availability is compounding the issue, increasing pressure on groundwater resources,[11] and directly exposing 1.81 billion people to floods, which threaten water access, quality and infrastructure.[12] There is also evidence that melting glaciers and reduced snow cover has led to reduced water availability for irrigation, lowering agricultural yields in several mountain localities.

Agricultural pollution undermines safe water quality for people and ecosystems

Water quality is critical for food production and human and ecosystem health. Agricultural pollution, salinization and a lack of adequate wastewater treatment transforms water from a resource into a hazard, particularly in many low- and middle-income countries. Agriculture, as the largest water user, is both a cause and victim of water pollution. Pesticide and fertilizer contamination are among the most significant challenges to achieving safe water quality.[13]

Fragmented water governance limits progress on sustainable water management

Weak cross-sector coordination and limited transboundary cooperation continue to undermine progress on SDG 6. Only a small number of countries have their transboundary basin area covered by operational arrangements, leaving major gaps in collective water management.[14] At the same time, rigid tenure systems constrain adaptive and inclusive governance, highlighting the need for transformative changes in policy, institutions and technical approaches.



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↑ The Global Framework for Action to Cope with Water Scarcity in Agriculture in the Context of Climate Change (WASAG) brings together key global players from different sectors to tackle the interconnected challenges of water, food and climate. Hosted by FAO, it consists of governments, intergovernmental agencies, international financial institutions, academia and research institutions, civil society organizations and private sector organizations. WASAG develops and deploys policies, strategies and programmes to enhance the capacity of countries to improve and adapt agricultural systems in conditions of increasing water scarcity and a changing climate and has evolved into a global hub for solutions on drought resilience, sustainable irrigation and climate-smart farming.

Way forward

Enhance monitoring: Enhanced water monitoring in agriculture is a prerequisite to ensure sustainable management of water resources, food security and climate adaptation. Yet many countries still lack robust monitoring systems or have weak coordination among agencies collecting data. FAO works with countries to strengthen their water monitoring systems, including using modern technologies such as remote sensing.

Embed water-quality safeguards: The safe reuse of wastewater in agriculture is a strategy to address water scarcity and protect health. WHO-FAO-UNEP *guidelines* outline safety measures for untreated or partially treated wastewater which need to be promoted and utilized worldwide. FAO has and continues to implement projects specifically promoting wastewater reuse in peri-urban agriculture and water-scarce regions.

Strengthen governance: The world must accelerate all aspects of water management, together with transboundary cooperation, to increase its resilience to crises. This also includes adopting inclusive and adaptive land and water governance which require transformative changes in policy, institutional and technical domains that enable actions towards inclusive agrifood systems.

Accelerate innovation: A wide range of innovative technological and management response are now available within agrifood systems for more efficient and sustainable water resource management. These include practices for achieving sustainable soils and restoring soil health, improving soil water management, accessing non-conventional water resources, adopting nature-based solutions, managing environmental risks, coping with climate change, reducing carbon emissions, and using information and communications technology and big data.

Prioritize equity and resilience: Water-related interventions must target smallholders, women and youth, who face systemic barriers to irrigation and participation in water governance. Linking water management to climate adaptation strategies and social protection programmes can strengthen resilience and reduce vulnerability in low- and middle-income countries.



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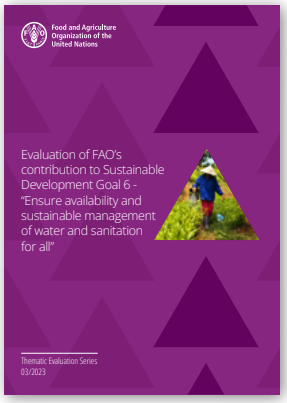
↑ FAO supports countries in strengthening water governance to tackle challenges such as climate change, water scarcity and food insecurity. Central to this effort is advancing the concept of water tenure — clarifying who holds rights to use water, under what conditions, and how these rights are administered. FAO's *ScaleWat* project promotes water tenure assessments, water accounting and inclusive policy dialogues in Colombia and Thailand. The project works with governments, farmers, water user associations and civil society to identify inequities and strengthen participation. Particular attention is given to women, youth, Indigenous Peoples and smallholder farmers, who are often excluded from decision-making and lack secure water rights. Training, pilot studies and national dialogues help ensure that water resources are allocated more fairly, and that people in vulnerable situations have a stronger voice in shaping policies and practices.

Innovative finance: Traditional funding models have prioritized agricultural efficiency and export-oriented production, often at the expense of food self-sufficiency in land and water-scarce regions. Subsidies tied to land and production can create harmful externalities. Redirecting financial support to investments in sustainable water management, research and extension services can help reduce environmental harm and strengthen agrifood systems resilience. FAO also calls for greater mobilization of blended finance and private sector investment to scale up water-smart agriculture and accelerate innovation at farm and landscape levels.

Learn more



The State of the World's Land and Water Resources for Food and Agriculture 2025



Evaluation of FAO's contribution to Sustainable Development Goal 6 – "Ensure availability and sustainable management of water and sanitation for all"



Progress on change in water-use efficiency



Progress on the level of water stress

Notes:

1 **FAO.** n.d. *Water is life, food is water: sustaining water and ensuring food for the future.* [Accessed 9 September 2025.] https://www.fao.org/director-general/articles/details/water-is-life--food-is-water--sustaining-water-and-ensuring-food-for-the-future/en

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

3 **FAO.** 2025. *The State of the World's Land and Water Resources for Food and Agriculture 2025 – The potential to produce more and better.* Rome. https://doi.org/10.4060/cd7488en

4 **FAO.** 2022. *The State of the World's Land and Water Resources for Food and Agriculture 2021 – Systems at breaking point. Main report.* Rome. https://doi.org/10.4060/cb9910en

5 **UN-Water.** 2024. *The United Nations World Water Development Report 2024: Water for Prosperity and Peace.* Paris. https://www.unwater.org/publications/un-world-water-development-report-2024

6 **United Nations.** 2025. *The Sustainable Development Goals Report 2025.* New York. https://unstats.un.org/sdgs/report/2025/

7 **World Resources Institute.** n.d. *The world's 25 most water-stressed countries.* [Cited 9 September 2025.] https://www.wri.org/insights/highest-water-stressed-countries

8 **FAO & UN-Water.** 2024. *Progress on change in water-use efficiency – Mid-term status of SDG Indicator 6.4.1 and acceleration needs, with special focus on food security and climate change, 2024.* Rome. https://doi.org/10.4060/cd2023en

9 **World Bank.** 2023. *Strains on freshwater resources impact food production and water consumption.* [Accessed 9 September 2025.] https://blogs.worldbank.org/en/opendata/strains-freshwater-resources-impact-food-production-water-consumption

10 **FAO & UN Water.** 2021. *Progress on Level of Water Stress. Global status and acceleration needs for SDG Indicator 6.4.2, 2021.* Rome. https://doi.org/10.4060/cb6241en

11 **FAO.** 2016. *Coping with water scarcity in agriculture - A global framework for action in a changing climate.* Rome. https://openknowledge.fao.org/handle/20.500.14283/i6459en

12 **FAO.** 2023. *Integrated flood management for resilient agrifood systems and rural development.* Rome. https://doi.org/10.4060/cc9058en

13 **Drechsel, P., Marjani Zadeh, S. & Pedrero, F.** (eds). 2023. *Water quality in agriculture: Risks and risk mitigation.* Rome, FAO & IWMI. https://doi.org/10.4060/cc7340en

14 **UNECE.** 2025. *Second reporting exercise (2020–21) for SDG indicator 6.5.2.* [Cited 9 September 2025.] https://unece.org/environmental-policy/second-reporting-exercise-202021-sdg-indicator-652

Food and Agriculture Organization of the United Nations



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FAO and SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Energy is needed at every stage of agrifood systems, from production and processing, to storage, transport, marketing and consumption.

Feeding a global population of nearly ten billion by 2050, while remaining within the 1.5 °C threshold of global warming, requires a radical transformation of agrifood systems. Decarbonization by mid-century will not be possible without addressing energy use in agriculture. Renewable energy sources, such as solar, wind energy or bioenergy, can be integrated along agrifood value chains to power activities such as irrigation, transport, processing and cold storage. Moreover, sustainable bioenergy can be produced through the use of agricultural waste and residue streams or as a co-product of ecosystem management.

The Food and Agriculture Organization of the United Nations (FAO) leads global efforts to expand access to innovative, green energy solutions and transition towards energy-smart agrifood systems, recognizing that this transformation is essential to ensure food security, build climate resilience, and provide access to clean, affordable energy for all - as sought under Sustainable Development Goal (SDG) 7. FAO supports the development and implementation of national and regional strategies, action plans and programmes that contribute to the SDGs, the objectives of the Paris Agreement and the achievement of the net-zero emissions by 2050.

FAO focuses on the following thematic areas related to energy-smart agrifood systems:

Enhancing the use of renewable energy sources for agriculture, by promoting and integrating renewable energy into agrifood systems. This supports environmental sustainability, including through the reduction of greenhouse gas (GHG) emissions and also contributes to economic and social development, improving the overall sustainability.

Addressing the production of sustainable bioenergy from agriculture, to improve local energy security, create income opportunities for farmers, promote green jobs and rural development, and foster a sustainable bioeconomy.

Adopting energy-saving technologies across agrifood value chains to improve the efficiency and sustainability of energy in agriculture and reduce the impacts of agrifood systems.

Integrating clean energy solutions in **crisis-affected and humanitarian settings** is also a key area of work.

FAO engages with governments, the private sector, research institutions and civil society organizations through multistakeholder dialogues and knowledge sharing, promoting joint efforts to address energy challenges in agrifood systems. FAO also plays a leading role in international fora such as UN-Energy and is a founding member and hosts the Secretariat of the Global Bioenergy Partnership (GBEP).



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↑ The Global Bioenergy Partnership (GBEP) is a multilateral initiative with more than 90 members focusing on bioenergy, promoting the sustainable and efficient use of bioenergy and biomass, particularly in low-income countries. Within this initiative, the Sustainability Indicators for Bioenergy have been developed, consisting of 24 science-based, voluntary sustainability indicators that address all forms of bioenergy, and cover the environmental, economic and social aspects of sustainability. They support policymakers and stakeholders with a tool to measure and monitor the sustainability of all types of bioenergy pathways, as compared with the business-as-usual scenario.

Climate, energy and food security are interconnected, and agrifood system solutions are also climate solutions. FAO supports countries in developing and promoting innovative systems, tools and services to better implement the nexus approach at global and national levels.

FAO conducts **in-depth and country-specific analysis** of energy needs across agrifood systems, identifies opportunities for renewable energy integration and sustainable bioenergy production and addresses the feasibility of such solutions. It works on improving energy efficiency in agriculture, as well as implementing sustainability assessments, to evaluate and monitor the environmental, social and economic performance of bioenergy production and use.

Based on these analyses, FAO provides **policy support** by facilitating the development of frameworks and policy recommendations that integrate energy-smart considerations into broader agrifood plans and strategies.

FAO also provides **technical support** in project formulation and implementation, as well as in the design and technical specifications of renewable energy systems within agrifood value chains, from solar-powered irrigation, processing and cold storage to sustainable bioenergy production for clean cooking, generation of heat and electricity or transport purposes. These interventions help reduce emissions, improve productivity, lower post-harvest losses and create green jobs, particularly for smallholders and rural enterprises.

The Organization has developed a suite of analytical frameworks and tools to guide policy and investment decisions, supporting agrifood systems transformation.

FAO's **Bioenergy and Food Security (BEFS) Approach** provides a comprehensive framework to support countries in designing and implementing sustainable bioenergy policies and strategies. The approach promotes food and energy security and contributes to agricultural and rural development. The BEFS Rapid Appraisal consists of a set of easily applicable methodologies and user-friendly tools which allow countries to get an initial assessment of their sustainable bioenergy potential and related opportunities, risks and trade-offs.

Additionally, the **Energizing Agriculture Assessment Tool (EAAT)** helps assess energy use and opportunities along value chains, while **INVESTA (Investing in Sustainable Energy Technologies in the Agrifood Sector)** provides cost–benefit analyses of clean energy interventions.

Data highlights

Agrifood systems are among the most energy-intensive sectors of the global economy, consuming **approximately 30 percent of globally available energy**. Post-farmgate activities, including transportation, processing, packaging, shipping, storage and marketing, account for 70 percent of the energy consumed by agrifood systems.

> Due to high dependence on fossil fuels, **energy use in agrifood systems accounts for about 30 percent of the sector's overall GHG emissions**. This makes the transition to sustainable energy in agrifood systems essential for achieving global climate goals.

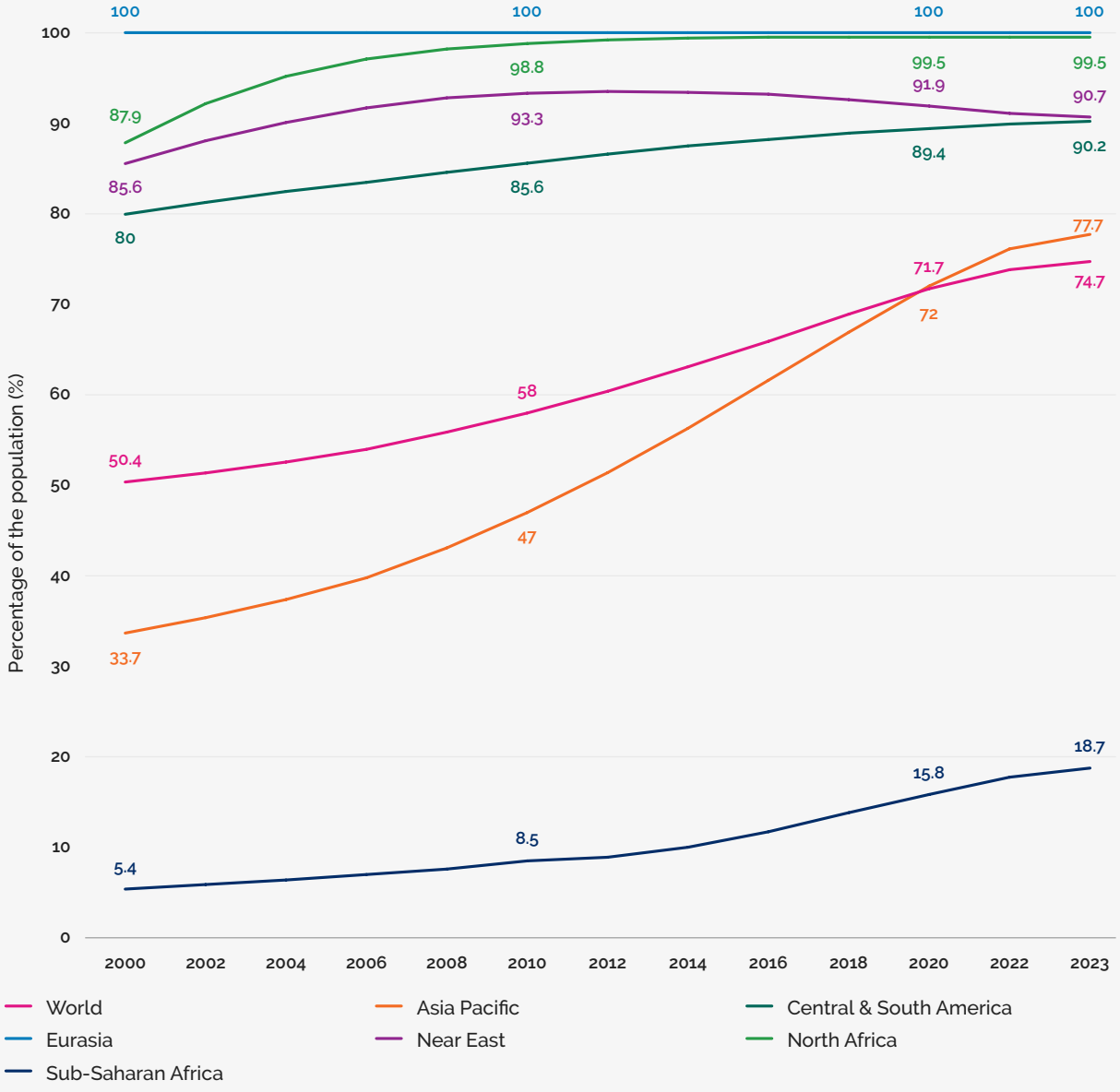
At the same time, the agrifood sector can provide resources for bioenergy generation from crop and livestock residues, organic waste and dedicated energy crops. **In 2023, total bioenergy production reached approximately 49.1 million terajoules**, comprising 43.4 million from solid biofuels, 4.6 million from liquid biofuels and 1.1 million from gaseous biofuels.[1] Almost 60 percent of solid biofuels, however, are used in an unsustainable, traditional manner, with increasing need to accelerate the transition to more modern and sustainable bioenergy forms.

In 2023, 666 million people remained without access to electricity, 84 percent of whom live in rural areas.[2] Without reliable power, farmers cannot irrigate efficiently, preserve produce or access markets competitively.

One-third of all food produced is lost or wasted, resulting in a loss of about 38 percent of the energy used throughout agrifood systems. This includes 526 million tonnes of food spoiled annually due to insufficient refrigeration. Reliable refrigeration could reduce global food loss by 12 percent, saving 144 million tonnes of food annually, mostly in low-income countries.

In 2022, 2.1 billion people – 30 percent of the global population – lacked access to clean cooking facilities and relied on traditional biomass such as wood, charcoal and agricultural residues (Figure 17).[2] The lack of access to clean cooking disproportionately affects poor and vulnerable households, particularly women and children, exposing them to household air pollution and limiting their educational and economic opportunities because of the substantial amount of time they spend on cooking and gathering fuel. In 2021, household air pollution was linked to an estimated 2.9 million deaths annually.[3]

Figure 17. Share of the population with access to clean cooking, 2000-2023



Source: Adapted from IEA. 2024. SDG7: *Data and Projections*. Paris. *https://www.iea.org/reports/sdg7-data-and-projections*.
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↑ FAO's work on renewable energy in agriculture is delivering measurable benefits: In Azerbaijan, the use of hazelnut residues could replace diesel in processing, saving 43 kg carbon dioxide equivalent (CO_2eq) per tonne. Additionally, the deployment of solar dryers and cold storage could reduce aflatoxin risks and combat food losses in the hazelnut value chain, while also saving up to 5 340 tonnes CO_2eq.[4] In the Solomon Islands, pig manure and landfill waste from selected sites could produce 45 million m³ of biogas over 25 years.[5] In the Gambia, waste from selected livestock farms, markets and dumpsites could yield 32.5 million m³ biogas over 15 years, with GHG savings of 124 thousand tonnes CO_2eq.[6] In India, utilizing 30 percent of rice straw generated in the state of Punjab could yield 5 million tonnes of pellets, 15 million tonnes of biogas, or 9 billion litres of ethanol, with potential GHG savings of 9.7 million tonnes CO_2eq.[7] While in Uzbekistan, wind and solar energy could potentially generate 240 TWh per year, completely covering the projected electricity demand by 2030, while bringing significant environmental benefits. For instance, the integration of solar energy along the wheat value chain could lead to GHG savings of around 25 thousand tonnes CO_2eq per year.[8]

Key challenges

Insufficient investment in renewable energy

Modern and renewable energy systems are capital-intensive and often unaffordable for rural households and enterprises. In spite of the sector's significant mitigation potential, agrifood systems receive only a small fraction of global climate finance. Between 2021 and 2022, for example, agriculture, forestry and other land use (AFOLU) accounted for one-third of global GHG emissions yet received only 7.2 percent of the world's total climate finance.[9] Smallholders frequently lack collateral or credit history, while small- and medium-sized enterprises, which dominate the agrifood sector, struggle with access to long-term debt and tailored financing solutions.

Weak integration of energy considerations into agrifood systems planning

Energy needs are rarely assessed across the agrifood value chain, and energy planning is often disconnected from agricultural and rural development strategies, limiting coordinated investment in renewable energy solutions that could make agrifood systems more productive and sustainable. It can also lead to land use competition and spatial planning challenges. Large-scale renewable energy installations can compete with productive land use, especially in areas with limited arable land. Integrated land-use strategies and spatial planning are essential to ensure that energy infrastructure complements rather than compromises food production.

Underutilization of agricultural residues and by-products

These resources hold significant potential for sustainable bioenergy generation, yet remain largely untapped due to economic, logistical and sustainability challenges. The collection, processing and transport of residues can be complex and costly and without proper sustainability assessments, their use may risk soil degradation or competition with food production.



© FAO/Daniel Hayduk

↑ Transitioning to modern, renewable, clean cooking systems (efficient stoves powered by biogas or other clean-burning energy sources) is crucial to achieving SDG 7, while supporting other SDGs. These technologies reduce GHG emissions (SDG 13), lessen health risks from indoor air pollution (SDG 3), ease pressure on forests (SDG 15) and address gender inequalities tied to fuel collection and income opportunities (SDG 5). In some countries, innovations such as converting sustainably collected crop and livestock waste into pellets, briquettes and biogas have the potential to significantly expand access to clean cooking. In Rwanda, for instance, they could increase access to clean cooking fuels by up to 33 percent,[10] while in Zambia they could meet up to the 12 percent of the country's clean cooking fuel target.[11] FAO works to expand access to clean cooking solutions for all, selecting fuels and technologies that fit the local needs — whether in rural areas, cities or humanitarian settings. This includes supporting the installation of biogas systems, the production of solid biofuels, providing cleaner and more efficient cookstoves, building local capacity for stove production and maintenance and promoting enabling practices at a policy level.

Way forward

Integrate energy-smart and low-emission solutions across agrifood value chains: Renewable and energy-efficient technologies should be embedded at every stage of agrifood chains – from production to consumption – to raise productivity, reduce losses and emissions and strengthen resilience. This encompasses scaling solar irrigation, renewables-based cold storage and processing, and transport, as well as the production of sustainable bioenergy from available crop and livestock residues, as part of integrated agrifood–energy systems. Such approaches address the climate-energy-food nexus, reduce dependence on fossil fuels and generate co-benefits for income, resource efficiency and climate mitigation.

Promote the sustainable use of agricultural residues and by-products for sustainable bioenergy generation: Agricultural residues and biogenic waste streams offer significant potential to replace fossil fuels and support clean energy transitions in agrifood systems for clean cooking, transport, heat or electricity. Their use can contribute to improved energy access, food security, rural development and climate mitigation. To ensure sustainability, bioenergy interventions must be guided by robust assessments that consider environmental, social and economic dimensions, including current uses of residues, impacts on soil health, biodiversity and land-use. Tools such as FAO's BEFS and GBEP Sustainability Indicators provide essential guidance for evaluating these trade-offs and maximizing co-benefits.



© FAO/Hadi Arslan

↑ FAO is integrating energy considerations into its work on responsible and inclusive fisheries development, helping small-scale operators adopt renewable energy technologies that improve efficiency, reduce emissions and sustain livelihoods. By embedding energy solutions within its guidance and initiatives, FAO is reinforcing the implementation of the FAO *Code of Conduct for Responsible Fisheries* and the FAO *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries*, supporting environmental sustainability, food security and poverty reduction. Practical guidance on renewable energy use and solar-powered cold chains in small-scale fisheries provides concrete pathways for achieving these objectives and accelerating the transition towards low-emission, climate-resilient and inclusive blue economies.

Enable cohesive policy, regulatory and financial frameworks: Renewable energy and efficiency must be mainstreamed into agriculture, food security and climate strategies, and aligned with national energy policies. This includes integrating energy-smart agrifood systems into nationally determined contributions, National Cooling Action Plans, and other climate and development frameworks. Fiscal and regulatory measures should reduce or remove import duties and VAT on renewable energy technologies, components and related sustainable biofuels, while incentivizing domestic production. Such measures can help reduce upfront costs, improve affordability and sustainability, as well as stimulate local markets for renewable energy in agrifood systems.

Promote inclusive financing mechanisms to expand access to energy: This includes tools such as microcredit, pay-as-you-go models and concessional loans. These are critical for ensuring affordability for smallholder farmers, women and youth-led agrifood enterprises.

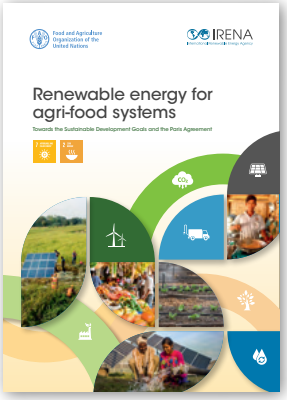
Adopt cross-sector and data-driven approaches to planning and monitoring: Energy transitions in agrifood systems must be guided by robust data, integrated planning and evidence-based policymaking. This requires improved data collection on energy use, geospatial mapping of opportunities and standardized monitoring, reporting and verification systems. Tools such as FAO's BEFS Approach and the GBEP Sustainability Indicators provide complementary tools for evaluating bioenergy potential and sustainability, while INVESTA provides a cost–benefit framework to assess economic, social and environmental impacts, helping policymakers prioritize interventions and align investments with climate and development goals.

Foster innovation and capacity development: Accelerating the energy transition in agrifood systems requires strengthened innovation ecosystems that combine research, technology development and skills training. Innovation partnerships between governments, the private sector, academia and local entrepreneurs are needed to drive context-specific technological solutions tailored to local agroecological and socioeconomic conditions. Expanding local manufacturing and capacity building at all levels for renewable energy technologies is essential to empowering local actors with the tools, knowledge and infrastructure to innovate and adapt energy solutions, ensuring long-term sustainability and inclusive growth in agrifood systems.

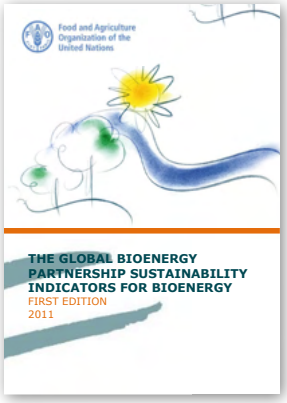
Prioritize inclusivity, gender equality and the needs of smallholders and groups in vulnerable situations: The energy-smart transformation must be socially inclusive and gender-responsive. Policies and investments should empower women, youth and small enterprises as active participants in renewable energy markets, ensuring affordable access and equitable benefit-sharing. Capacity-building, community engagement and awareness-raising are critical to overcoming social barriers and ensuring no one is left behind.

Expand renewable energy in emergencies and fragile contexts: Decentralized renewable energy solutions can play a crucial role in fragile, conflict-affected and crisis settings, where grid infrastructure is damaged or absent and reliance on imported fossil fuels undermines resilience and food security. In such contexts, renewable energy offers a clean, locally available, and rapidly deployable alternative that supports both humanitarian and recovery objectives on food security.

Learn more



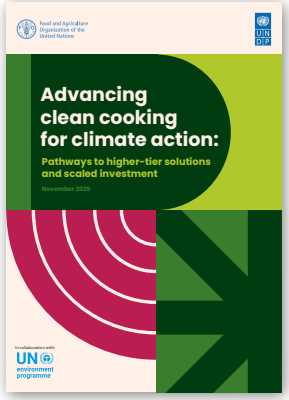
Renewable energy for agri-food systems: Towards the Sustainable Development Goals and the Paris Agreement



The Global Bioenergy Partnership Sustainability Indicators for bioenergy



Sustainable food cold chains: Opportunities, challenges and the way forward



Advancing clean cooking for climate action: Pathways to higher-tier solutions and scaled investment

Notes:

1 **FAO.** 2025. *FAOSTAT: Bioenergy.* [Accessed in September 2025.] *https://www.fao.org/faostat/en/#data/BE/*. Licence: CC-BY-4.0.

2 **IEA, IREAN, UNSD, The World Bank & WHO.** 2025. *Tracking SDG7: Energy Progress Report 2025. https://trackingsdg7.esmap.org/downloads*

3 **WHO.** 2025. Household Energy Database. In: *Global Health Observatory*. Geneva. *https://www.who.int/data/gho/data/themes/air-pollution/who-household-energy-db*

4 **FAO.** 2023. *Hazelnut sector in Azerbaijan – Options for green energy interventions along the value chain.* Environment and Natural Resources Management Working Paper, No. 98. Baku. *https://doi.org/10.4060/cc8599en*

5 **FAO & UNDP.** 2024. *Feasibility assessment of biogas potential in the Solomon Islands. https://www.adaptation-undp.org/resources/feasibility-assessment-biogas-potential-solomon-islands*

6 **FAO & UNDP.** 2024. *Feasibility assessment of biogas potential in the Gambia. https://www.adaptationundp.org/sites/default/files/resources/Final%2520PSE%2520Facility%2520Report%2520The%2520Gambia.pdf*

7 **FAO.** 2022. *Establishing residue supply chains to reduce open burning. The case of rice straw and renewable energy in Punjab, India.* Environment and Natural Resources Management Working Paper, No. 95. Rome. *https://doi.org/10.4060/cb9659en*

8 **FAO.** 2023. *Renewable energy interventions in the wheat landscape in Uzbekistan.* Environment and Natural Resources Management Working Paper, No. 96. Rome. *https://doi.org/10.4060/cc7057en*

9 **Climate Policy Initiative.** 2025. *Global Landscape of Climate Finance 2025. https://www.climatepolicyinitiative.org/publication/global-landscape-ofclimate-finance-2025/*

10 **FAO.** 2023. *Sustainable bioenergy potential from crop, livestock and woody residues in Rwanda: An integrated bioenergy and food security approach.* Environment and Natural Resources Management Working Paper, No. 97. Rome. *https://doi.org/10.4060/cc7094en*

11 **FAO & the Ministry of Energy of Zambia.** 2020. *Sustainable bioenergy potential in Zambia – An integrated bioenergy and food security assessment.* Environment and Natural Resources Management Working Paper, No. 84. Rome. *https://doi.org/10.4060/cb1528en*



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FAO and SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Decent work is the foundation of dignity, inclusion and social stability. Sustainable Development Goal (SDG) 8 calls for "*sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all*". Achieving this goal means ensuring that all individuals – especially youth, women and rural populations – have access to fair wages, safe working conditions, opportunities for advancement and a voice in workplace decisions.

More secure and decent jobs are urgently needed in rural areas where most of the world's poor live and work. Agrifood systems are a major employer and source of livelihood, especially in low- and middle-income countries, where the agrifood sector contributes a significant share of gross domestic product.[1] However rural communities, and in particular youth and women, often hold precarious and poorly paid jobs in the informal rural economy – 9 in 10 workers in agriculture are informally employed[2] – a situation that often causes them to migrate to urban areas where labour markets are often already saturated. Low family incomes and few livelihood alternatives are also key factors that contribute to child labour in agriculture, perpetuating a cycle of poverty.

At the same time, agrifood systems hold vast potential to drive **inclusive economic growth**. There exists a largely untapped reservoir of both farm and non-farm employment opportunities – spanning sustainable agriculture, agrifood value chains, agribusiness development and related support services.

The Food and Agriculture Organization of the United Nations (FAO) supports countries in advancing the decent rural employment dimensions of SDG 8 through inclusive agrifood systems transformation. FAO leverages its technical expertise, global presence, and partnerships to promote policies and programmes that create decent jobs and foster just transition.

FAO's work on decent rural employment promotes rural employment opportunities to ensure a living wage, security in the workplace, access to social protection, gender equality and social dialogue, while achieving environmental sustainability.

FAO's work on *Inclusive rural transformation* under the *FAO Strategic Framework 2022–2031* focuses on:

Youth employment: FAO develops field-tested approaches to address the barriers youth face in agrifood systems, improving access to skills, land, finance, markets, and decision-making; while supporting governments in integrating youth priorities into employment and rural development policies.

Child labour: FAO addresses the root causes of child labour in agriculture through supporting governments, producers' organizations and communities with solutions aiming at reducing functional and economic dependency from child labour and exposure of children to hazards, while promoting quality education for children. This work is guided by the *FAO Framework on ending child labour in agriculture*. This protects children's rights while promoting decent youth employment in agriculture.

Green jobs: FAO promotes the creation of sustainable, climate-resilient on- and off-farm employment that not only improves livelihoods and protects the environment but also fosters regeneration, through practices such as agroecology and the bioeconomy.

Migration: FAO works to make migration a choice not a necessity while maximizing its benefits. This is done by building climate-resilient livelihoods, creating alternatives to migration and reintegration pathways in rural areas, leveraging diaspora contributions and protecting migrants working in agrifood systems. This work is guided by the *FAO Migration Framework*.

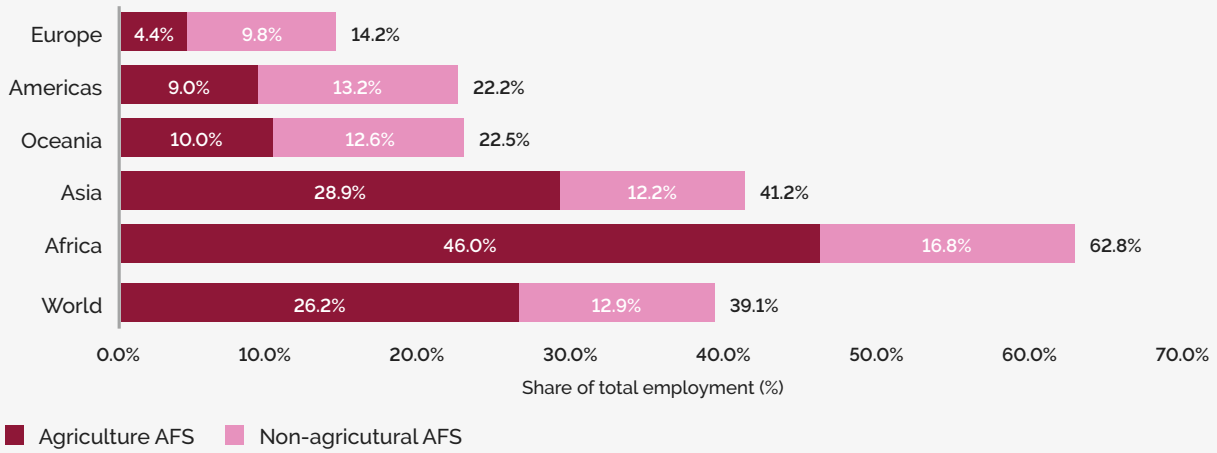
Partnerships: FAO fosters a consistent and harmonized approach to decent work in agrifood systems thanks to its global, regional and country level partnerships. The Organization partners with Members and non-state actors, such as other UN agencies, civil society organizations, producer organizations, including women- and youth-led ones, academic and research institutions as well as the private sector. This gives FAO an opportunity to harness synergies between key stakeholders during the implementation of programmes, projects and other activities.

Data highlights

Agrifood systems provide work for nearly 1.3 billion people – about 39 percent of the global workforce[3, 4] – and 3.83 billion people live in households linked to agrifood systems-based livelihoods (Figure 18).[5] For young people aged 15–24, their importance is even greater: in 2021, 44 percent of employed youth worked in agrifood systems, compared to 38 percent of adults.[6]

Tripling investment in nature-based solutions by 2030 could create up to 20 million new jobs globally, most in rural areas.[7] While the green transition may cause job losses in some sectors, these are likely to be outweighed by gains in the green economy.

Figure 18. Share of agrifood systems employment out of total employment, 2022



Note: The graph shows the share of agrifood systems employment out of total employment in 2022 (with this overall share labelled at the end of each bar), distinguishing between agricultural and non-agricultural activities (whose share out of total employment is labelled within the bar) across each of the regions. Minor discrepancies between the sum of agricultural and non-agricultural shares and the total agrifood share are due to rounding.

Source: Author's own elaboration, using data from FAO. 2025. FAOSTAT: *Employment Indicators: Agriculture and agrifood systems.*

More than 20 percent of youth were not in employment, education or training (NEET) in 2023. A recent estimate shows that youth inclusion, through integration of unemployed and NEET youth into employment could boost global gross domestic product (GDP) by 1.4 percent. **Agrifood systems would generate 87 millions jobs for youth and contribute USD 680 billion to GDP growth.**[6]

Migration is closely linked to rural employment, with about **80 percent of all migratory movements involving rural areas as places of origin or destination.**[8] While migration can deplete rural labour forces and heighten food security risks, it also brings opportunities – migrant workers make essential contributions across agrifood supply chains. At the same time, migrant workers in agriculture are particularly vulnerable to decent work deficits.

Child labour remains a pressing concern. Of the **138 million children** trapped in child labour, **83 million (61 percent)** are in agriculture — limiting access to education and perpetuating poverty. In sub-Sahara Africa, 70 percent of child labour occurs in agriculture.[9]

Access to finance is often a barrier to economic growth in the agrifood sector, especially for young people. In 2021, only 66 percent of young people held a financial account, compared with 79 percent of adults, restricting their ability to save, invest and participate in economic activities.[6] However, mobile money accounts are transforming access to financial services and offer an efficient and affordable alternative for youth. In sub-Saharan Africa for example, 32 percent of young people had a mobile money account in 2021. Access to mobile phones and the internet are among the key factors driving the uptake of financial services among young people.[6]

Access to mobile phones and internet connectivity is strongly associated with higher levels of financial inclusion. Evidence indicates that young people who own a mobile phone are three times more likely to hold a financial account, while access to the internet approximately doubles the likelihood of account ownership.[10]



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↑ **Eradicating child labour is a global commitment under SDG Target 8.7. Child labour means work that harms children's health, safety or education.[11] Not all work by children is child labour — age-appropriate, non-hazardous tasks that don't interfere with schooling can support skills transfer and food security. In rural areas, child labour is three times more common than in cities, driven by poverty and poor access to education. FAO works with partners to end child labour through strategies aiming at improving livelihoods, reducing labour demand and exposure to hazards.**

Key challenges

Weak rural transport and digital infrastructure limit decent work and skills development

Rural areas often lack reliable transport and broadband infrastructure, which constrains access to markets, finance and services and limited connectivity and affordability hinder the use of digital tools for learning, advisory services and market information. At the same time, education, vocational training and extension services are frequently underfunded and disconnect rural youth from market-relevant skills and modern agrifood practices. Together, these barriers prevent youth and women from acquiring the skills and opportunities needed to participate fully in agrifood systems. Work in remote rural areas also poses challenges to inspection and enforcement of labour standards, which increases vulnerability to exploitation.

Social norms restrict women and youth's access to productive employment

Discriminatory social norms continue to limit women's and youth's access to land, finance and productive resources.[6, 12] These constraints, combined with the structural challenges of rural areas, reduce even further their ability to innovate, start businesses and secure decent work, reinforcing gender- and age-inequalities in rural labour markets and slowing agrifood systems transformation.

Conflict driven disruption of rural labour markets reduces opportunities

Armed conflict disrupts rural labour markets, displaces working-age populations and destroys the infrastructure needed for decent employment, therefore reducing access to education, finance and markets, and forcing many into informal or hazardous work, thus aggravating poverty and inequality.



© FAO/Daniel Hayduk

↑ **Rural populations — especially small-scale producers and women — are among the most vulnerable to climate change due to their reliance on natural resources. FAO seeks to enhance climate resilience and adaptive capacity in rural areas and works to build the capacities of governments and stakeholders to incorporate human mobility into national and local adaptation planning to benefit rural communities. Targeting communities at high risk of climate-induced migration, FAO supports the implementation of interventions that intersect migration, food security and climate change.**

Way forward

Invest in youth, unlock the future: Unlocking the potential of youth in agrifood systems requires targeted strategies, such as modernizing agricultural education, integrating work-based learning, fostering innovation and entrepreneurship, and supporting youth-led agribusinesses, as well as creating an enabling environment to generate green and decent employment opportunities. This approach empowers youth to drive economic growth and social stability, particularly by creating access to decent jobs in sustainable agrifood systems. Beyond labour supply, such an approach requires a close look at labour demand for youth in agrifood systems and engagement of both public and private sectors. Together with expanding broad-based productivity growth and economic opportunities for all, investing in youth with targeted strategies is vital for achieving SDG 8. Work-based learning, mentorship programmes, peer support, intergenerational knowledge transfer and market access initiatives empower youth, while cooperatives and networks expand their resources and agency.

From vulnerability to opportunity: Transforming rural youth livelihoods requires inclusive policies, cross-sectoral collaboration, and multistakeholder partnerships to address decent employment barriers, foster youth engagement in agrifood systems and support youth-led enterprises. Improved policy coherence, evidence-based and well-targeted programmes, and labour market policies that address inequalities are essential for empowering rural youth and building resilient livelihoods. This requires joint interventions and policy alignment across various sectors, with social protection measures playing a critical role in providing a safety net and long-term support for vulnerable youth.

Bridging the gaps: Targeted, gender-sensitive policies and programmes are essential to address barriers faced by disadvantaged and rural youth, enabling their transition to education, training and decent employment. Emphasis should be placed on empowering young women, supporting people in vulnerable situations and implementing employment-intensive initiatives in fragile contexts to foster resilience.

Breaking the cycle of child labour in agrifood systems: Systemic transformation and catalysing change by supporting policies, capacity- building and awareness-raising at all levels in collaboration with governments, communities and other partners is required to address the multiple, interrelated root causes of child labour. Promoting safe and sustainable agricultural practices to reduce reliance on child labour, while ensuring that rural youth (ages 14/15–17) gain access to decent work opportunities and pathways to sustainable livelihoods.

Financial inclusion: Expanding opportunities for youth through strengthened regulations, fintech solutions, financial literacy and technical training can drive rural development. This is further supported by incentives for financial service providers to engage sustainably with young entrepreneurs.



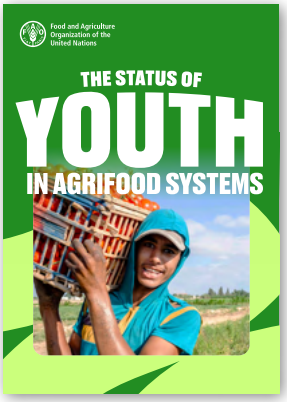
© FAO/Sebastian Liste

↑ **Building on its longstanding experience in promoting decent rural employment and fostering the development of inclusive agrifood value chains, FAO has implemented the Integrated Country Approach (ICA) since 2011 to boost decent jobs for youth in the agrifood sector. By adopting a market-systems development approach in Ecuador, Viet Nam and Zambia, the latest phase of ICA (ICA-4) supports national stakeholders – including policymakers, market actors and youth organizations – in designing and implementing sustainable, inclusive and scalable solutions for generating decent employment and entrepreneurship opportunities for youth in agrifood value chains. At the same time, the project facilitates knowledge sharing and policy dialogue.**

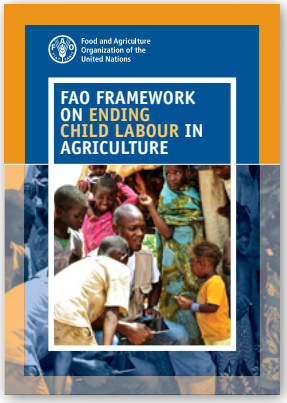
Youth in action: Empowering youth requires meaningful inclusion in employment, rural development and sectoral strategies, fostering genuine partnerships with youth networks, supporting cooperatives and addressing systemic barriers. Institutionalizing youth agency in policy dialogues ensures their sustained participation in shaping a transformative and green future.

Migrant workers: Governments should ensure safe, regular migration pathways that protect workers' rights, promote fair recruitment and prevent exploitation. Adequate housing and transport, freedom of association and tailored occupational safety and health measures are crucial. Effective monitoring and access to justice are needed to uphold migrant workers' rights, as is better data on the numbers of migrant workers engaged in agrifood system.

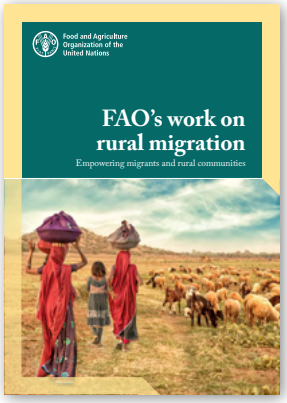
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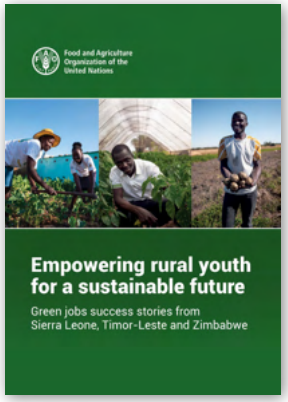
The Status of Youth in Agrifood Systems



FAO framework on ending child labour in agriculture



FAO's work on rural migration. Empowering migrants and rural communities



Empowering rural youth for a sustainable future

Notes:

1 **FAO.** 2024. *The State of Food and Agriculture 2024 – Value-driven transformation of agrifood systems.* Rome. https://doi.org/10.4060/cd2616en

2 **ILO.** 2023. *Women and men in the informal economy: A statistical update.* Geneva. https://www.ilo.org/publications/women-and-men-informal-economy-statistical-update

3 **FAO.** 2024. *Employment indicators 2000–2022. October 2024 update.* FAOSTAT Analytical Briefs, No. 92. Rome.

4 **FAO.** 2023. *The State of Food and Agriculture 2023 – Revealing the true cost of food to transform agrifood systems.* Rome. https://doi.org/10.4060/cc7724en

5 **Davis, B., Mane, E., Gurbuzer, L.Y., Caivano, G., Piedrahita, N., Schneider, K., Azhar, N., et al.** 2023. *Estimating global and country-level employment in agrifood systems.* FAO Statistics Working Paper Series, No. 23-34. Rome. https://doi.org/10.4060/cc4337en

6 **FAO.** 2025. *The Status of Youth in Agrifood Systems.* Rome. https://doi.org/10.4060/cd5886en;

7 **ILO, UNEP & IUCN.** 2022. *Decent work in Nature-based Solutions 2022.* Geneva. https://www.ilo.org/publications/decent-work-nature-based-solutions-2022

8 **FAO.** n.d. Migration. In: *Decent Rural Employment.* [Cited September 2025.] https://www.fao.org/rural-employment/work-areas/migration/en

9 **ILO & UNICEF.** 2025. *Child Labour: Global estimates 2024, trends and the road forward.* Geneva and New York, USA. https://www.ilo.org/publications/major-publications/child-labour-global-estimates-2024-trends-and-road-forward

10 **Deshpande, R., Koning, A. & Tan, L.** 2024. *Financially including young women: Gains for a generation.* CGAP. Washington, DC. www.cgap.org/blog/financially-including-young-women-gains-for-generation

11 **ILO & UNICEF.** 2021. *Child Labour: Global estimates 2020, trends and the road forward.* New York, USA. https://www.ilo.org/publications/major-publications/child-labour-global-estimates-2020-trends-and-road-forward

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

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FAO and SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Scaling up innovation, enhancing scientific research, upgrading technological capacities and ensuring that small-scale producers and rural communities can access the infrastructure, technologies and financing needed to compete and thrive, as highlighted under Sustainable Development Goal (SDG) 9, are foundational for agrifood systems transformation.

Infrastructure is the backbone of agrifood systems as roads, irrigation, energy, cold storage chains and digital networks connect producers to markets and enable access to essential services. Yet gaps in rural physical and digital infrastructure continue to isolate small-scale producers, limit opportunities for growth and reinforce inequalities.

Inclusive and sustainable industrialization is central to strengthening agrifood systems and this includes sustainable agricultural mechanization, especially for Africa for which a special framework was developed. Small- and medium-sized enterprises (SMEs) are responsible for a large share of food production, processing and distribution, and are deeply rooted in rural communities, sourcing produce primarily from small-scale farmers.[1] They contribute significantly to food security, nutrition, biodiversity, climate action and rural development. Yet many remain marginalized, lacking access to markets, finance, technology and innovation.

Innovation underpins both infrastructure and industrialization. Innovation extends beyond technology to include social, financial, policy, and institutional dimensions. Scaling up transformative innovations is urgent to address climate change, food insecurity and growing inequality, while preparing for future paradigm shifts in science and innovation.

The Food and Agriculture Organization of the United Nations (FAO) works to accelerate innovation and inclusive industrialization as part of its *Strategic Framework 2022–2031*.

FAO has strengthened its institutional commitment to science and innovation through the *FAO Science and Innovation Strategy* (launched in 2022), which guides the use of scientific evidence and innovation across FAO's normative and technical work. In 2025, FAO launched the Agrifood Systems Technologies and Innovations Outlook (ATIO), a global initiative designed to accelerate sustainable agrifood systems transformation through inclusive, evidence-based innovation. ATIO serves as a global reference on science, technology and innovation in agrifood systems, identifying emerging technologies and tracking progress while ensuring inclusivity, ethics and environmental responsibility in decision-making and investment.

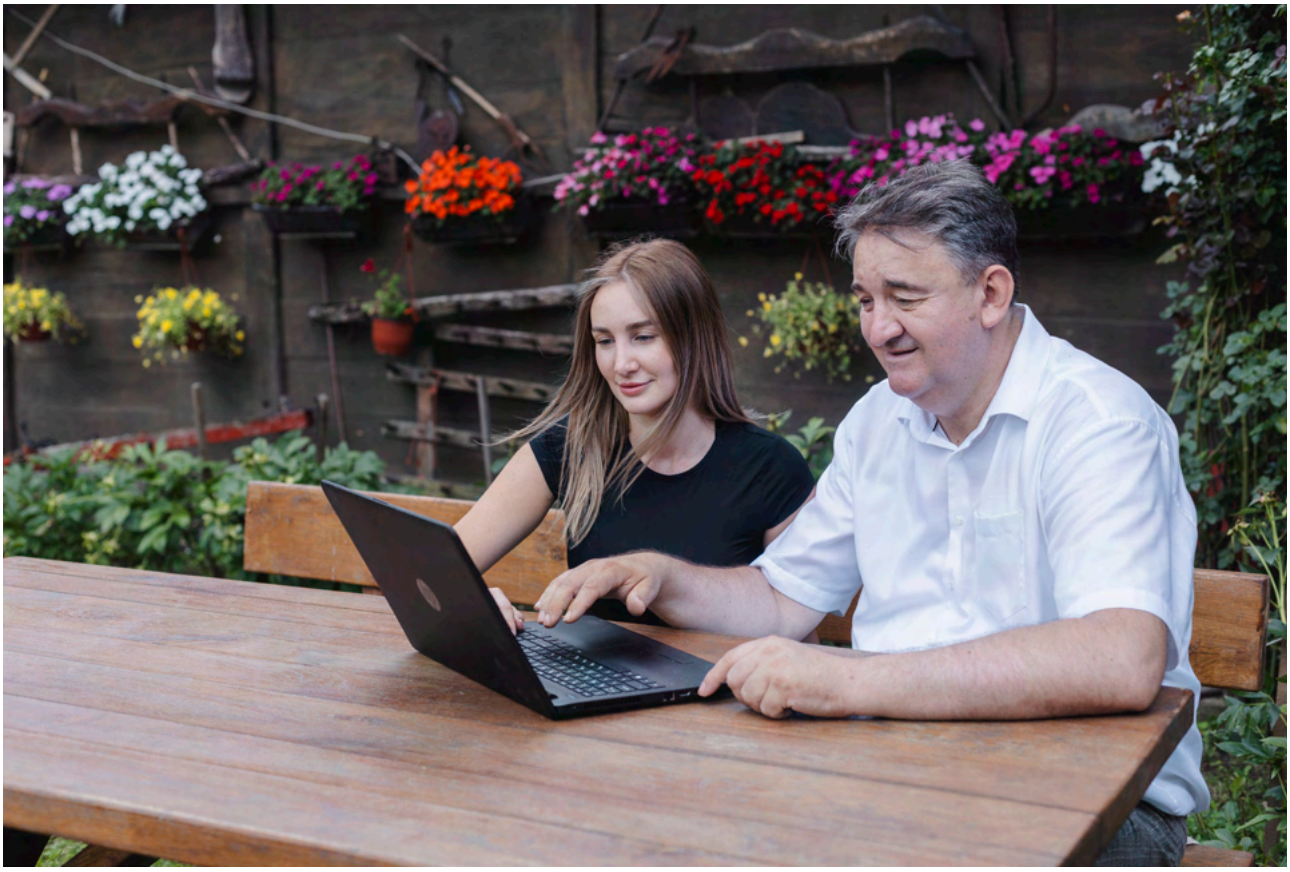
Normative and policy guidance: FAO provides global policy and regulatory frameworks for sustainable agro-industrial development. Through normative instruments such as the *International Plant Protection Convention*, the Codes of Conduct on *Pesticide Management* and *Fertilizers*, and the *Committee on World Food Security Principles for Responsible Investment in Agriculture and Food Systems*, FAO sets standards and supports enabling policies that link production with innovation, infrastructure and value-added processing.

Data and analytics: FAO generates and disseminates data and analytics to guide investment and innovation. The Hand-in-Hand Geospatial Platform and other intelligence tools support evidence-based decision-making on infrastructure, technology adoption and industrial upgrading. FAO's analytical work identifies innovation gaps and helps design inclusive innovation systems that link research, technology and markets. Through the FAO Data Lab for Statistical Innovation, the Organization develops new methods to leverage big data, artificial intelligence and geospatial tools for agrifood monitoring and decision-making. These innovations enable countries to produce timely, granular insights that inform policies and investments for resilient and efficient agrifood systems.

Digital agriculture: FAO advances digital agriculture to increase connectivity, market opportunities and productivity, particularly among rural communities. The *FAO Digital Agriculture and AI Roadmap* identifies inclusive applications for yield prediction, precision agriculture and supply chain optimization. Through the Programme Priority Area on *Digital agriculture* under the Strategic Framework (2022-2031), the Rome Call for AI Ethics and national Digital Agriculture Strategies, FAO promotes responsible digitalization and inclusive access to information and communication technologies in line with SDG Target 9.c. In parallel, it supports the development of Digital Public Goods and Digital Public Infrastructure to ensure affordable rural access to essential services such as finance, insurance and education, helping bridge the digital divide for small-scale producers.

Agro-industry development: Recognizing the central role SMEs in agrifood systems, FAO works with partners to strengthen SMEs and drive midstream value addition. FAO also supports financial innovation to address the "missing middle" financing gap, enabling agrifood SMEs to scale their operations and create rural employment opportunities.

Capacity development and innovation scaling: FAO promotes approaches that combine technological, social, institutional and financial innovations to maximize impact and strengthen human and institutional capacities to apply new technologies and practices. Examples include the Science, Technology and Innovation portal/ATIO knowledge base, which accelerates the uptake of appropriate technologies and innovations; GeoTech4Tenure, which uses geospatial technology to secure land rights; the Globally Important Agricultural Heritage Systems (GIAHS) initiative, which safeguards traditional knowledge while enhancing sustainability and One Country One Priority Product (OCOP) initiative, which promote sustainable, climate-resilient and resource-smart technologies while linking farmers, research institutions and the private sector to accelerate innovation adoption. This work contributes to the objectives of the Programme Priority Area *Innovation for sustainable agriculture production* under the FAO Strategic Framework (2022–2031).



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↑ The FAO Digital Services Portfolio (DSP) is a cloud-based platform that disseminates information across food and agriculture and scales up agricultural services for smallholders and family farmers. It forms part of the Organization's broader effort to foster digital inclusion and promote digitalization and modernization in agriculture by supporting the efficient use of digital tools in the field. The DSP makes data, information and statistics available and accessible as digital services for rural communities, delivering agriculture advisories that draw on the knowledge of countries, FAO and strategic partners in the mobile world. The platform currently builds on four major themes that improve agricultural services and expands the availability of local content, with potential to grow into additional areas as country needs evolve. These themes include weather and crop calendars with forecasts and alerts, livestock health and feed optimization, AgrimarketPlace, which provides prices for important commodities in surrounding markets, and E-NutriFood which provides guidance on production and conservation techniques of nutritious foods, as well as on value, nutritional value and consumption.

Data highlights

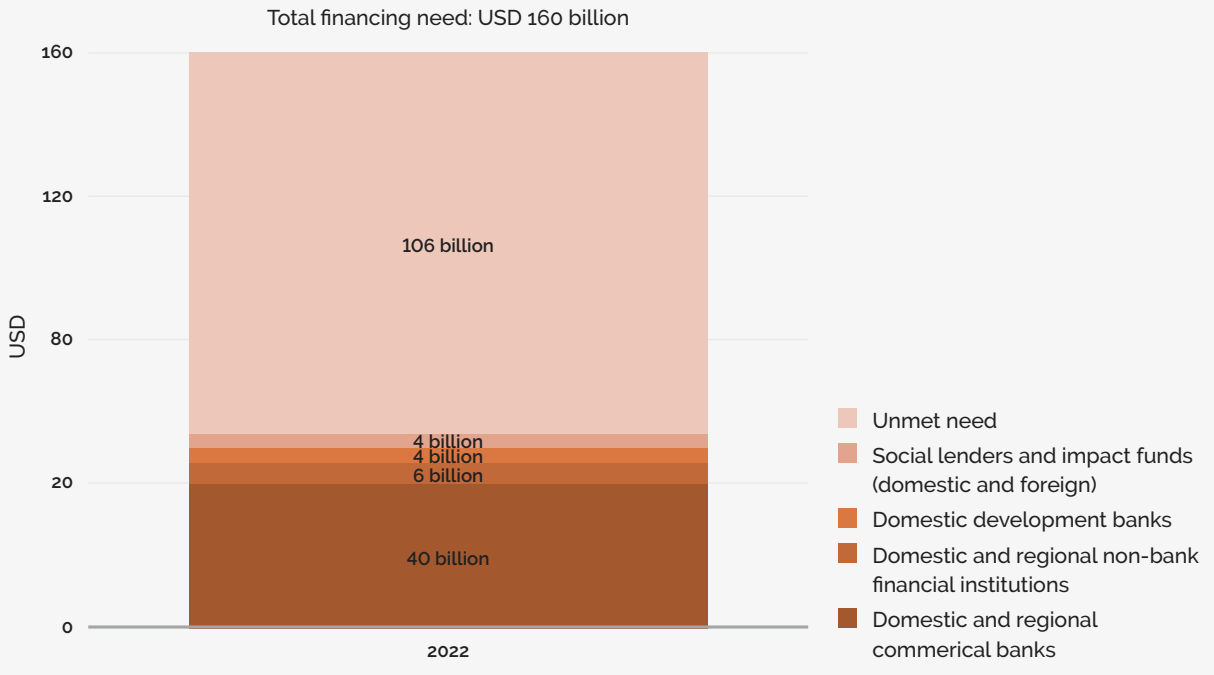
Rural Infrastructure gaps persist – **nearly one billion people, or one-third of the global rural population, live more than 2 km from an all-season road**,[2] isolating farmers from markets and increasing transport costs. Inadequate storage facilities, cold chains and mechanization further contribute to high post-harvest food losses, particularly in low-income countries.

In Least Developed Countries, only 27 percent of the population use the internet.[3] Digital technologies improve access to information and transform agricultural practices, enabling farmers and agripreneurs to engage in contract farming, direct marketing, logistics coordination and networking, and to access funding opportunities.[4] These areas risk being left behind in the digitalization process.[5]

SMEs are drivers of inclusive and sustainable industrialization in agrifood systems, representing more than 90 percent of formal businesses in low- and medium-income countries and are active across all agrifood subsectors and value chains. Their dominance in the midstream segment (post-harvest handling, aggregation, distribution and trading) positions them as key enablers of value addition, job creation and market access. **In sub-Saharan Africa and South Asia, SMEs account for up to 80 percent of midstream activity**, linking millions of small-scale producers to consumers and contributing significantly to gross domestic product and food security.[6]

Access to affordable finance remains a major barrier to SME growth, with **agrifood SMEs in developing regions facing a financing gap exceeding USD 100 billion annually** (Figure 19), which is limiting investment in processing, storage and digital tools needed for value addition. Closing this gap is essential to achieving SDG Targets 9.2 and 9.3.

Figure 19. Supply of financing provided by domestic and regional lenders to agrifood small and medium-sized enterprises in low-income countries compared to need, 2022



Source: Adapted from UNIDO & FAO. 2024. *Ending hunger is possible: An income-generating approach through value addition.* Vienna. https://doi.org/10.4060/cd2942en

Returns on agrifood research and development (R&D) are consistently high. **On average, each dollar invested in agrifood systems generates USD 10 in social returns,** including productivity gains, lower food costs and improved agrifood systems outcomes.[7, 8]

Global agrifood R&D investment trends are shifting. Growth in total real public and private spending has slowed in recent years, declining from an average annual growth rate of 2.7 percent between 1980 and 2015 to about 1.9 percent between 2015 and 2021. The composition of investments has also changed. In 2021, the private sector accounted for nearly 50 percent of global agrifood R&D spending, up from around 32 percent in 1980, while the public sector's share has declined relative to previous decades. Geographically, middle-income countries are playing a growing role in agrifood R&D and have overtaken high-income countries as the largest investors. The Asia-Pacific region now accounts for roughly half of global spending. However, by contrast, in 2021 sub-Saharan Africa accounted for only around 3 percent of global agrifood R&D spending, leaving many countries reliant on technologies developed elsewhere, which are often difficult to scale in different agroecological and institutional contexts.[8]

Key challenges

Governance and policy gaps in innovation

Many countries face weak governance and limited coordination across their science, technology and innovation systems. Policy frameworks are often fragmented or outdated, limiting alignment between innovation, agriculture, industrialization and digitalization agendas, and weak interministerial collaboration and overlapping institutional mandates slows progress and reduces coherence between research, extension and enterprise support. In many cases, policies remain reactive, with limited foresight capacity to anticipate and guide emerging technologies such as artificial intelligence, biotechnology and automation. Strengthening coordination, foresight and participatory governance is essential to steer innovation towards sustainable, inclusive agrifood industrialization.

Social and cultural barriers to inclusive innovation

Limited inclusion of farmers, women, youth and grassroots innovators in decision-making restricts the social reach of innovation in agrifood systems. Persistent gender disparities in access to finance, education and digital skills, combined with low rural connectivity and limited digital literacy, widen the innovation divide. In some contexts, trust in new technologies remains low, and the ethical, social and environmental implications receive insufficient attention. Embedding inclusion, transparency and ethics in innovation processes is key to ensuring technologies serve diverse users and strengthen equity within agrifood transformation.

Global inequalities in innovation and infrastructure

Innovation ecosystems remain highly unequal. Research capacity, data and investment are concentrated in a few high-income countries and technology clusters, leaving many developing regions (especially sub-Saharan Africa and parts of Asia) at risk of being left behind. Disparities in access to capital, digital infrastructure and intellectual property reinforce unequal participation in global value chains, and bridging these divides through stronger international cooperation, technology transfer and equitable data governance is critical to achieving inclusive industrialization and innovation under SDG 9.



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↑ FAO's work puts a particular focus on micro-, small- and medium-sized enterprises (MSMEs) in low- and middle-income countries, particularly those led by women and youth. These enterprises often face institutional weaknesses, limited access to resources and barriers to transitioning into sustainable businesses. Through an the initiative "*Strengthening the capacities of small-scale producers and MSMEs by upgrading their business models to supply nutritious food to local markets*", implemented in Ghana, Guatemala, Kenya and Viet Nam, FAO worked with public and private partners, academia and research institutions to address these challenges by profiling MSMEs, assessing capacity gaps, facilitating multistakeholder engagement and delivering targeted training, mentoring and coaching. More than 80 percent of participating enterprises upgraded their business plans and strengthened food safety, product quality and nutrition sensitive value chains, contributing to local income generation, employment and improved access to diversified and nutritious foods.

Way forward

Invest in rural physical and digital infrastructure: Investment in rural roads, cold storage chains, reliable energy and digital public infrastructure for the delivery of rural broadband is essential to close the rural connectivity gap, connect producers and SMEs to markets and services, and therefore for agrifood systems transformation and growth. Digital connectivity should be paired with advisory and extension services so that users can adopt digital tools for production, food safety and traceability.

Support agroprocessing and value addition: Reduced food loss and improved food safety may be achieved through cluster development and value chain integration, industrial parks and place-based upgrading of storage, cooling and processing.

Increase SME and entrepreneur access to finance: Facilitate access to affordable finance through expanding credit guarantees, revenue-based finance and leasing for equipment such as cold storage and solar systems.

Scale investment in agrifood R&D: Repurpose R&D budgets towards inclusive, smallholder-relevant and climate-smart solutions. Evidence shows that agricultural R&D, when combined with extension services and increased mechanization, delivers significant gains in yields and incomes. Technological innovation in breeding, genetics and optimized input use can further enhance sustainability and efficiency.

Facilitate sustainable and resilient infrastructure: Use international financing to scale country pipelines for climate-resilient, innovation-ready infrastructure. Leverage the Green Climate Fund, the Global Environmental Facility and other partners to co-finance rural roads, renewable energy for processing, cold chains and rural broadband.

Strengthen national innovation ecosystems: Support coordinated investment in research, education and innovation governance through tailored national innovation strategies, based on local agroecological and socioeconomic contexts; embed rights-based and gender-transformative approaches; build co-creation platforms that connect universities, research institutes, extension services, SMEs and farmer organizations and which are inclusive of Indigenous Peoples, women, and youth, recognizing and scaling local innovations such as traditional climate-resilient practices; and use public–private partnerships, regional cooperation and living labs to adapt and scale appropriate innovations and strengthen innovation management, incubation and acceleration services.



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↑ Through its Investment Centre, FAO is supporting investments in rural infrastructure, with the Regional Sahel Pastoralism Support Project being one example. Implemented with the International Development Association, part of the World Bank Group and the Governments of Burkina Faso, Chad, Mali, Mauritania, Niger and Senegal, the project strengthens key transhumance corridors used by pastoralists travelling long distances each year in search of grazing. Targeted investments in water point access, animal feed storage, shops and livestock markets have supported shared access to essential services and markets for pastoralists helping to strengthen the resilience for these communities.

Strengthen data governance: Effective data governance and interoperability are critical to unlocking the potential of digital innovation as without reliable, accessible and well-managed data, risk-reduction efforts remain fragmented and less effective. Strong governance frameworks ensure that data-driven and risk-informed policies can be developed and implemented, enabling coordinated responses to agricultural risks. Establishing robust digital infrastructure is equally important, as it serves as the backbone for deploying these solutions at scale.

Learn more



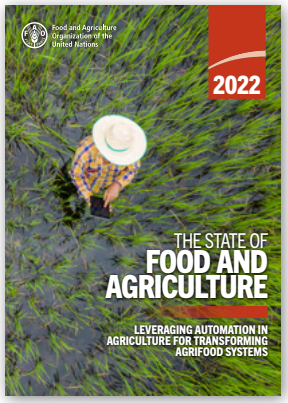
FAO Science and Innovation Strategy



Introducing the Agrifood Systems Technologies and Innovations Outlook



Shaping sustainable agrifood futures: pre-emerging and emerging technologies and innovations for impact



The State of Food and Agriculture 2022

Notes:

1 **LeBlanc, C., Kissick, C. & Keats, S.** 2021. *Stepping Up – Everyone around the table for better nutrition and healthy diets. Step 1: The role of the private-sector – Focus on small and medium enterprises.* Rome. https://doi.org/10.4060/cb1401en

2 **World Bank.** n.d. Transport – Overview. In: *World Bank Group*. [Cited on 9 September 2025.] https://www.worldbank.org/en/topic/transport/overview

3 **United Nations.** 2023. Widening Digital Gap between Developed, Developing States Threatening to Exclude World's Poorest from Next Industrial Revolution, Speakers Tell Second Committee. In: *Meetings Coverage and Press Releases*. [Cited on 9 September 2025.] https://press.un.org/en/2023/gaef3587.doc.htm

4 **FAO.** 2025. *The Status of Youth in Agrifood Systems.* Rome. https://doi.org/10.4060/cd5886en

5 **Trendov, N.M., Varas, S. & Zeng, M.** 2019. *Digital technologies in agriculture and rural areas – Briefing paper.* Rome. https://openknowledge.fao.org/handle/20.500.14283/ca4887en

6 **FAO.** 2024. *Small and medium enterprises and nutrition: understanding linkages, seizing opportunities – Discussion paper.* Rome. https://doi.org/10.4060/cd0056en

7 **FAO.** 2025. C 2025/32 - *Biennial Theme 2026-2027: Fostering Innovation for Food Security*. Forty-fourth Session of FAO Conference. Rome. https://openknowledge.fao.org/handle/20.500.14283/nr673en

8 **Pardey, P.G., Chan-Kang, C., Stads, G.-J., Chai, Y., Alston, J.M., Greyling, J. & Muñoz, H.** 2025. Food will be more affordable — if we double funds for agriculture research. *Nature*, 648 (11 December): 271–274.

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FAO and SDG 10: Reduce inequality within and among countries

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Sustainable Development Goal (SDG) 10 emphasizes the need to reduce inequality within and among countries, in recognition that social, economic, and political inequalities undermine peace, prosperity, and the universal achievement of human rights. Inequalities limit individuals and groups accessing food, assets, resources, information, services, decent employment and other opportunities, perpetuating cycles of poverty, food insecurity and malnutrition.

Agrifood systems can be both a driver of inequalities and a pathway to redress them.

Who benefits from agrifood systems and who is left behind is determined by gender, ethnicity, disability, age, socioeconomic status, etc. When these factors intercept, they may further exacerbate marginalization or exclusion of some people or groups. Indigenous women, for example are particularly limited in accessing resources in agrifood systems, affecting productivity and their ability to manage risks.[1] Inequalities are passed from one generation to the next, entrenching disadvantage; for example, undernourished mothers are more likely to give birth to underweight children, perpetuating nutritional inequities. Similarly, poor households are more likely to resort to child labour in order to meet basic needs and deal with uncertainty; and children in child labour are less likely to find decent work when they are older.

Reducing inequalities within and among countries is at the heart of the mandate of the Food and Agriculture Organization of the United Nations (FAO) to achieve more efficient, inclusive, resilient and sustainable agrifood systems. Guided by its *Strategic Framework 2022–2031*, and the newly adopted *FAO Framework on Inclusion* (2025), FAO supports Members to identify and address structural barriers that prevent equitable participation and benefit-sharing across agrifood systems. The Framework on Inclusion provides

a conceptual and operational foundation for mainstreaming inclusion in FAO's programmes and partnerships, sharpening targeting strategies to prioritize poor and extremely poor people, the food insecure and those that face disadvantage, marginalization, discrimination and/or vulnerability within its main target group consisting of small-scale producers and other actors in the agrifood chain. This Framework also calls for addressing the structural causes of inequalities and discrimination through programmatic work, advocacy and policy engagement as well as to adopt inclusive approaches to enhance people's agency, voice, participation, collective action and decision-making power.

Building on these commitments, FAO works with governments to promote inclusive agrifood systems and rural transformation through integrated approaches that expand access to land, finance, technology, information, services, institutions and markets for poor, marginalized and vulnerable small-scale producers. *The Committee on World Food Security (CFS) policy recommendations on Reducing Inequalities for Food Security and Nutrition* (2024), developed with FAO technical support, provide a globally endorsed framework to address the systemic drivers of inequality within agrifood systems.



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↑ **FAO is also stepping up efforts to enhance disability inclusion in its programmatic work and internal processes. It is committed to implementing the *UN Disability Inclusion Strategy* (UNDIS), and contributes to the UN-wide annual UNDIS reporting organized by the UN Secretary-General's Office. FAO also participates in the UN Interagency Group on Disability Inclusion and Gender Equality, which was initiated by UN Women.**

FAO also advances inclusion through targeted flagship initiatives and analytical work. *The status of women in agrifood systems* (2023), *The status of youth in agrifood systems* (2025) and *The status of land tenure and governance* (2026) reports provide evidence to guide countries in closing gender and generational gaps in agrifood employment, wages and asset ownership. The *FAO Migration Framework* supports policies that enhance the benefits of safe, orderly and regular migration, strengthen rural–urban linkages and protect the rights of migrant and seasonal workers. Through its programmes on decent rural employment, social protection and inclusive value chains, FAO helps countries design context-specific solutions that empower smallholders, expand social and economic inclusion, and foster equitable growth.

Through its Investment Centre, FAO mobilizes multidisciplinary expertise, including sociology and livelihoods experts, to support inclusive enabling policies and public and private investment. This work spans up to 120 countries annually and encompasses a range of analytical efforts. Some examples are FAO's three part e-learning series "Social analysis for inclusive agrifood investments", which includes a manager's guide, a field guide and a practitioner's guide, the Agriculture Human Capital Investment (AHCI) series, and publications such as the 2024 report on *Land tenure for Indigenous and Afro-descendant Peoples*. In addition, FAO is increasingly focused on strengthening access to finance. The Organization is actively engaging with diverse and innovative finance mechanisms and partners, such as microfinance institutions, impact funds, national development banks and local financial institutions. These collaborations aim to unlock critical public and private capital and increase access to finance in countries, so that it may reach underserved farmers and small- and medium-sized enterprises (SMEs).

At global level, FAO further contributes to the implementation of SDG 10 through normative and coordination roles across the UN system, supporting the effective integration of low-income countries in the multilateral trading system. This is achieved through the provision of analysis, through e.g. the biennial *State of Agricultural Commodity Markets* reports, capacity building and technical assistance, and facilitation of dialogues. For example, FAO supports the creation of expert networks at regional level or multistakeholder platforms, such as the World Banana Forum (WBF). Through the Hand-in-Hand Initiative and the 1000 Digital Villages Programme, FAO additionally supports targeted investments and digital inclusion strategies in regions where poverty and inequality are most pronounced. Together, these efforts advance the realization of SDG 10 and the broader vision of the 2030 Agenda – to build fair, inclusive and sustainable agrifood systems that leave no one behind.

Data highlights

Inequality within and among countries continues to hinder progress towards inclusive and sustainable agrifood systems. **The richest 10 percent of the global population receive 52 percent of total income, while the poorest half earn only 8.5 percent.**[2]

In 2025, 831 million people, or 10.1 of the population, were living in extreme poverty (below USD 3 per day [2021 purchasing power parity]).[3] Extreme poverty remains predominantly rural, affecting populations who depend on agrifood systems for their livelihoods. In low-income countries, rural poverty rates are up to three times higher than urban rates due to limited access to services, infrastructure and markets.[4] Such territorial inequalities drive migration, deepen poverty traps, including increasing the risk of child labour, and perpetuate exclusion.

> Inequality is compounded by structural discrimination and exclusion. **Indigenous Peoples account for 18.7 percent of people in extreme poverty across 23 countries** and informal employment is 25 percentage points higher among Indigenous women than among non-Indigenous women.[5]

In rural areas, persistent inequalities in access to resources constrain transformation. 85 percent of farms worldwide are two hectares or less, producing roughly 35 percent of the world's food[6] – yet fewer than 10 percent of smallholders in sub-Saharan Africa have access to formal credit.[7] Rural youth and women are further disproportionately excluded from access to credit, but also in access to fertilizers, improved seeds, mechanization and livestock assets.[7]

The *Status of Land Tenure and Governance* (2026) reveals that agricultural land concentration is high: **the largest 10 percent of holdings operate 89 percent of land when aggregated globally, while the smallest 40 percent operate just over one percent of land**. Land inequality appears even more pronounced when factors such as land rights, land quality and landlessness are taken into account. The report also shows that women worldwide are significantly less likely than men to own or have secure rights to agricultural land, with the gender gap exceeding 20 percentage points in nearly half of the countries with data.[8]

Digital transformation offers new opportunities yet divides in access to technology risk deepening inequality. **Only half of rural populations globally have internet access, with the gap widest in Least Developed Countries (LDCs) and Africa.**[9] The gap in mobile internet use between women and men narrowed from 25 to 16 percent between 2017 and 2021, but **rural women and youth remain digitally excluded in many regions**.[7]

80 percent of migratory movements are linked to rural areas as places of origin or destination.[10] Emigration can challenge rural areas, with the loss of productive work force, and, the same time, **one-third of global remittances goes to rural areas, helping to improve livelihoods and food security. Digital remittances are reducing costs (SDG Target 10.a), from approximately. 6.4 percent to 3.5 percent**, increasing security and access for recipients in rural areas.[11]



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↑ **There are 476 million Indigenous Peoples around the world, living in more than 90 countries. Their territories cover around a quarter of the earth's surface and are home to over 80 percent of global biodiversity, thanks to traditional knowledge and sustainable resource management systems. Yet their rights and governance structures often remain unrecognized.**[12]

Key challenges

Unequal exposure and adaptive capacity to shocks and crises

Inequalities worsen in situations of conflict, protracted crises and occupation, where violations of humanitarian law — such as restrictions on food, water, land and livelihoods — hit rural poor, women, youth and Indigenous Peoples the hardest. Stronger rights-based monitoring and accountability are needed to ensure humanitarian access, protect civilians and safeguard access to land and resources. In addition, poor and marginalized rural populations bear the greatest climate losses: poor, female- and youth-headed households experience the largest on-farm income losses due to climate stressors. The 2024 FAO report, *The unjust climate – Measuring the impacts of climate change on rural poor, women and youth*, found that in an average year, poor households lose 5 percent more of their total income due to heat stress compared to better-off households, and 4.4 percent due to floods. Despite this, rural populations are under-represented in national climate policies.[13] Anticipatory action and risk management systems remain insufficiently inclusive, and climate and disaster policies rarely target the specific vulnerabilities of rural poor, women or youth. The lack of equity-focused approaches in climate adaptation and resilience planning reinforces poverty traps and livelihood precarity.

Limited policy coherence for inclusion

Inequalities are perpetuated by fragmented governance and policy incoherence across sectors such as agriculture, labour, environment and social protection. National strategies often lack mechanisms to integrate inclusion principles or to systematically monitor inequality outcomes in agrifood systems and, in many countries, there is weak alignment between climate, gender, youth, trade, agriculture and poverty policies. Limited participation and representation of marginalized groups, including small-scale producers in policy and decision-making processes at local, national and global levels leads to policies that do not reflect diverse realities, while inadequate data disaggregation masks intersecting inequalities.

Commodity dependency and high exposure to external shocks

Inequalities between countries can worsen when low-income nations lack strong productive capacities, which limits their ability to diversify exports and move up value chains, leaving them dependent on a few commodities. Such dependence makes them more vulnerable to price swings and trade disruptions, which can reduce incomes and weaken governments' ability to respond to shocks.

Way forward

Embed inclusion across agrifood policies and governance: It is essential to integrate equity and non-discrimination across agriculture, environment, labour and social protection policies. Farmers' organizations, cooperatives, women's groups, youth networks and Indigenous Peoples must be included in decision-making across local, national and global governance spaces. Strengthening participatory and bottom-up community development processes and inclusive community-based organizations is key to promote the collective action of the poor and marginalized people. Additionally, territorial governance approaches can help bridge the persistent rural–urban divide and ensure more equitable distribution of services, infrastructure and opportunities. Inequalities in agrifood systems cannot be solved through technical measures alone; under the International Covenant on Economic, Social and Cultural Rights

(Articles 2 and 11), States must take concrete steps to eliminate structural discrimination that restricts equal access to food, resources and services. This grounding in human rights provides a clear normative basis for equity-focused agrifood policies.

Redistribute resources and opportunities: Land and tenure reforms that secure access and rights for marginalized groups, coupled with policies that enable fair value chain governance, can help ensure that smallholders, women, Indigenous Peoples and youth capture a greater share of agrifood revenues. Equally, subsidies and public investments should be reoriented to avoid regressive outcomes, with support redirected from large-scale producers to those furthest behind.

Recognize rights, identities and diverse knowledge systems: The right to adequate food should be reinforced as a universal entitlement with equity at its core, and the rights of Indigenous Peoples and local communities must be safeguarded, acknowledging their contributions to sustainable agrifood systems. Gender-transformative approaches are especially urgent: interventions must go beyond merely "gender-sensitive" programming to tackle structural discrimination and support women's agency, decision-making and economic empowerment.



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↑ **FAO supports countries to scale up investment in agriculture and expand access to finance for smallscale farmers and agrifood SMEs. In Uganda, the AgrInvest Project demonstrated how digital finance can increase access to credit while reducing risks for financial institutions. Financed by the European Union and implemented together with the Uganda Development Bank (UDB) and the United Nations Capital Development Fund (UNCDF), the initiative strengthened UDB's capacity to invest in agriculture by improving loan appraisal, expanding the agricultural lending pipeline, enhancing risk analysis including climate risk and promoting fintech solutions for agri-lending. Through pilot partnerships with local digital finance startups, farmers accessed digital loans with fair terms, no collateral and low cost transactions, while UDB expanded its portfolio among smallscale farmers. The launch of UDB's AgriConnect digital lending platform in 2023 illustrates a scalable model that can be replicated by public development banks, contributing to poverty reduction, food security and climate resilience while creating more equitable financial opportunities in rural areas.**

Strengthen access to finance: In line with the *CFS Voluntary Guidelines on Tenure* and the *CFS Policy recommendations on reducing inequalities for food security and nutrition*, governments should close gender and generational gaps in access to credit and insurance for smallholders, and promote inclusive financing models that reach women, youth and marginalized rural producers.

Promote inclusive integration into global and regional markets: Participation in the multilateral trading system should be strengthened through the effective use of the Special and Differential treatment provisions of the World Trade Organization (WTO), enabling LDCs to integrate more equitably into global markets. Targeted support to enhance productive capacities, diversify exports and strengthen smallholder participation in global and regional value chain help ensure that trade becomes a driver of inclusive growth and promotes resilience to external shocks.

Promote equitable and decent rural employment: Expanding decent work opportunities in agrifood systems, particularly for youth and women, requires coordinated investment in skills development, social protection and enterprise support. Employment policies should address informality, wage discrimination, and the care burden that limits women's participation in the labour force.

Integrate equity into climate and resilience strategies: National adaptation and mitigation plans should include equity criteria and explicitly target rural poor, women, and youth as beneficiaries of climate finance and risk management mechanisms. Inclusive anticipatory action and disaster-risk governance can prevent climate shocks from widening existing inequalities.

Embed equity into social protection and public policies: Equity must also be embedded into social protection and wider public policies. Scaling up nutrition-sensitive, gender-responsive and shock-responsive social protection can empower marginalized households while protecting them from risks. At the same time, climate and trade policies should be designed with explicit attention to their inequality impacts, ensuring that no one is excluded or disadvantaged by policy reforms. This requires stronger investment in inclusive data systems — such as disaggregated household and territorial data — to monitor inequality dynamics and better target interventions.

Expand inclusive data and accountability systems: Improving disaggregated data by sex, age, disability, geography, and ethnicity is critical to track inequality dynamics across agrifood systems. Countries should invest in inclusive statistics, participatory monitoring, and open data platforms to inform targeted action and hold institutions accountable for progress.

Ensure equitable, gender responsive and inclusive innovation for all: Innovations must be accessible, affordable and equitable, ensuring that small-scale producers, women, youth and marginalized groups are not only beneficiaries but also participants in the innovation journey. This includes the integration of Indigenous Peoples' knowledge ethically into mainstream innovation pathways and co-innovation models that brings local wisdom, ensuring solutions are location-specific and respectful of cultural heritage. AI powered FarmerChat, mobile apps, and real time data visualization tools can also complement traditional learning. These efforts will further integrate grassroot innovation, expand digital inclusion, and apply behavioural science to overcome barriers — ensuring that innovation benefits all.

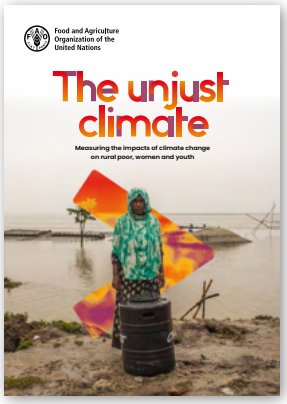
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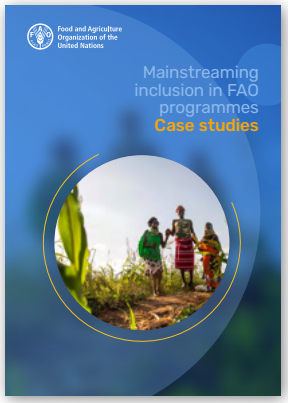
FAO Framework on Inclusion



The State of Agricultural Commodity Markets 2022



The unjust climate. Measuring the impacts of climate change on rural poor, women and youth



Mainstreaming inclusion in FAO programmes

Notes:

1 **CFS. 2024.** *CFS Voluntary Guidelines on Gender Equality and Women's and Girls' Empowerment in the Context of Food Security and Nutrition.* FAO, Rome. https://openknowledge.fao.org/handle/20.500.14283/cd2996en

2 **Chancel, L., Piketty, T., Saez. E. & Zucman, G.** 2021. *World Inequality Report 2022.* Paris, World Inequality Lab. https://wir2022.wid.world

3 **World Bank. 2025.** *Poverty and Inequality Platform.* [Accessed on 8 October 2025.] https://pip.worldbank.org/home

4 **FAO.** 2019. *FAO framework on rural extreme poverty: Towards reaching Target 1.1 of the Sustainable Development Goals.* Rome. https://openknowledge.fao.org/handle/20.500.14283/ca4811en

5 **ILO.** 2019. *Implementing the ILO Indigenous and Tribal Peoples Convention No. 169. Towards an inclusive, sustainable and just future.* Geneva, Switzerland. https://www.ilo.org/publications/implementing-ilo-indigenous-and-tribal-peoples-convention-no-169-towards

6 **Lowder, S. K., Sanches, M. & Bertini, R.** 2021. What farms feed the world and has farmland become more concentrated? In: *World Development*. Rome, Elsevier. https://www.sciencedirect.com/science/article/pii/S0305750X2100067X?via%3Dihub

7 **FAO.** 2023. *The status of women in Agrifood Systems.* Rome. https://doi.org/10.4060/cc5343en

8 **FAO, ILC and CIRAD.** 2026. *The status of land tenure and governance.* Rome and Paris. https://doi.org/10.4060/cd8473en

9 **Hernandez, K., Flynn, J., He, J. & Alsahi, H.** 2024. *Towards digital inclusion in rural transformation.* Rome. https://doi.org/10.4060/cc9816en

10 **FAO.** n.d. *Migration.* [Cited 10 December 2025.] https://www.fao.org/migration/en

11 **IFAD.** 2025. 15 reasons remittances matter. In: *Explainers.* [Cited 10 December 2025.] https://www.ifad.org/en/w/explainers/15-reasons-remittances-matter

12 **FAO.** n.d. *Inclusivity in agrifood systems.* Rome [Cited October 2025.] https://www.fao.org/inclusivity-in-agrifood-systems/en

13 **FAO.** 2024. *The unjust climate – Measuring the impacts of climate change on rural poor, women and youth.* Rome. https://doi.org/10.4060/cc9680en

Food and Agriculture Organization of the United Nations



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FAO and SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable

FAO SDG brief | April 2026

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Urbanization is redrawing the geography of food. As hubs of consumption, innovation and governance, cities are decisive arenas for achieving the 2030 Agenda and what happens in cities increasingly determines what happens across agrifood systems - from what farmers grow and how markets function to what diets prevail and how natural resources are used.

At the same time, agrifood systems intersect with virtually every dimension of urban life – from housing and transport to water, waste, energy and health. How cities plan, govern, and invest in these systems directly affects people's ability to access safe, nutritious and affordable food, and determines the environmental footprint of urban growth.

Rapid urbanization, if unmanaged, can strain local governments' ability to ensure safe, resilient, and inclusive food environments. Yet when governed well, cities can, in turn, be powerful drivers of agrifood systems transformation – linking local demand with sustainable production, fair markets and healthier diets.

Stronger urban agrifood systems also drive rural prosperity by creating stable markets for farmers, improving logistics and storage, reducing post-harvest losses and supporting climate resilience through circular approaches. At the same time, they expand equitable access to healthy diets and green jobs – turning urban growth into a lever for inclusion and sustainability.

Urban and peri-urban forests and greening enhance local food security and promote healthier, more sustainable urban living. Green and productive spaces help to moderate temperatures, reduce stormwater runoff, and improve air quality, thereby strengthening cities' resilience to climate and environmental shocks. Urban and peri-urban forests also enhance biodiversity, provide non-wood forest products and ecosystem services and create public spaces that promote mental and physical well-being.

Urban ecosystems, therefore, are central to achieving inclusive, safe, resilient and sustainable cities — as set out under Sustainable Development Goal (SDG) 11 — and to driving agrifood systems transformation that delivers *better production*, *better nutrition*, a *better environment* and a *better life*, leaving no one behind.

Recognizing cities as the interface between people, ecosystems and sustainable agrifood systems, the Food and Agriculture Organization of the United Nations (FAO) has made sustainable urban development a strategic priority. In 2019, FAO adopted its *Framework for the Urban Food Agenda*, formalizing its approach to urban agrifood systems and its technical role in supporting cities and countries. The following year the FAO Green Cities Initiative was launched, a flagship programme aimed at accelerating the transition towards greener, more resilient and more inclusive cities. Its mission, by 2030, is to generate tangible improvements in the health and well-being of urban dwellers and their surrounding environments in 1 000 cities worldwide by 2030, by strategically integrating urban and peri-urban forestry, urban and peri-urban agriculture and circular bioeconomy practices into urban development strategies.



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↑ **Through the FAO Green Cities Network, more than 300 cities are advancing integrated solutions in urban forestry, agriculture and the bioeconomy. The Network fosters peer learning, technical exchange, city-to-city cooperation and facilitates access to global expertise and funding opportunities, serving as a platform to scale up local action and sustain progress towards greener, healthier and more resilient cities. In Eenhana, Namibia, FAO supports the rehabilitation of public parks and nurseries as part of city-wide climate adaptation planning. Similar initiatives include large-scale tree planting in Kigali (Rwanda) and compost-to-feed systems in Abidjan (Côte d'Ivoire), strengthening urban resilience and sustainability across regions.**



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↑ **In October 2025 FAO convened the First International Green Cities Conference in Rome, which led to a collective call to action, encapsulated in the *Green Cities Communiqué*, for cities, governments and partners to scale up integrated urban solutions contributing to the implementation of the 2030 Agenda. To be presented at World Urban Forum, Baku 2026, the Communiqué calls for stronger connections between urban, peri-urban and rural systems, equitable access to green and healthy environments, increased finance for local climate and biodiversity action and partnerships for impact. Guided by the *FAO Strategic Framework 2022–2031*, underpinned by the *FAO Strategy on Climate Change 2022–2031* and the *FAO Science and Innovation Strategy*, the priorities highlighted in the Green Cities Communiqué, underscores the importance of recognizing cities as key spaces where global sustainable development objectives converge.**

This agenda was further elevated to a strategic priority under FAO's *Strategic Framework 2022–2031*, with *Achieving sustainable urban food systems* recognized as a Programme Priority Area.

Urban and peri-urban forestry provides a key entry point for progress on SDG 11, as trees and green spaces are essential urban infrastructure for healthier, more resilient and sustainable cities.[1] Through its global Urban and Peri-urban Forestry Programme, FAO supports Members in mainstreaming urban forests and trees into urban and territorial planning, promoting policies and investments that strengthen the sustainable management of natural resources in and around cities. The Programme operationalizes several targets of the Kunming–Montreal Global Biodiversity Framework by enhancing ecological connectivity between urban, peri-urban and rural areas, conserving local biodiversity and building resilience to environmental and socioeconomic shocks through integrated urban planning and an ecosystem-based approach.

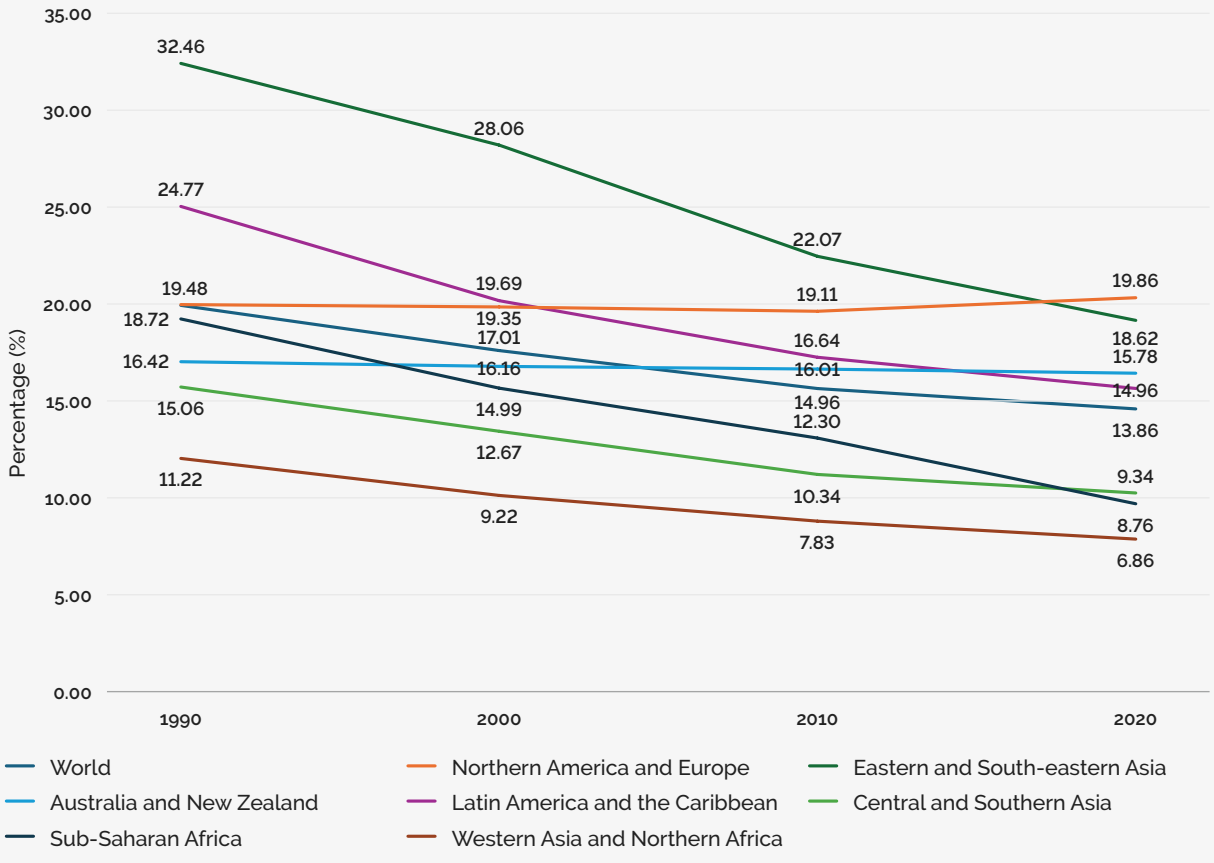
Between 2015 and 2024, FAO implemented **156 urban-related projects** valued at approximately **USD 199 million** across more than 80 countries,[2] reflecting a steady growth in projects, partnerships, and impact. These initiatives have helped cities reduce waste, improve market safety, enhance governance and strengthen urban–rural linkages.

Data highlights

Of the **2.2 billion people experiencing food insecurity globally in 2022, 1.7 billion lived in urban and peri-urban areas**.[3] In 2024, **23.9 percent of urban residents** were moderately or severely food insecure, compared to **28.6 percent in peri-urban areas** and **32 percent in rural areas**. However, there are significant regional disparities: in Africa, more than **55 percent of urban populations** are food insecure, while in Asia, food security has improved primarily in cities.[4]

For urban populations living in poverty, the most easily available and affordable diets tend to be unhealthy. *The State of Food Security and Nutrition in the World 2023* reported on the cost of a healthy diet in urban, peri-urban and rural areas, finding that in low-food-budget countries, the cost of a healthy diet in urban areas was much higher than in peri-urban areas. This cost decreased in tandem with the city size and with proximity to rural areas. Other income groups of urban dwellers often lack access to healthy diets because they can afford the wider offering of highly processed foods found in urban centres, including energy-dense snacks, sweets and sugar-sweetened beverages. These developments have negatively affected obesity levels and health conditions of urban dwellers.[5]

Figure 20. Average share of green areas in cities, 1990–2020



Note: The figure shows regional trajectories of average green-area share (1990–2020), illustrating how continued decline in urban green areas could erode cities' capacity to deliver health, climate and agrifood-system benefits, and highlighting the urgency of integrated urban and peri-urban forestry to reverse this trend and close equity gaps.

Source: Author's own elaboration based on data from *UN-Habitat Urban Indicators Database: Open spaces and green areas.*

Cities account for 70 percent of global energy-related GHG emissions and generate 70 percent of global waste, much of it food and organic matter.[6, 7] Reducing these environmental impacts of cities through innovative and sustainable solutions is key to agrifood systems transformation, particularly through the circular bioeconomy.

Some **35 percent of the world's largest cities are built in the world's drylands**. This includes megacities such as Cairo, Mexico City and New Delhi. Urban and peri-urban forestry can make a significant contribution to strengthening the resilience of dryland cities, as well as all other types of cities, by mitigating the adverse effects of climate change and natural disasters and providing access to green public spaces.[8] **Urban and peri-urban forestry can reduce air temperatures by up to eight degrees Celsius, reduce stormwater flows and improve air quality by filtering dust and pollutants.**[9]

Urban nature is under pressure worldwide (Figure 20). Satellite-based analyses show that, **while some cities have increased residents' exposure to green space, many still lack sufficient tree canopy and face large inequities in access, especially across the Global South.**[10, 11] For example, across multiple cities, neighbourhood-scale assessments reveal that most areas fail to meet standard canopy benchmarks, underscoring persistent structural deficits even where greening activities have occurred.[12] These shortfalls leave urban dwellers more exposed to heat, flooding and air pollution, particularly in rapidly urbanizing regions.[10]



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↑ The Green Urban Oases Programme, launched in 2023, supported cities in Jordan, Mongolia, Namibia and Tunisia in integrating urban forestry into climate adaptation and territorial planning, while collaboration with the Global Environment Facility and the Green Climate Fund continues to open access to finance for sustainable city projects in Algeria, Zimbabwe, Chile and Eswatini. At the global level, FAO promotes policy dialogue and knowledge exchange through the World Forum on Urban Forests and the Tree Cities of the World Programme (implemented in partnership with Arbor Day Foundation), mobilizing municipalities worldwide to enhance urban forestry governance and ensure more equitable access to the benefits that urban nature provides.

Key challenges

Urban growth outpaces services and undermines food system resilience

Urban growth, particularly in low- and middle-income countries, frequently outpaces the capacity of municipal authorities to provide adequate access to housing, infrastructure and public services. This often results in overcrowded living conditions and the expansion of informal settlements. Approximately 1.12 billion people now live in slums or informal settlements,[13] and this number is projected to nearly double by 2050.[14] Rapid urbanization reshapes agrifood systems, driving shifts in diets, food environments, retail and supply chains. Furthermore, as cities sprawl, farmland, wetlands and peri-urban forests are converted into housing and infrastructure, while green public spaces are increasingly reduced or degraded. The loss of urban nature makes cities less healthy places to live, with direct consequences for public health and the quality of life of their residents, and weakens essential ecosystem functions, such as flood regulation, air and water purification and habitat connectivity, reducing cities' ability to withstand extreme weather events. These pressures undermine local food production and disrupt short supply chains, exacerbating risks to food security and nutrition in rapidly growing urban areas.



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↑ The FAO Food for the Cities Programme is a global knowledge and exchange hub that connects cities, academia, civil society and the private sector. It enables peer-to-peer learning, technical collaboration, and the sharing of good practices to build sustainable, people-centred urban agrifood systems.

Weak urban governance slows integrated planning for sustainable food systems

Urban authorities frequently lack the financial resources, technical expertise, or institutional coordination necessary to implement long-term, integrated urban agrifood systems planning strategies. Moreover, responsibilities for land use, green infrastructure and agrifood systems are often divided among multiple agencies and levels of government. Addressing these governance gaps will require innovative approaches, multilevel cooperation and sustained investment, alongside mechanisms to monitor progress and ensure accountability.

Underinvestment in urban green spaces

Urban trees and green spaces are still undervalued in public policy and budgeting. Their economic, health and climate benefits are rarely quantified or included in municipal accounting, even though, for example, expanding urban green spaces can substantially lower heat-related mortality and reduce energy demand. This has led to chronic underinvestment and weak maintenance. As a result, cities often underinvest in green and productive spaces and lack the technical capacity to manage them sustainably.

Way forward

Integrate agrifood systems into urban and territorial planning: Embedding agrifood system considerations into urban and territorial plans is necessary to safeguard peri-urban agricultural land and green corridors, which help secure food supply and maintain vital ecosystem services. Urban and peri-urban agriculture and forestry are also important to enhance access to nutritious foods and strengthen resilience to shocks.

Link public demand to sustainable supply: Cities can use nutrition sensitive public procurement and school meal programmes to connect local producers with urban consumers. Strengthening urban markets and investing in renewable energy cold chains can further reduce losses and improve food access for all.

Close the loop through circular bioeconomy: Cities can advance a circular approach by focusing on reducing food loss and waste and ensuring that organic residues are transformed into compost, biofertilizer or bioenergy. Scaling these practices also support green jobs for youth and women in recycling, waste valorization and clean energy.

Strengthen multilevel governance and finance: Cities can reinforce governance by institutionalizing city region food strategies that align municipal plans with national climate, nutrition and biodiversity commitments. Cities may be supported to develop bankable projects, access domestic and international funds and attract blended public private investment for sustainable urban food and green infrastructure by enhancing municipal finance and investment readiness.

Promote urban and peri-urban forestry: Integrating urban forestry into territorial planning, infrastructure investment and local food strategies can reinforce urban–rural linkages, reduce environmental inequalities and expand access to green benefits. This requires integrated planning frameworks, long-term public investment, and multilevel governance mechanisms that connect national strategies with local implementation. Building institutional capacity, mobilizing private finance, and engaging and empowering communities to co-manage green spaces are critical to sustaining these systems over time and ensuring that the benefits of urban nature are equitably distributed across all neighborhoods and that green infrastructure becomes a core component of resilient and inclusive urban agrifood systems.

Foster cross-sectoral integration for resilient urban agrifood systems: The complexity of urban challenges calls for integrated approaches

that connect food, water, energy, waste, forests and land-use planning. Under the FAO Green Cities Initiative, cities are demonstrating how coordinated action across these sectors can yield multiple co-benefits, from improved diets and reduced waste to enhanced resilience and green jobs. Integrating urban forestry, urban agriculture and circular bioeconomy interventions within one planning framework allows cities to maximize resource efficiency and reduce trade-offs between competing land uses. This requires coherent governance, capacity development and collaboration across ministries, municipalities, academia, civil society and the private sector. Strengthening these linkages not only supports SDG 11 but also accelerates progress towards SDG 2 (Zero Hunger), SDG 13 (Climate Action) and SDG 15 (Life on Land).

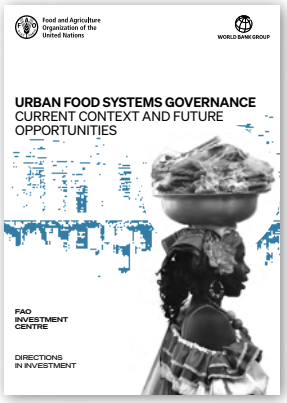
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Urban and peri-urban agriculture sourcebook



Urban forests: a global perspective



Urban food systems governance



The State of Food Security and Nutrition in the World 2023

Notes:

1 **FAO.** 2016. Guidelines on urban and peri-urban forestry. *Forestry Paper* No. 178. Rome. https://openknowledge.fao.org/handle/20.500.14283/i6210e

2 **FAO.** 2025. *Brief on FAO's work on urban agrifood systems – Unpacking FAO's urban-related portfolio.* Rome. https://openknowledge.fao.org/handle/20.500.14283/cd5735en

3 **HLPE.** 2024. *Strengthening urban and peri urban food systems to achieve food security and nutrition, in the context of urbanization and rural transformation.* Rome. https://openknowledge.fao.org/handle/20.500.14283/cd1459en

4 **FAO, IFAD, UNICEF, WFP & WHO.** 2025. *The State of Food Security and Nutrition in the World 2025 – Addressing high food price inflation for food security and nutrition.* Rome. https://doi.org/10.4060/cd6008en

5 **FAO, IFAD, UNICEF, WFP & WHO.** 2023. *The State of Food Security and Nutrition in the World 2023 – Urbanization, agrifood systems transformation and healthy diets across the rural–urban continuum.* Rome. https://doi.org/10.4060/cc3017en

6 **FAO.** 2019. *FAO framework for the Urban Food Agenda.* Rome. https://doi.org/10.4060/ca3151en

7 **FAO.** 2020. *FAO Green Cities Initiative – Green Cities Action Programme: building back better.* Rome. https://openknowledge.fao.org/handle/20.500.14283/cb0848en

8 **FAO.** 2022. *Urban forestry and urban greening in drylands - Improving resilience, health, and wellbeing of urban communities. A background document for the Green Urban Oases Programme.* Rome. https://doi.org/10.4060/cc2065en

9 **FAO.** n.d. *Green Cities Initiative.* [Cited 23 September 2025.] https://www.fao.org/green-cities-initiative/en

10 **Wu, S., Chen, B., Webster, C., Xu, B. & Gong, P.** 2023. Improved human greenspace exposure equality during 21st-century urbanization: an analysis of 1 028 global cities. *Nature Communications*, 14(1) : 6460. https://doi.org/10.1038/s41467-023-41620-z

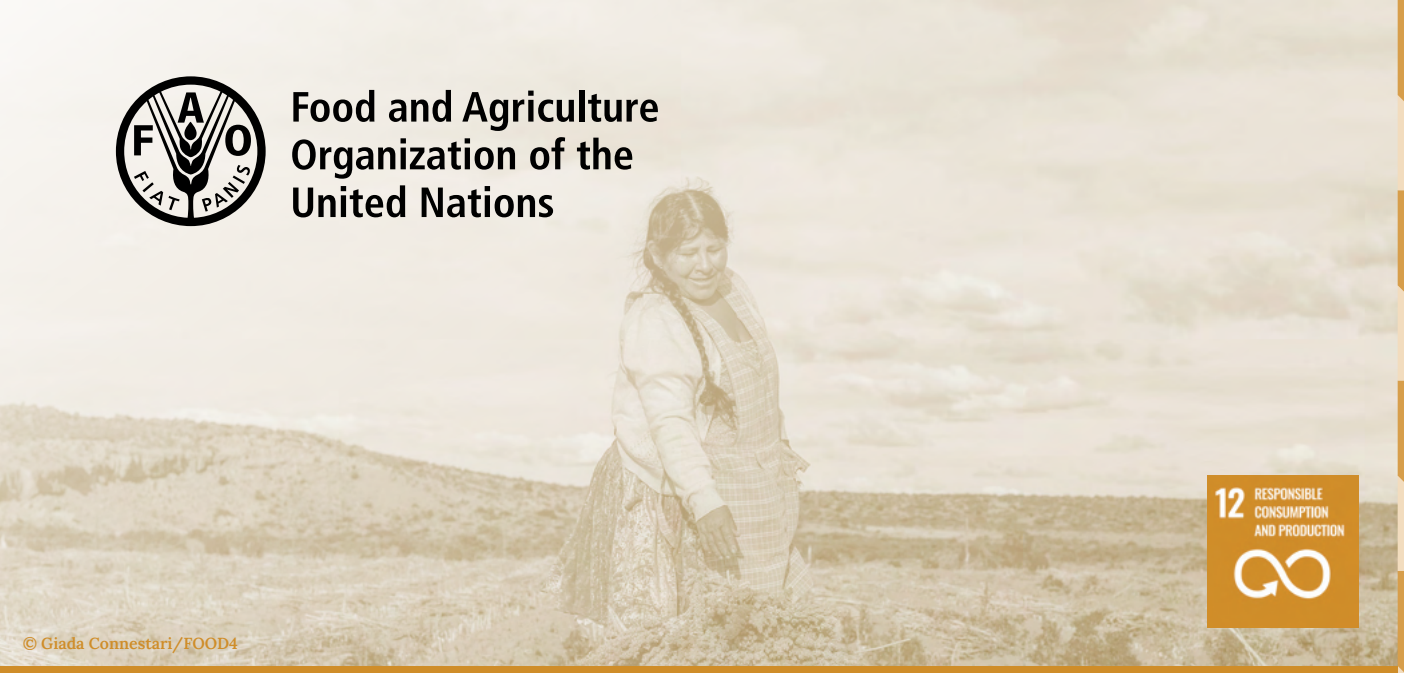
11 **Chen, B., Wu, S., Song, Y., Webster, C., Xu, B. & Gong, P.** 2022. Contrasting inequality in human exposure to greenspace between cities of Global North and South. *Nature Communications*, 13(1): 7131. https://doi.org/10.1038/s41467-022-32258-4

12 **Croeser, T., Sharma, R., Weisser, W. W. & Bekessy, S. A.** 2024. Acute canopy deficits in global cities exposed by the 3-30-300 benchmark for urban nature. *Nature Communications*, 15(1): 9333. https://doi.org/10.1038/s41467-024-53402-2

13 **United Nations.** 2025. *The Sustainable Development Goals Report 2025.* New York, USA. https://unstats.un.org/sdgs/report/2025/

14 **United Nations.** 2023. *The Sustainable Development Goals Report 2023.* Special Edition. New York, USA. https://unstats.un.org/sdgs/report/2023/The-Sustainable-Development-Goals-Report-2023.pdf

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FAO and SDG 12: Ensure sustainable consumption and production patterns

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Ensuring and accelerating the transformation towards sustainable consumption and production in agrifood systems, as called for under Sustainable Development Goal (SDG) 12, requires a fundamental shift in how we produce, transport, store and consume agrifood products, and how these value chains steps are integrated to reduce pollution and waste. The transition to sustainable consumption and production lies at the heart of agrifood systems transformation, ensuring that natural resources are managed efficiently and human and planetary health are safeguarded while enabling inclusive and resilient growth.

True cost accounting applied in recent *State of Food and Agriculture* reports (2023 and 2024) reveal that the hidden costs of existing agrifood systems, in terms of the health impacts, environmental degradation and social inequalities, amount to an estimated USD 12 trillion per year. These findings underscore the need to redirect policies and incentives towards sustainable production and consumption. *The State of Food and Agriculture* 2025 also presents the issue of land degradation, in part caused by pollution, waste and inefficient nutrient management, and runoff.

Sustainability, as a core element of the right to adequate food, demands that agrifood systems be designed and governed to preserve the availability, accessibility and adequacy of food for present and future generations. Circularity is an important element of this. For example, reducing waste through bioeconomy solutions can help in ensuring an integral use of resources, thus improving food availability, access and nutrition.

The Food and Agriculture Organization of the United Nations (FAO) supports countries in advancing sustainable consumption and production as part of its mandate to transform agrifood systems and realize the human right to adequate food.

Reducing food loss and waste is central to improving access to nutritious diets, protecting natural resources and lowering greenhouse gas (GHG) emissions. FAO serves as custodian of SDG Indicator 12.3.1, monitoring and reporting progress on food loss and waste while implementing programmes and partnerships that address critical loss points along value chains and promote efficient use of food resources and other biological resources. FAO is strengthening countries' statistical capacity to measure food losses along the supply chain through the Global Strategy to Improve Agriculture and Rural Statistics and the 50x2030 Initiative. In addition, FAO, also manages the Food Loss and Waste database, the largest online collection of data – on both food loss and food waste – reported in scientific journals, academic publications and grey literature across food products, stages of the value chain and geographical areas.

Sustainable public food procurement provides a powerful policy lever to shift both production and consumption patterns. Through sound regulatory and institutional frameworks, governments can influence what food is purchased, from whom, and under which production practices, stimulating demand for nutritious, local and sustainably produced food and sending clear signals to markets about the desired direction of agrifood system transformation. FAO helps governments design and implement sustainable public food procurement policies that link institutional demand to local smallholders, promote diversified and healthy diets, and create markets for environmentally sustainable products. FAO's work in this area covers in particular school food and nutrition, but also other public institutions' initiatives.

The **sustainable bioeconomy** represents a game-changer in accelerating the transformation of agrifood systems by enhancing resource efficiency, mitigating climate change, conservating biodiversity and simulating economic growth. FAO supports countries in developing and implementing national and regional bioeconomy strategies and action plans that enhance resource efficiency. Its technical assistance helps policymakers to integrate sustainability criteria across sectors and to promote bio-based alternatives to fossil-derived inputs, including bioinputs (biofertilizers, biostimulants and biological pest controls), bio-based textiles, wood and non-wood forest products, natural cosmetics, bio-based plastic alternatives, etc. It implements projects and programmes to promote the valorization of agricultural residues and food processing by-products into a range of materials, creating new value chains. FAO also participates in dialogues and coordination through global platforms such as the International Sustainable Bioeconomy Working Group, the Global Bioenergy Partnership, the International Bioeconomy Forum and the Advisory Committee on Sustainable Forest-based Industries, among others, supporting knowledge sharing and innovation across regions.

FAO supports countries in **preventing plastic pollution and improving the life-cycle management of plastics used in agriculture**. *The Provisional Voluntary Code of Conduct on the Sustainable Use and Management of Plastics in Agriculture* provides a framework for national regulation, responsible design and manufacture, labelling, recycling and environmentally sound disposal. Technical support is provided for the adoption of alternative materials, improved waste collection and the development of standards and monitoring systems to reduce the environmental footprint of agricultural plastics.



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↑ **Family farmers are central to sustainable production and consumption, linking food, nature and community. As the backbone of global food production, they sustain local economies, preserve biodiversity and provide vital public goods for society. Through the United Nations Decade of Family Farming (UNDFF), 2019-2028, countries are strengthening policies and investments to unlock their full potential. FAO, together with IFAD, leads the Joint Secretariat of the UNDFF, facilitating global coordination, policy support and knowledge exchange. To date, 16 national and 3 sub-national action plans are guiding efforts in 46 countries, supported by over 90 coordination mechanisms and more than 1 500 actors engaged in dialogue platforms worldwide.**

FAO promotes the **sound management of agricultural inputs and chemicals** throughout their life cycle (SDG Target 12.4), strengthening national legislation and regulatory systems in line with international conventions. Technical guidance and capacity development support the reduction of risks from hazardous pesticides, the promotion of biological alternatives such as bio-based materials and integrated pest management, and the responsible trade and use of chemicals under the Rotterdam Convention.

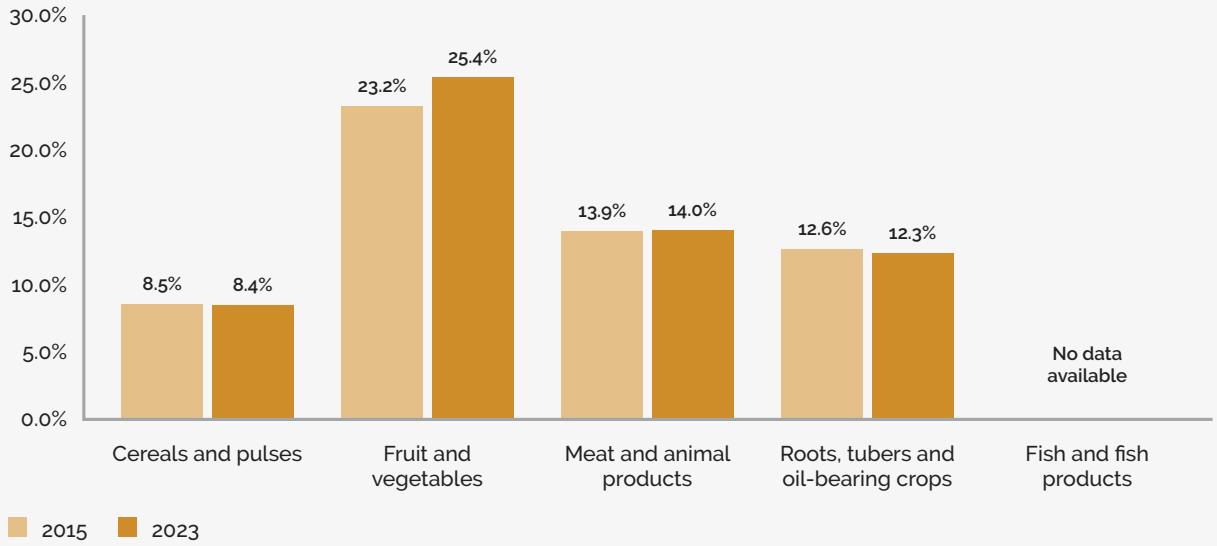
The **10-Year Framework of Programmes (10YFP)** and it's One Planet network provide a framework and platform for the global, multistakeholder and action-oriented movement needed to achieve the shift to sustainable consumption and production, directly contributing to SDG Target 12.1. FAO is an active member of the 10YFP Sustainable Food Systems (SFS) Programme to support promoting a 'systems-based' approach, through collaboration on joint on-the-ground activities, research initiatives and advocacy efforts in support of more coherent and holistic policies to address complex agrifood systems challenges.

Data highlights

The percentage of food lost globally after harvest on farm, transport, storage, wholesale and processing levels was estimated at 13.3 percent in 2023.[1] These estimates do not capture any reductions in food loss globally since SDG Target 12.3 was endorsed. In addition, **19 percent of all food available to consumers was wasted in 2022**, across retail, food service and households. **This amounts to 1.05 billion tons or 132 kg of food per person** – even as 1 in 11 people worldwide go hungry and 1 in 3 cannot afford a healthy diet. This waste, combined with the forementioned supply chain losses, drives 8–10 percent of global GHG emissions and squanders vast amounts of land, water and resources. The economic cost exceeds USD 1 trillion annually.[2]

> Fruits and vegetables have the highest loss patterns among commodity groups, due to their high perishability and handling requirements. **25.4 percent of fruits and vegetables were lost or wasted in 2023.**[1]

Figure 21. Global food loss percentages, by food group (2015, 2023)



Source: Adapted from FAO. 2025. *Tracking progress on food and agriculture-related SDG indicators 2025*. Rome. https://doi.org/10.4060/cd5832en

Sustainable public procurement is increasingly recognized for its importance as a driver of sustainable production and consumption. **In 2021, Food and catering services have risen to sixth place among government priorities for sustainable public procurement, up from eight in 2017.**[3]

Advancements have also been made on the sustainable bioeconomy: **as of 2025, 27 countries and 3 regions are implementing specific bioeconomy strategies, 14 countries are actively developing their bioeconomy strategies** and several countries have integrated bioeconomy into their national food systems transformation pathways, nationally determined contributions (NDCs), Long-Term, Low Emissions Development Strategies, among other policy instruments. In particular, 36 NDCs mention bioeconomy, signaling its integral role in a low emissions future.[4]

> Plastics have become deeply embedded in agriculture – yet, despite their role in boosting productivity, they also contribute to environmental degradation and persistent soil contamination. FAO estimates that every year **agricultural value chains use 13.4 million tonnes of plastic products in plant and animal production**. The crop production and livestock sectors are the largest users, accounting for 10 million tonnes per year collectively, followed by fisheries and aquaculture with 2.1 million tonnes and forestry with 0.2 million tonnes. **A further 37.3 million tonnes is then used in food packaging.**[5]

International environmental agreements like the Basel, Rotterdam, Minamata, Montreal and Stockholm Conventions are essential tools to protect health and ecosystems by ensuring transparency, shared responsibility and global cooperation in the trade and management of hazardous waste and other chemicals. **Parties to key chemical and waste agreements demonstrating strong commitment: As of 2024, 94 percent of countries under the Minamata Convention had nominated focal points and 82 percent submitted national reports. The Basel Convention hit a milestone with 70 percent reporting compliance in 2020, while the Montreal Protocol maintains a perfect 100 percent reporting rate.**[2]



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↑ The Rotterdam Convention, in force since 2004, is a multilateral environmental agreement that promotes shared responsibility and informed decision-making in the international trade of hazardous chemicals through the Prior Informed Consent (PIC) procedure. The Convention covers pesticides and industrial chemicals banned or severely restricted for health or environmental reasons. FAO, together with the United Nations Environment Programme (UNEP), provides the secretariat of the Convention, supporting Parties in implementation and capacity building. As of 2025, the Convention has 167 Parties and 55 chemicals listed in Annex III, all subject to the PIC procedure.[6]

Key challenges

Data gaps limit action on food loss and waste

Effective and coherent policymaking and intervention design for food loss and waste depend on understanding whether initiatives achieve their objectives, which requires accurate measurement of the scale and location. However, current data gaps pose significant obstacles, which stem from methodological complexities, the high costs of measurement and the widely varied data availability across countries, commodities and stages of the supply chain.

Fragmented policies slow the shift to sustainable consumption and production

Sustainable consumption and production require a holistic approach to the entire agrifood system, yet implementation is impeded by overlapping mandates and the absence of integrated strategies linking SDG 12 targets with those on food security, climate and biodiversity. The diversity of actors involved, from regulators, financial institutions, producers, researchers and consumers, often pursuing different priorities, from food

security and cost-effectiveness to innovation, commercialization and compliance, leads to trade-offs and fragmented action. Insufficient coordination among ministries and weak local governance mechanisms hinders the mainstreaming of resource-efficient and circular practices into national development plans. As a result, national policies on agriculture, food, trade, energy and waste management often remain poorly aligned.

Low investment in circular and resource efficient practices

Investment patterns continue to favour conventional, resource-intensive production. Micro-, small- and medium-sized enterprises (MSMEs) face a persistent financing gap and limited access to affordable credit and to leasing and green investment instruments which are needed to upgrade equipment or adopt cleaner technologies. Public budgets for sustainable procurement, waste management and recycling infrastructure remain inadequate, while sustainability criteria are rarely embedded in fiscal and trade policies. These structural gaps weaken incentives for circular practices along the agrifood chain and limit the availability of sustainable products.



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↑ FAO launched the Food Loss App (FLAPP) in 2023 – a free, easy-to-use, and data-driven mobile tool that tracks and analyses food losses across the entire value chain. Honored as a Champion Project in the E-Agriculture category of the World Summit on the Information Society Prizes 2025, FLAPP is building a growing global dataset and public good, deepening understanding of where, how and why losses occur, and enabling targeted action. Today, it operates in over 38 countries, supports 13 key crops, and serves as a collaborative platform offering practical solutions to reduce food losses, improve food security, enhance sustainability and cut GHG emissions. Building on this, FAO launched Optiwaste in 2025, a free, user-friendly and data-driven tool that helps organizations, food services and institutions make informed decisions to cut food waste. Designed to strengthen food security, lower costs and reduce environmental impacts, Optiwaste enables users to track where, when and why food waste occurs across different service points. By offering practical analytics by service point and food group, the tool empowers users to implement effective solutions and enhance sustainability throughout the service chain.

Way forward

Institutionalize true-cost accounting and strengthen data systems: Mechanisms for full-cost valuation of agrifood systems should be developed to account for environmental, health and social externalities. Data systems should be enhanced to monitor resource efficiency, waste reduction and pollution, using harmonized indicators and open data platforms. Data can also help in land use planning for designing integrated bioeconomy value chains that optimize biomass and nutrient flows. Improved data collection and analysis are essential for evidence-based decision-making and for tracking progress towards SDG 12.

Strengthen policy coherence and integrated governance to address food loss and waste: Tackling food loss and waste requires a holistic, integrated and systemic approach, one that brings together governments, businesses, research institutions, academia, civil society and consumers. No single actor can solve this challenge alone. Collaboration across the food chain, network-building, awareness-raising, stakeholder dialogue and scaling up proven solutions are all essential to reducing food loss and waste.

Embed sustainability criteria in public procurement: Scaling up sustainable public food procurement requires strong policy frameworks that integrate sustainability criteria into procurement laws and guidelines. Building institutional capacity and providing training for procurement officers are essential to ensure compliance and effective implementation. Additionally, fostering market readiness through support for smallholder farmers and local suppliers helps create inclusive supply chains that deliver nutritious, environmentally friendly food.

Scale up investment in bioeconomy solutions that improve resource use efficiency: Dedicated financing windows and risk-sharing mechanisms should be established to promote innovation in bio-based products, bioenergy and other materials from valorizing unavoidable waste to improve resource use efficiency and circular nutrient management. Public–private partnerships, blended finance and green credit lines should be expanded to stimulate sustainable business models and reduce dependence on fossil resources.



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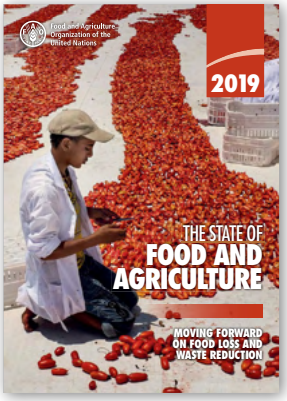
↑ FAO developed the *Voluntary Code of Conduct for Food Loss and Waste Reduction* in 2021. The Voluntary Code sets out a generic framework of actions and guiding principles that should be followed to reduce food loss and waste and support the transformation of agrifood systems to be more efficient, inclusive, resilient and sustainable. Governments can use the framework as a basis for the development of strategies, policies and legislations, which are critical elements of intervention packages aimed at effectively and sustainably reducing food loss and waste. The framework can also serve for the formulation of programmes on food loss and waste reduction and for the preparation of technical guidelines for use by practitioners.

Develop regulatory and incentive frameworks for sustainable materials management: Economic instruments such as extended producer responsibility and ecodesign requirements should be adopted to promote circularity and minimize pollution of soils and water and its effect on human, animal and plant health. Strengthening consumer awareness of foods and products that support local traditions, add value to local biomass and promote responsible consumption is equally important, since informed demand can reinforce investment in nutritious, sustainable options and help build trust in local agrifood systems.

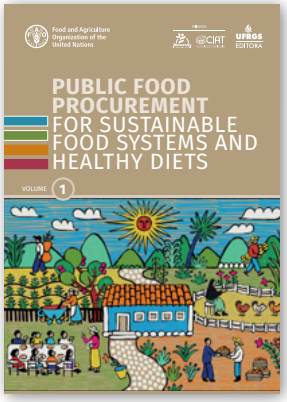
Strengthen national regulatory frameworks in line with international chemical control agreements: Effective chemical management within agrifood systems requires strengthening national regulatory frameworks and aligning them with international agreements like the Rotterdam Convention. Building institutional and technical capacity for risk assessment, monitoring and enforcement is key to reducing harmful impacts on health and ecosystems. Promoting information exchange and stakeholder engagement ensures transparency and supports informed decision-making across the agrifood sector.

Build institutional capacity and mechanisms for innovation and policy integration: Governance mechanisms and dedicated institutions should be strengthened and/or created to coordinate innovation, knowledge sharing and policy alignment across ministries. Investment in technical training, digital tools and extension services is needed to enable producers, women and youth entrepreneurs to adopt sustainable practices and benefit from new market opportunities.

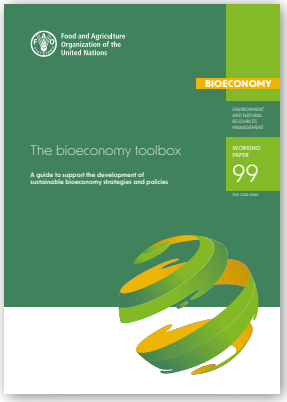
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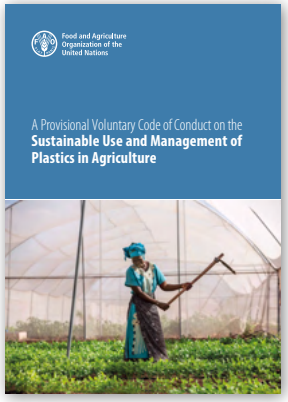
The State of Food and Agriculture 2019



Public food procurement for sustainable food systems and healthy diets - Volume 1



The bioeconomy toolbox



A Provisional Voluntary Code of Conduct on the Sustainable Use and Management of Plastics in Agriculture

Notes:

1 **FAO.** 2025. *Tracking progress on food and agriculture-related SDG indicators 2025.* Rome. https://doi.org/10.4060/cd5832en

2 **United Nations.** 2025. *The Sustainable Development Goals Report 2025.* New York, USA. https://unstats.un.org/sdgs/report/2025/

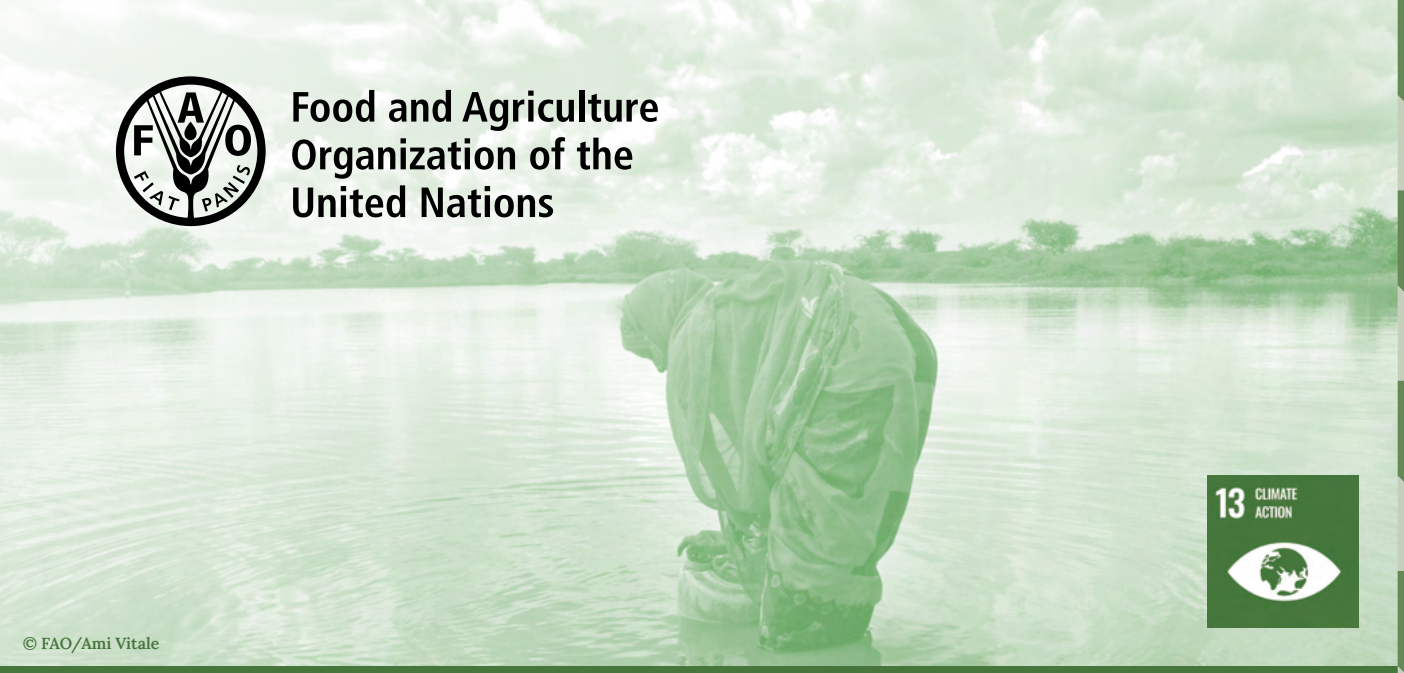
3 **UNEP.** 2022. *2022 Sustainable Public Procurement Global Review.* Paris. https://www.oneplanetnetwork.org/sites/default/files/from-crm/300_I_UNEP_Global_Report_2022.pdf

4 **FAO.** 2025. *Dashboard on bioeconomy strategies and related actions for sustainable development.* [Accessed on 17 November 2025.] https://tableau.apps.fao.org/views/Bioeconomystrategiesdashboard/Globaloverview?%3Aembed=y&%3AisGuestRedirectFromVizportal=y. Licence: CC-BY-4.0.

5 **FAO.** 2021. *Assessment of agricultural plastics and their sustainability – A call for action.* Rome. https://doi.org/10.4060/cb7856en

6 **Rotterdam Convention Technical Assistance Interactive Map.** [Accessed on 15 September 2025.] https://rotterdam-maps.apps.fao.org/map/

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FAO and SDG 13: Take urgent action to combat climate change and its impacts

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Sustainable Development Goal (SDG) 13 emphasizes the urgent need to combat climate change and its devastating impacts. The agriculture and food sectors stand at the crossroads of this challenge, being both highly vulnerable to climate change and significant contributors to greenhouse gas (GHG) emissions.

Agrifood systems hold the solutions to major interlinked challenges facing people and the planet: climate change, biodiversity loss, land degradation, food insecurity and poverty. Global biodiversity (Biodiversity Plan), climate (Paris Agreement) and land degradation neutrality goals are unattainable without agrifood system solutions.

Climate change poses a severe threat to the sustainability of agrifood systems and the livelihoods they support.

Key climate impacts on agrifood systems:

Shifts in pest and disease patterns: Warmer temperatures and altered precipitation patterns can expand the habitats of pests and pathogens, leading to increased incidences of crop infestations and plant diseases. For example, the spread of the fall armyworm (FAW), a pest that devastates maize crops, has been accelerated by changing climate conditions, threatening food security in many regions.

Reduced crop yields and harvests: Changes in temperature, precipitation and increased frequency of extreme weather events like droughts and floods can severely affect crop growth. Heat stress can lead to lower yields in staple crops such as wheat, rice and maize, directly affecting food availability and prices. Furthermore, altered climatic conditions can disrupt pollination, reducing fruit and vegetable production.

Stress on livestock: Higher temperatures can lead to heat stress in animals, reducing their productivity and increasing mortality rates. Additionally, changes in pasture quality and water availability can limit the resources needed for raising livestock. These impacts can reduce meat, milk and egg production, exacerbating food insecurity and economic instability in communities reliant on livestock farming.

Decline in fisheries stocks: Rising sea temperatures and ocean acidification affect fish stocks' health and distribution. Many fish species are migrating to cooler waters, disrupting traditional fishing grounds and threatening the livelihoods of communities dependent on fishing. Additionally, coral bleaching, driven by higher water temperatures, damages marine ecosystems, further reducing fishery productivity.

Rising sea levels: Rising sea levels pose significant threats to agriculture, including land loss, saltwater intrusion and reduced freshwater availability, ultimately impacting food security and livelihoods, especially in coastal regions and Small Island Developing States.[1]

Extreme weather events: Each year hundreds of billions of US dollars' worth of crop and livestock production is lost due to disaster events, such as floods, storms and hurricanes, corresponding to 5 percent of annual global agricultural gross domestic product over the last 30 years. Between 2007 and 2022, agricultural losses made up an average of 23 percent of the total impact of disasters across all sectors, and that over 65 percent of losses caused by droughts were experienced in the agriculture sector.[2]

To further understand the economic and non-economic impacts of climate change, **FAO is developing a framework for assessing economic and non-economic losses and damages in agrifood systems**.

The Food and Agriculture Organization of the United Nations (FAO) plays a pivotal role in driving the integration of climate action into agrifood system policies and practices.

The ***FAO Strategy on Climate Change 2022-2031*** **outlines guiding principles for integrating climate action across all agrifood systems** – crops, livestock, fisheries and aquaculture, and forestry – emphasizing the need for country-driven innovation, science-based policy and inclusivity.

FAO supports Members in adapting to and mitigating the effects of climate change by developing national climate plans, and through research-based programmes and projects, with a focus on adapting smallholder production and making the livelihoods of rural populations more resilient.

The *FAO global roadmap, Achieving SDG 2 without breaching 1.5°C threshold* provides a clear, actionable framework to accelerate agrifood system transformation and achieve food security, nutrition and climate goals. Leveraging from FAO's technical and scientific expertise, it identifies 120 high-impact actions across 10 domains covering agrifood production (cf. crops, livestock), natural resources (forest, water, soil), agrifood transformation catalysts (clean energy, food loss and waste) and systemic enablers (data and inclusive policies).



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↑ **Throughout COP30, FAO worked with countries and partners to place agriculture and food security at the centre of negotiations, including discussions on the Global Goal on Adaptation, loss and damage, nationally determined contributions (NDCs), National Adaptation Plans (NAPs), climate finance, and just transition. The outcomes from COP30 demonstrate that there is still some way to go to fully mainstream agrifood system solutions into the negotiation streams. FAO supported the development of the COP Presidency's Action Agenda, including new initiatives on agriculture, forests and bioeconomy and will play a central role in their implementation. In Brazil, FAO also co-hosted the Food and Agriculture Pavilion for the fourth year in a row with the CGIAR, promoting multistakeholder dialogue within and alongside the negotiations.**

Data highlights

> **2024 was the warmest year on record** at about 1.55 °C above pre-industrial levels.[3]

Agrifood systems emissions account for about **one-third of global GHG emissions**. In 2023, global agrifood systems emissions were **16.5 billion tonnes of carbon dioxide equivalent** (Gt CO_2eq), representing an increase of 21 percent since 2001 (Figure 22).[4]

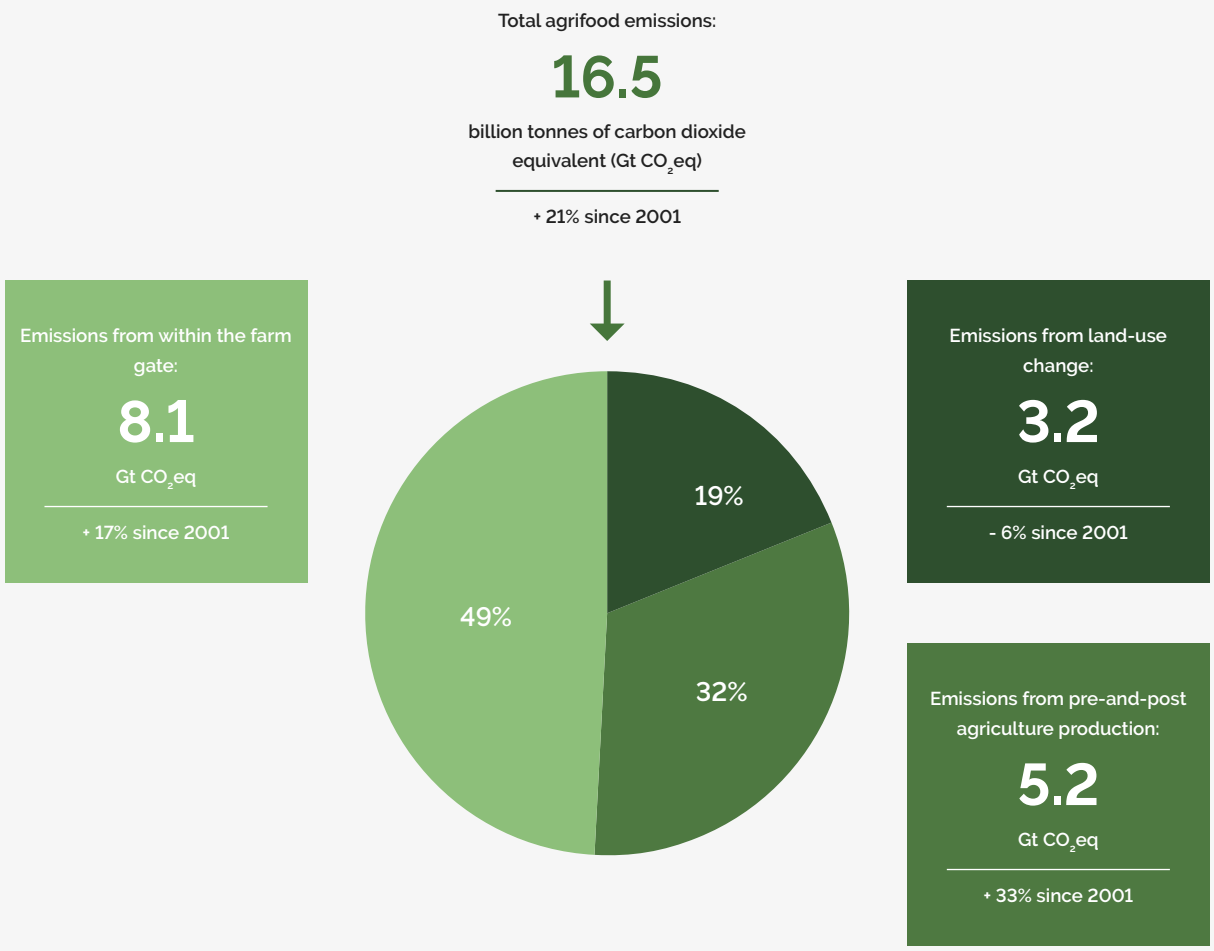
Climate-related disasters have come to dominate the risk landscape, accounting for more than 80 percent of all major internationally reported disasters. Of all natural hazards, floods, droughts and tropical storms affect food production the most. **Drought causes more than 80 percent of the total damage and losses in agriculture**, especially for the livestock and crop production subsectors.[5]

Under a high emissions scenario, approximately **10 percent of the land used for crop cultivation and livestock rearing will become untenable by mid-century.**[6]

> By 2030, it is predicted that climate change could push over 132 million people into poverty[7] and **escalate the number of those at risk of hunger to 183 million by 2050.**[8]

FAO's 2024 groundbreaking report, *The unjust climate – Measuring the impacts of climate change on rural poor, women and youth*, shows that climate change and extreme weather events are disproportionately affecting the incomes of rural people living in poverty, women and older populations. As a result, climate change is further widening existing income gaps in rural areas, pushing vulnerable people towards maladaptive coping strategies and ultimately making it harder for these groups to escape cycles of poverty and hunger.[9]

Figure 22. Agrifood systems emissions, 2023



Source: Author's own elaboration based on data from FAO. 2025. *Greenhouse gas emissions from agrifood systems – Global, regional and country trends, 2001–2023.* FAOSTAT Analytical Brief Series, No. 115. Rome. https://doi.org/10.4060/cd7300en

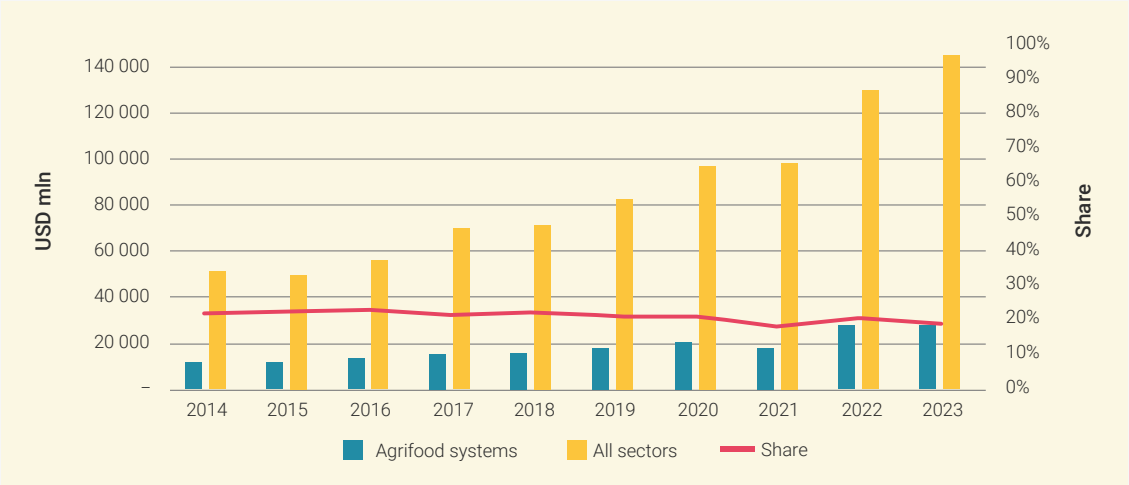
Key challenges

Climate finance for agrifood systems remains critically low

While global climate-related development finance has increased in recent years, reaching a record USD 145 billion in 2023, the **share allocated to agrifood systems has declined markedly, falling from 47 percent in 2000 to 19 percent in 2023.**[10] Transforming agrifood systems to align with the 1.5 °C climate goal will require investments of more than USD 1 trillion annually until 2030, while current national commitments amount to only USD 201.5 billion per year, revealing a major investment gap.[11]

Recent estimates indicate that agrifood systems received USD 95 billion in climate finance in 2021–2022, suggesting **a twelvefold increase is needed to meet projected needs** to transition to low-carbon and climate-resilient pathways, including through halting deforestation and scaling forest conservation to unlock synergistic gains for climate, biodiversity and sustainable agrifood systems. The challenge is compounded by limited information on agrifood investments in many NDCs, which continues to constrain effective planning and resource mobilization.[10, 12]

Figure 23. Climate-related development finance allocations to agrifood systems versus all sectors



Source: Galbiati, G.M., Caputo, I., Brierley, I., Ducastel, A. & Bernoux, M. 2025. *Climate-related development finance to agrifood systems – Global and regional trends. Report 2025.* Rome. https://doi.org/10.4060/cd7500en

Gap in NDC design limits the effectiveness of agrifood adaptation

Although many countries recognize the need to strengthen adaptation in agrifood systems, major planning gaps remain. Most NDCs (60 percent) do not reference the use of climate risk and vulnerability assessments, without which adaptation measures risk reinforcing existing vulnerabilities rather than reducing them, such as expanding irrigation in arid regions. Few NDCs include actions tailored to specific local climate hazards (31 percent), vulnerable groups (29 percent) or local contexts (26 percent) and the use of appraisal tools to prioritize actions is rare. Monitoring and evaluation systems are also limited, with just 6 percent of NDCs referencing relevant frameworks. These design gaps could undermine the effectiveness of adaptation efforts in the agrifood sector.[13]

Gaps in climate data and analytics undermine early warning capacity

There remain many gaps in the climate and environmental data needed to guide planning, investment and risk management in agrifood systems, which limit the effectiveness of early warning systems and reduce the ability of producers and institutions to take anticipatory action.

Way forward

Maximize the co-benefits of adaptation and mitigation through agrifood systems: These solutions include (but are not limited to) improved sustainable forest management and agroforestry, efficient livestock systems, improved cropland management, ecosystem restoration, afforestation and reforestation, water use efficiency and water resource management, a shift to healthy diets and reducing food loss and food waste.

Avert, minimize and address loss and damage: A broad spectrum of measures exists to respond to loss and damage in agrifood systems. These include enhanced climate disaster preparedness through early warning systems and anticipatory actions, as well as risk-transfer mechanisms that

support communities in managing the adverse loss and damage impacts. It is also essential to provide financial support for recovery, rehabilitation and reconstruction aimed at strengthening climate-resilient agrifood systems, prioritizing direct access of funds for Indigenous Peoples and local communities.

Increase investment in agrifood systems transformation: Increased and targeted investment is needed in the array of solutions outlined above, as well as in science, technology, innovation and data to inform policies and actions across all levels. Enhancing the quality of and equitable access to climate finance for small-scale producers, women, youth and other people in vulnerable situations is essential for advancing a just transition. Scaling up innovative and inclusive financing mechanisms, such as grants, finance risk management and results-based financing instruments, is crucial for attracting greater private investment to accelerate climate action in agrifood systems. Targeting climate finance towards social protection, aligning policies with healthy diets, reducing food loss and waste, taking climate action, reinforcing risk management and fostering transparent global trade systems are pivotal for inclusive agrifood systems and sustainable development.

Adopt holistic and integrated national policies and strategies: The potential of agrifood systems for adaptation and mitigation is underrepresented in national climate plans and actions. Ambitious NDCs that incorporate solutions across agricultural sectors can unlock higher ambition for building resilience, reducing emissions and safeguarding food security.

Empower small-scale producers, women, youth, Indigenous Peoples and other groups in vulnerable and marginalized situations: Harnessing the agency of these groups to fully engage in and contribute to policy dialogues and decision-making processes is vital for achieving a just transition. They should also be supported in strengthening their adaptation capacity through social protection policies and programmes and other financial incentives.



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↑ The Food and Agriculture for Sustainable Transformation (FAST) Partnership aims to accelerate the transformation of agrifood systems by 2030, focusing on people, climate and nature. Launched by the COP27 Presidency in 2022 and hosted by FAO, the FAST Partnership, serves as a COP-to-COP mechanism to keep agrifood systems central to climate dialogues and support post-COP implementation, including for the new Baku Harmoniya Climate Initiative for Farmers launched at COP29 and the Resilient Agriculture Investment for net-Zero land degradation initiative launched at COP30.



© Patrick Zachmann/Magnum Photo for FAO

↑ **The Scaling up Climate Ambition on Land Use and Agriculture through NDCs and NAPs (SCALA) programme empowers countries to advance climate action in land use and agriculture by using their NDCs and NAPs as foundational entry points. SCALA helps countries transform these commitments into actionable and impactful climate solutions through robust multistakeholder engagement. The programme emphasizes private sector participation, gender-responsive planning and inclusive approaches to ensure that vulnerable, resource-dependent communities benefit from climate action. SCALA operates in 12 core countries across Africa, Asia, and Latin America and the Caribbean, while providing additional technical support globally. Jointly implemented by FAO and UNDP and funded by the German International Climate Initiative (IKI), SCALA fosters transformative change to build climate resilience in the land use and agriculture sectors.**

Expand agricultural insurance programmes: Agricultural insurance can help farmers manage the risks associated with climate variability by providing compensation for crop and livestock losses due to extreme weather events. Agricultural insurance enables farmers to recover quickly and continue their agricultural activities by ensuring financial stability.

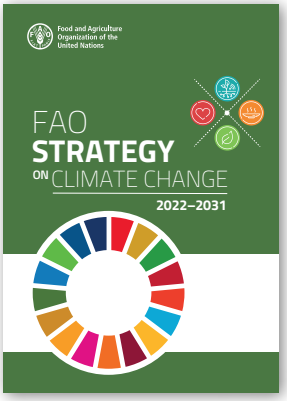
Strengthen and implement early warning systems: These systems are vital for protecting agrifood systems from climate-related hazards and use meteorological data and predictive models to forecast extreme weather events, enabling farmers to proactively protect their crops and livestock. For instance, warnings about impending droughts can prompt farmers to adopt water-saving practices or adjust planting schedules.

Improving data for climate action through agrifood systems: Establishing, for example, meteorological stations can provide crucial data for managing agrifood systems under changing climate conditions. They monitor weather patterns and provide accurate climate data, which can inform agricultural practices and decision-making. Farmers can use this information to optimize planting and harvesting times, select appropriate crop varieties and implement water-saving irrigation techniques.

Adopt water-efficient technologies and practices: Water scarcity is a significant challenge exacerbated by climate change. Innovative technologies such as drip irrigation, rainwater harvesting and soil moisture sensors can help farmers use water more efficiently and reduce water wastage and ensure crops receive adequate hydration even during dry periods, sustaining agricultural productivity.

Implement integrated pest management (IPM): IPM is an effective strategy to manage the increased threat of pests and diseases due to climate change. This approach combines biological, cultural, physical and chemical methods to control pest populations while minimizing environmental impact and helps maintain healthy crops and reduce reliance on chemical pesticides by using pest-resistant crop varieties, natural predators and precision pesticide applications.

Learn more



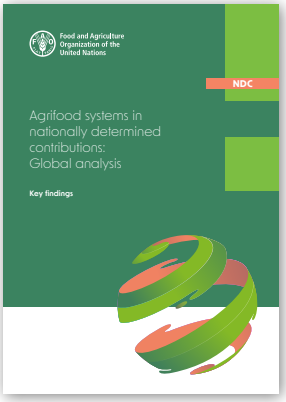
FAO Strategy on Climate Change 2022–2031



Achieving SDG 2 without breaching the 1.5 °C threshold: A global roadmap



Climate-related development finance to agrifood systems



Agrifood systems in nationally determined contributions: Global analysis

Notes:

1 **FAO.** 2023. *Loss and damage and agrifood systems – Addressing gaps and challenges.* Rome. https://doi.org/10.4060/cc8810en

2 **FAO.** 2023. *The Impact of Disasters on Agriculture and Food Security 2023 – Avoiding and reducing losses through investment in resilience.* Rome. https://doi.org/10.4060/cc7900en

3 **World Meteorological Organization.** 2024. WMO confirms 2024 as warmest year on record at about 1.55°C above pre-industrial level. In *World Meteorological Organization.* [Cited 14 January 2025.] https://wmo.int/news/media-centre/wmo-confirms-2024-warmest-year-record-about-155degc-above-pre-industrial-level

4 **FAO.** 2025. *Greenhouse gas emissions from agrifood systems – Global, regional and country trends, 2001–2023.* FAOSTAT Analytical Brief Series, No. 115. Rome. https://doi.org/10.4060/cd7300en

5 **FAO, IFAD, UNICEF, WFP & WHO.** 2018. *The State of Food Security and Nutrition in the World 2018 – Building climate resilience for food security and nutrition.* Rome, FAO. https://openknowledge.fao.org/handle/20.500.14283/i9553en

6 **FAO.** 2023. *Climate change impacts and adaptation options in the agrifood system – Brief summary of the Intergovernmental Panel on Climate Change Sixth Assessment Report.* Rome. https://openknowledge.fao.org/handle/20.500.14283/cc5921en

7 **World Bank.** 2020. *Revised Estimates of the Impact of Climate Change on Extreme Poverty by 2030 - Background Paper.* Policy Research Working Paper 9417. Washington, DC. https://documents1.worldbank.org/curated/en/706751601388457990/pdf/Revised-Estimates-of-the-Impact-of-Climate-Change-on-Extreme-Poverty-by-2030.pdf

8 **IPCC.** 2019. *Climate Change and Land: An IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems.* Shukla, P.R., Skea, J., Calvo Buendia, E., Masson-Delmotte, Pörtner, H.O., Roberts, DCo, Zhai, P. *et al.*, eds. Geneva. www.ipcc.ch/srccl/

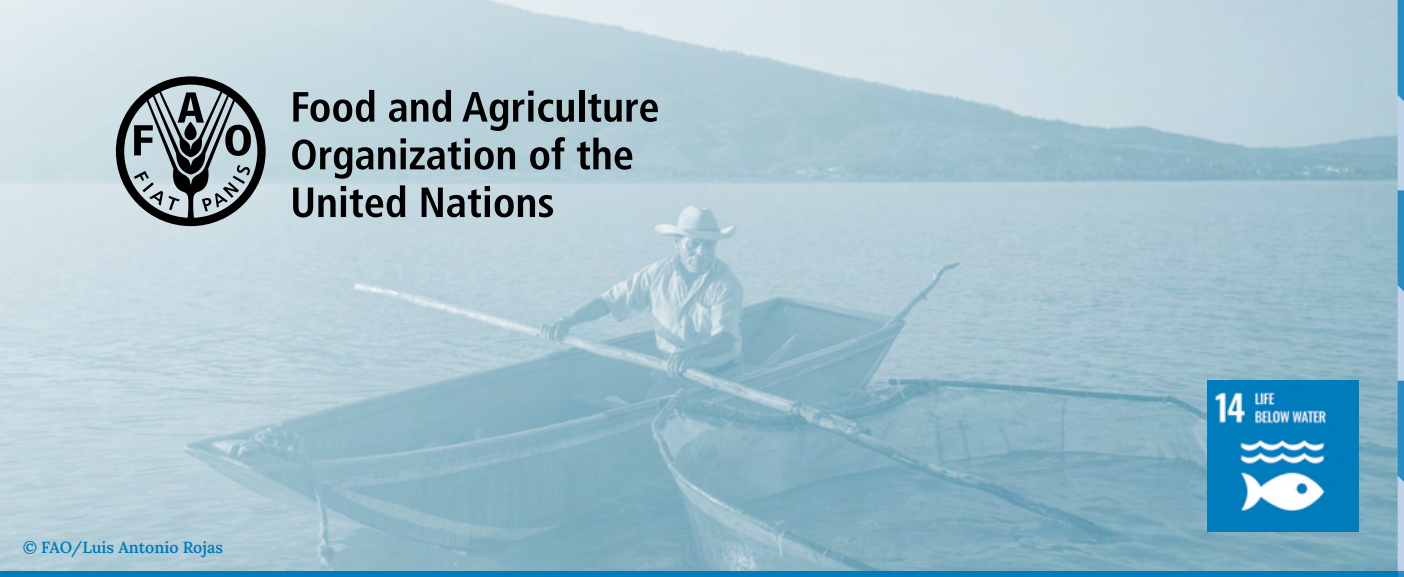
9 **FAO.** 2024. *The unjust climate – Measuring the impacts of climate change on rural poor, women and youth.* Rome. https://doi.org/10.4060/cc9680en

10 **Galbiati, G.M., Caputo, I., Brierley, I., Ducastel, A. & Bernoux, M.** 2025. *Climate-related development finance to agrifood systems – Global and regional trends. Report 2025.* Rome. https://doi.org/10.4060/cd7500en

11 **CPI & FAO.** 2024. *The Triple Gap: Assessing Investment Need in Agrifood Systems.* Revised. Rome. https://doi.org/10.4060/cd3611en

12 **ClimateShot Investor Coalition (CLIC).** 2025. *Landscape of Climate Finance for Agrifood Systems 2025.* San Francisco, USA. https://www.climatepolicyinitiative.org/wp-content/uploads/2025/05/Landscape-of-Climate-Finance-for-Agrifood-Systems-2025.pdf

13 **FAO.** 2025. *COP30 2025 Key Messages – Belém, Brazil, 10-21 November 2025.* Rome. https://openknowledge.fao.org/handle/20.500.14283/cd7343en



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Food and Agriculture Organization of the United Nations

FAO and SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Oceans and seas are the planet's life support system – regulating climate, sustaining biodiversity and providing food, nutrition, trade and livelihoods for billions. However, they face a variety of significant threats, including pollution, uncontrolled coastal development, biodiversity loss, overfishing and the impacts of climate change.

Sustainable Development Goal (SDG) 14 aims to conserve and sustainably use the oceans, seas and marine resources for sustainable development. It was established to safeguard oceans as a global common, vital not only for marine ecosystems but also for the well-being, prosperity, food security and survival of future generations.

Aquatic foods supply at least 20 percent of the animal protein needs of over 3 billion people, or over 40 percent of the world's population. They are also a primary source of vital nutrients — calcium, iron, vitamin A, B-12, and omega-3s — a combination rarely matched by land-based alternatives.[1]

The Food and Agriculture Organization of the United Nations (FAO) has developed a *Blue Transformation* Roadmap, which seeks to maximize the contribution of aquatic food systems to food security and nutrition and the SDGs, and has elevated this work as a Programme Priority Area under its *Strategic Framework 2022-2031*.



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↑ **Science-based fisheries management delivers results. FAO's *Review of the State of World Marine Fishery Resources – 2025* reveals that all assessed Antarctic stocks are sustainable, tuna fisheries have largely recovered from overfishing and are now rebuilding or sustainably managed, and the Mediterranean is showing measurable improvements through coordinated reforms, with reduced fishing pressure and increasing biomass in several stocks. These gains reflect FAO's Blue Transformation vision — ensuring all marine resources are managed sustainably for people and the planet.**

Blue transformation proposes a pathway, based on sustainable aquaculture expansion and intensification, effective management of all fisheries and inclusive aquatic value chains to ensure food security, protect biodiversity and build resilience.

As **custodian of four SDG 14 indicators**, FAO provides global leadership on monitoring and methodological development for SDG 14.4.1 on the proportion of fish stocks within biologically sustainable levels; SDG 14.6.1 on progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated (IUU) fishing; SDG 14.7.1 on sustainable fisheries as a percentage of gross domestic product in Small Island Developing States, Least Developed Countries (LDCs) and all countries; and SDG 14.b.1 on the degree of application of a legal, regulatory, policy and institutional frameworks which recognizes and protects access rights for small-scale fisheries.

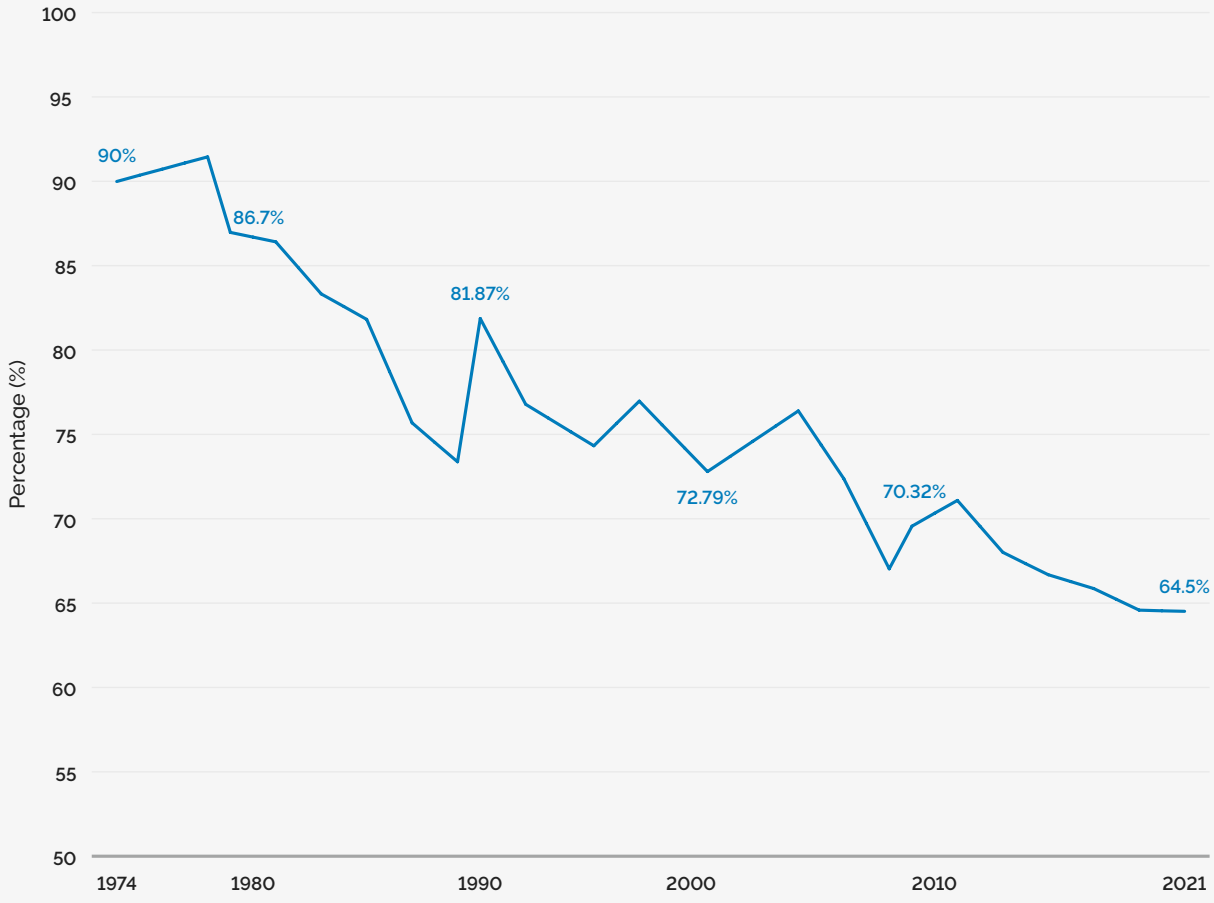
FAO provides global data leadership for SDG 14, including statistical services that underpin evidence-based policy. Its data and analysis are published as global knowledge products, which include the biennial *The State of World Fisheries and Aquaculture*, the annual *FAO Yearbook of Fishery and Aquaculture Statistics*, the FishStat public database and *the State of World Marine Fishery Resources* report.

FAO also supports key **global normative processes** and leads implementation of binding and non-binding international instruments relevant to SDG 14. These include, among others, the *Code of Conduct for Responsible Fisheries* and its associated instruments, the *Agreement on Port State Measures Agreement to Prevent, Deter and Eliminate Illegal, Unregulated, Unreported and Unregulated Fishing* (PSMA), the *Guidelines for Sustainable Aquaculture*, and the *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication*. FAO also hosts a number of (Article XIV and VI) regional fishery bodies and organizations that support regional efforts to sustainably manage fisheries and aquaculture.

Data highlights

Total fisheries and aquaculture production reached **228 million tonnes in 2023, with a total value of USD 501 billion**. Aquaculture production of aquatic animals also grew to **98.5 million tonnes, representing 52 percent of all aquatic animals**. In 2023, almost 90 percent of total aquatic animal production was used for direct human consumption.[1]

Figure 24. Proportion of world fish stocks within biologically sustainable levels, 1974-2021 (SDG Indicator 14.4.1)



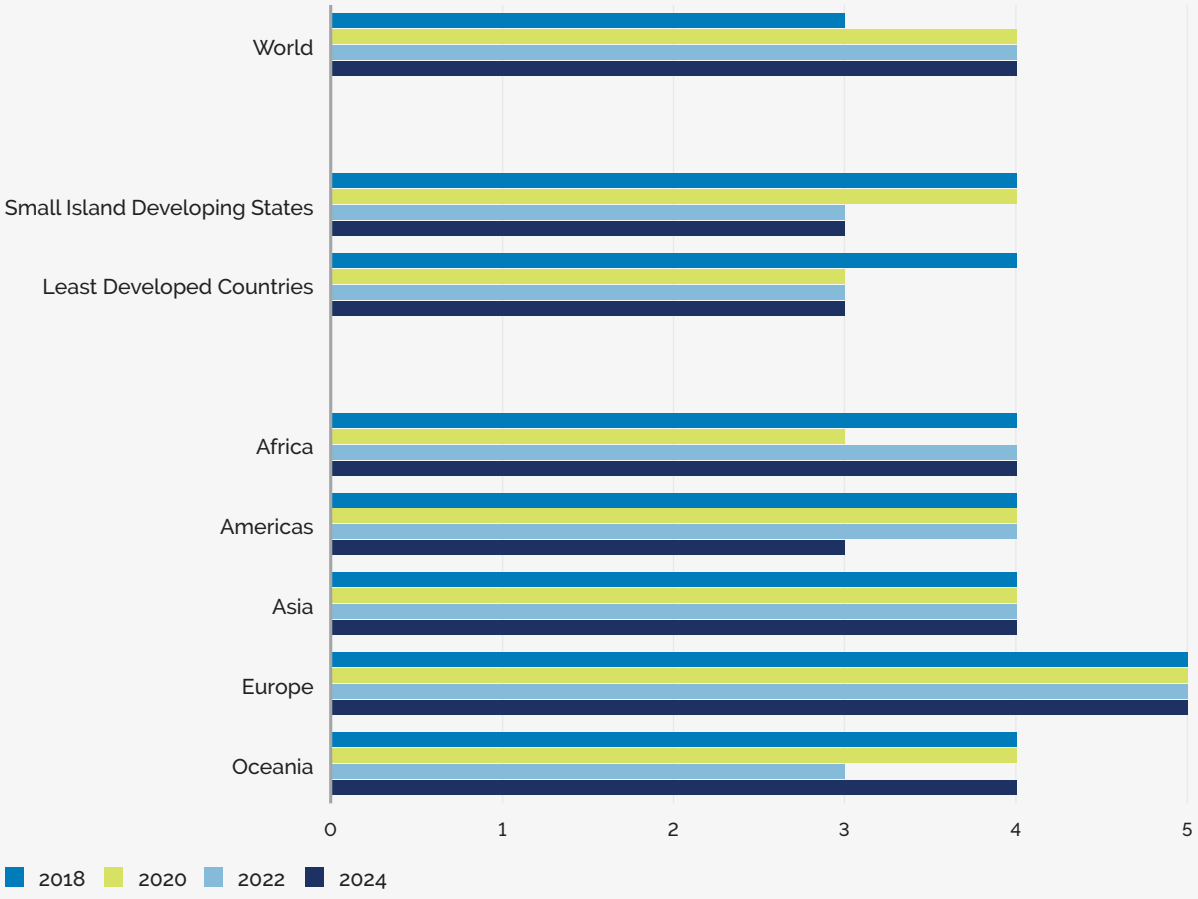
Source: FAO. 2025. FAOSTAT: SDG *Indicators*. [Accessed in July 2025.] *https://www.fao.org/faostat/en/#data/SDGB*. Licence: CC-BY-4.0.

Around 600 million livelihoods depend on aquatic food systems.1 Small-scale fisheries employ over 90 percent of capture fishers and fish workers (an estimated 60.2 million people) and provide around 40 percent of catches, most of which are locally sold and consumed, but they continue to face barriers to resources, markets and decision-making.[2]

About 64.5 percent of the world's marine fish stocks were fished within biologically sustainable levels in 2021 (Figure 24), an improvement since 2017, with early indicators suggesting that the proportion of stocks overfished is stabilizing at 35.5 percent.[3]

Although the world has achieved a high level of implementation of instruments to combat IUU fishing as of 2024 (Figure 25), it remains a persistent threat to effective fisheries management, food security and nutrition and livelihoods. While the evidence is incomplete, initial estimates suggest that **IUU fishing may account for up to 26 million tonnes annually**, undermining sustainability, harming small-scale fishers and fuelling illicit activity.[4]

Figure 25. Progress in the degree of implementation of international instruments aimed at combating IUU Fishing by Region, 2018-2024 (SDG Indicator 14.6.1)



Notes: IUU – illegal, unreported and unregulated. The chart shows the average level of implementation of the indicator by countries within each grouping, from the lowest (1) to the highest (5).

Source: Author's own elaboration using data from FAO. 2025. FAOSTAT: SDG *Indicators*. [Accessed in July 2025.] *https://www.fao.*



© FAO/Ernesto Benavides

↑ **IUU fishing remains one of the greatest threats to marine ecosystems because it undermines national and regional fisheries conservation and management efforts. The FAO Agreement on Port State Measures (PMSA) to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, in force since 2016, is the first binding international agreement targeting IUU fishing practices, whose objective is to combat IUU fishing by preventing vessels engaged in such activities from using ports and landing their catches. To support its implementation, FAO has established auxiliary tools like the PSMA Global Information Exchange System (GIES). FAO has assisted more than 50 States to implement the PSMA.**

Key challenges

Limited inclusion of small-scale fishers in governance and sustainable value chains

Small-scale fisheries play a central role in food security, nutrition and employment, yet their participation in decision-making and access to marine resources remain limited. Many coastal communities lack secure tenure rights and limited involvement in fisheries management processes reduces the extent to which regulations reflect the knowledge, needs and priorities of small-scale fishers.[5] Constraints such as inadequate landing sites, limited access to cold storage, poor market information and restricted linkages to formal markets hinder their ability to add value and obtain fair returns.[2] Competition for coastal areas, including aquaculture expansion, tourism and industrial activities, further pressures access to traditional fishing grounds.[5]

Climate change impacts on marine ecosystems

Climate change is driving changes in the distribution, productivity and physiology of fisheries and marine ecosystems. Climate change, pollution, habitat destruction and overfishing are among the drivers of biodiversity loss, particularly in coastal habitats. Yet, the impacts are not evenly distributed — LDCs in the tropics face the greatest risks, threatening food security and livelihoods

Governance and enforcement gaps in fisheries management

Uneven implementation management frameworks and insufficient monitoring, control and surveillance capacity continue to hinder the sustainable use of marine resources. Many countries lack the institutional and technical systems needed to apply science-based measures, enforce regulations or ensure compliance with international instruments.



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↑ In the United Republic of Tanzania, small-scale women fish workers are gaining financial independence through Village Community Banking (VICOBA) groups. Supported by the Ministry of Livestock and Fisheries and FAO project "Creating an enabling environment for securing sustainable small-scale fisheries", the initiative empowers members of the Tanzania Women Fish Workers Association. Through training, women have improved access to affordable credit, expanded businesses, and added value to their products. By 2024, the first groups had saved over USD 23 000 and disbursed USD 42 000 in loans, demonstrating how community-based microfinance fosters resilience and promotes gender-equitable, sustainable fisheries.

Way forward

Implement the *Code of Conduct for Responsible Fisheries* and its related instruments: Strengthen data collection and analysis, expand science-based, ecosystem approaches to rebuild stocks and secure long-term productivity.

Combat IUU fishing: Implement the International Plan of Action on IUU Fishing and related instruments and ensure widespread adoption and implementation of the Port State Measures Agreement. Enforce monitoring control and surveillance as well as traceability along the value chain.

Strengthen sustainable fisheries management: Ensure all fisheries are under effective management, as sought under the *FAO Blue Transformation Roadmap*, so that they may delivery healthy stocks and secure equitable livelihoods.

Empower small-scale fisheries: Scale up implementation of the *FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication*, remove barriers to markets and finance and ensure inclusive decision-making for women, Indigenous Peoples and people in vulnerable situations.

Promote sustainable aquaculture: Apply FAO's *Guidelines for Sustainable Aquaculture* to increase productivity while protecting ecosystems.

Develop sustainable value chains: Enhance traceability, reduce loss and waste, guarantee fair working conditions and expand market access.

Accelerate partnerships and finance: Mobilize investment and public–private collaboration for innovation, climate adaptation and resilient aquatic food systems.

Learn more



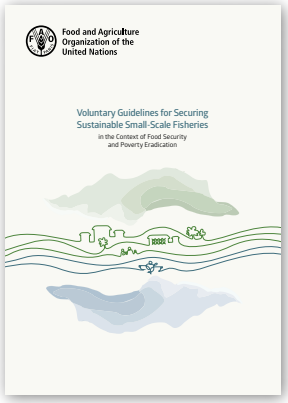
The State of World Fisheries and Aquaculture 2024



Guidelines for Sustainable Aquaculture



Review of the state of world marine fishery resources – 2025



Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries

Notes:

1 **FAO.** 2024. *The State of World Fisheries and Aquaculture 2024 – Blue Transformation in action.* Rome. https://doi.org/10.4060/cd0683en

2 **FAO, Duke University & WorldFish.** 2023. *Illuminating Hidden Harvests – The contributions of small-scale fisheries to sustainable development.* Rome. https://doi.org/10.4060/cc4576en

3 **Sharma, R., Barange, M., Agostini, V., Barros, P., Gutierrez, N.L., Vasconcellos, M., Fernandez Reguera, D. *et al.*** (eds.) 2025. *Review of the state of world marine fishery resources – 2025.* FAO Fisheries and Aquaculture Technical Paper, No. 721. Rome. https://doi.org/10.4060/cd5538en

4 **United Nations.** 2025. *The Sustainable Development Goals Report 2025.* New York, USA. https://unstats.un.org/sdgs/report/2025/

5 **FAO.** 2015. *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication.* Rome. https://openknowledge.fao.org/handle/20.500.14283/i4356en

Food and Agriculture Organization of the United Nations



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FAO and SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Sustainable Development Goal (SDG) 15, Life on Land, calls for the protection, restoration and sustainable use of terrestrial ecosystems, sustainable forest management, combatting desertification, and halting and reversing land degradation and biodiversity loss. Land is a finite, essential and non-substitutable resource that underpins food security, livelihoods and ecosystem stability. Healthy and resilient land, forests, mountains, landscapes and wetlands provide the foundation for agrifood systems, supporting soil fertility, water regulation, carbon storage and biodiversity on which crop and livestock production depend.

Unsustainable agricultural practices and expansion, deforestation, invasive species and poor land management are major drivers of ecosystem degradation and biodiversity loss. Strengthening synergies between agriculture and forests is key to turning tide on deforestation and forest degradation while promoting sustainable agricultural production that enhances livelihoods, food security and climate action. Addressing

land degradation, improving forest and soil management, and conserving mountain and wetland ecosystems are essential to ensuring that agrifood systems contribute to the achievement of multiple SDGs, including those on food security, climate action and poverty reduction. Moreover, biodiversity is a foundation for agrifood systems transformation, and therefore biodiversity conservation and sustainable use are also fundamental.

Supporting progress on SDG 15 is a priority focus for the Food and Agriculture Organization of the United Nations (FAO). FAO is the **custodian of indicators 15.1.1, 15.2.1 and 15.4.2**, which primarily relate to forest management and mountain ecosystem integrity. Within this role, the Organization collects, complies and validates data to measure progress and provide support to Members in the form of tools and technical guidance to enable countries develop their reporting capacity to monitor forest area, sustainable forest management and mountain ecosystems.

As a leading source of forest-related information since 1946, FAO has a long tradition of **monitoring the world's forests**. FAO collects and analyses data on forest resources through Global Forest Resources Assessments (FRA). *The State of the World's Forests* (SOFO) and *The State of the World's Land and Water Resources* provide evidence and guidance on land and ecosystem sustainability, relevant to SDG 15. Through the Commission on Genetic Resources for Food and Agriculture, FAO Members coordinate evidence-based global policies and activities to safeguard biodiversity and genetic resources for food and agriculture. In 2025, the two global assessments on the state of the world's plant and forest genetic resources informed the deliberation of the Commission and the revised *Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources*.



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↑ Open Foris is an initiative to develop and share easy-to-use, efficient, free and open-source solutions, which countries can use in gathering, producing and disseminating reliable information on the state of forest and other land resources. Open Foris solutions facilitate flexible and efficient data collection, analysis and reporting. One of the technical solutions is Collect Earth Online, which has been used successfully by many countries for land-cover and land-use assessments and to analyse historical trends in vegetation change.

A key area of work within FAO's One Health Programme contributes to SDG Target 15.8 – strengthening capacities in **pest and disease management, biosecurity and the management of invasive alien species**. FAO coordinates with international partners (WHO, WOAH, UNEP) under a "Quadripartite" to strengthen collaboration on invasive species management at the human, animal, plant and environmental interfaces, especially where zoonotic risks or ecosystem health are involved, through its biosecurity approach. Through the Emergency Prevention System, FAO strengthens national surveillance and rapid response to transboundary pests/pathogens, limiting the establishment and spread of invasive animal and plant diseases and pests. Technical guidelines, risk analysis and early warning frameworks for plant pests and animal health threats,[1] support assessment of introduction risk, set import controls, and design targeted prevention/eradication programmes. Those standards help countries design the legislation and resourcing measured by SDG indicator 15.8.1. The Global Early Warning System for Health Threats and Emerging Risks at the Human-Animal-Ecosystem Interface (GLEWS+), managed by FAO, WHO, WOAH and UNEP, supports rapid information exchange, joint risk assessment and coordinated early warning of emerging biological threats, including those caused by invasive species at the interface of animal, human and ecosystem health.[2] Additionally FAO-LEX helps countries build effective invasive species management systems by providing access to international and national laws, action plans, and policy resources, enabling the development of strong legal frameworks, surveillance and rapid response strategies.

Within its mandate, FAO hosts the International Plant Protection Convention (IPPC), the global standard-setting body for **plant health** under the SPS Agreement. Through the development and implementation of International Standards for Phytosanitary Measures (ISPMs), the IPPC, comprising 185 contracting Parties, works to prevent the introduction and spread of quarantine plant pests that threaten terrestrial ecosystems, forests, biodiversity and agricultural landscapes.

FAO strives to support the implementation of the Kunming-Montreal Global Biodiversity Framework (KMGBF) that enhances **biodiversity mainstreaming** within policies and practices across agricultural sectors at both national and regional levels. FAO, the Secretariat of the Convention, and the COP Presidency of Colombia launched the *Agri-NBSAPs Support Initiative* to help countries implement National Biodiversity Strategies and Action Plans with agrifood systems at their core. At the resumed session of COP 16 at FAO Headquarters, FAO was recognized as a key partner for the implementation of the KMGBF, including through its custodianship of 25 indicators of the monitoring framework. The Organization additionally promotes biodiversity conservation through agroecology by supporting diversified farming systems that enhance ecosystem services like pollination and pest control while conserving genetic and species diversity.

Land degradation refers to the long-term decline in the capacity of land to provide essential ecosystem functions and services, with significant implications for agricultural productivity, food security and socioeconomic stability, especially where livelihoods depend on farming. Human activities — including deforestation, overgrazing, and unsustainable cropping and irrigation — further accelerate degradation. Smallholders, who account for 85 percent of farms worldwide and operate on less than 2 hectares, are disproportionately affected, due to resource restrictions and insecure land rights.[3]

To address **land degradation**, FAO promotes Land Degradation Neutrality through normative tools such as the *Technical Guide on the Integration of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security into the Implementation of the United Nations Convention to Combat Desertification and Land Degradation Neutrality*, helping countries integrate tenure-responsive approaches into restoration, governance and land management and also provides technical support through the promotion of dryland agriculture and sustainable land management practices.

Beyond this, FAO plays a pivotal role in advancing SDG 15 through a broad portfolio of initiatives that promote sustainable land, soil and forest management and conservation, restoration and sustainable use of biodiversity, notably with technical advice, knowledge sharing and through robust methodologies and innovative tools for monitoring progress. For example:

- The Forest and Landscape Restoration Mechanism supports countries in scaling up forest and land restoration, degradation and forms a key pillar of technical support to implement the UN Decade on Ecosystem Restoration.

- The UN-REDD Programme supports countries halting and reversing deforestation through data and monitoring tools, advises on trade-offs in land use and facilitates access to climate financing.

- The Sustainable Wildlife Management Programme aims to improve the conservation and sustainable use of wildlife in forest, savannah and wetland ecosystems. It contributes to improving the living conditions of Indigenous Peoples and local communities who depend directly on wildlife, and to reducing the zoonotic risks associated with this use.

- The Global Soil Partnership, which delivers comprehensive global assessments on soil health, salinity, organic matter and pollution.

Data highlights

Forests cover 32 percent of the world's total land area, about 4.1 billion hectares. This area is equivalent to 0.50 hectares of forest per capita.[4] These forests are home to about 80 percent of terrestrial species. More than five billion people around the world use forest and non-timber forest products for food, medicine and livelihoods.[5]

> In low-income countries, **one in two rural mountain dwellers faces** food insecurity. In absolute terms, this number increased by more than 100 million between 2000 and 2017.[6]



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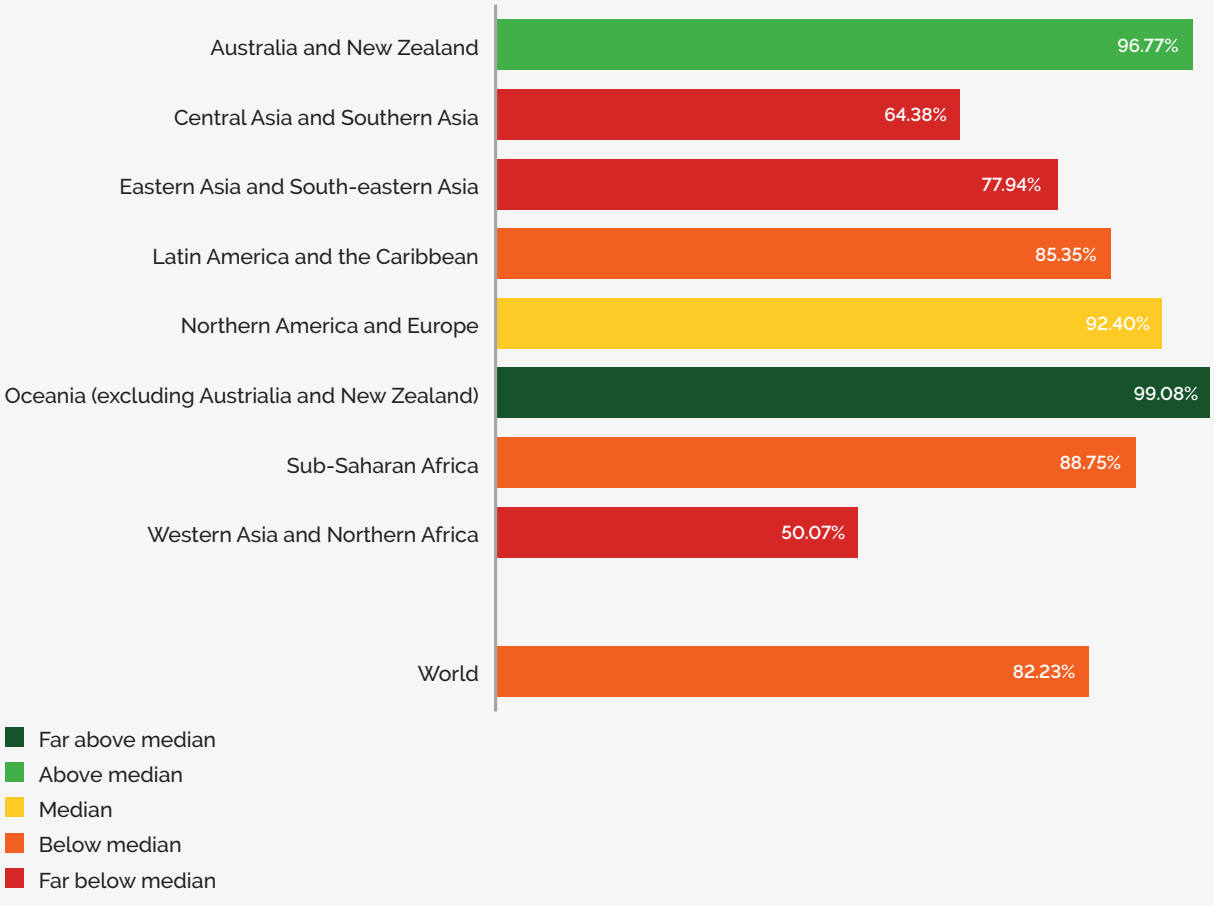
↑ **The Mountain Partnership is the United Nations alliance of partners dedicated to improving the lives of mountain peoples and protecting mountain environments worldwide. As reaffirmed by its 174th Council, FAO is the lead agency for sustainable mountain development within the United Nations (UN) system and hosts the Mountain Partnership Secretariat.**

Notable forest expansion occurred in Asia and Europe from 2015 to 2025, while significant losses were recorded in South America and Africa.[4] **In 2023, 389 million hectares of forest were certified under sustainable management schemes, a rise of 13 percent since 2010.**[7]

Between 2000 and 2021, the **global Mountain Green Cover Index, which measures changes in the area of green vegetation in mountain areas (forest, shrubs, pasture land and cropland), declined from 83 to 82.2 percent** (Figure 26). This decrease occurred mainly in lower-elevation zones, where forests, grasslands and wetlands were converted to croplands, industry and urban areas. At higher elevations, melting snow and ice have expanded barren areas and waterbodies. Over the same period, 3.5 percent of global mountain areas experienced detrimental land-cover changes, signalling mountain degradation.[7]

Agricultural expansion drives almost 90 percent of global deforestation; between 1990 and 2025, an estimated 489 million hectares of forest were lost through deforestation, largely converted to agricultural land. Worldwide, more than half of forest loss is due to the conversion of forest into cropland, whereas livestock grazing is responsible for almost 40 percent of forest loss.[8] Land-use changes, such as deforestation, is a significant driver of emerging and re-emerging zoonotic diseases and increases the risk for spillover of pathogens from wildlife reservoirs into livestock and human populations through increased contact. Similarly, such changes may also trigger shifts in occurrence of plant pest and disease outbreaks.

Figure 26. Mountain Green Cover Index (SDG Indicator 15.4.2a)



Source: Author's own elaboration based on data from FAO. 2025. FAOSTAT: SDG *Indicators*. [Accessed on 18 November 2025.] *https://www.fao.org/faostat/en/#data/SDGB*. Licence: CC-BY-4.0.

According to *The State of Food and Agriculture 2025* human-induced **land degradation affects 34 percent of cropland and pasture, directly impacting 3.2 billion people**, and is a major constraint on agrifood productivity.[9]

Over 60 percent of degraded land lies in agricultural areas, where unsustainable management practices erode soil organic carbon, reduce yields and threaten ecosystem resilience.[10]

Additionally, soil salinization and sodification affect 10 percent of cropland, imposing annual costs of about USD 27 billion. As much as 80 percent of drylands expansion is projected to occur in low-income countries, and salinity will particularly affect the poorest farmers.[11]

Key challenges

Fragmented governance on land, forest and biodiversity management

Progress towards SDG 15 is constrained by fragmented governance and the absence of coherent policy frameworks linking land, forest and biodiversity management. Policies are often developed in isolation, creating conflicting objectives and the lack of integrated legal and spatial planning frameworks undermines coordination between agriculture, environment, water and urban development. Forest governance in many countries remains highly centralized, with limited participation and devolution of authority to local and indigenous communities, reducing the effectiveness of conservation and sustainable land management measures needed to achieve SDG 15 targets.

Increasing frequency, severity of wildfires, drought and pests

Forest ecosystems face rising climate-related stressors, including wildfires and pests. Wildfire frequency and intensity are increasing. In 2023, global wildfires released about 6.7 gigatonnes (Gt) CO_2, exceeding twice the EU's fossil fuel emissions that year.[12] Instances of drought are also magnified by climate change and contribute to land degradation. The average annual area affected by insects from 2002-2020 was 34.1 million ha (as per information gathered from 45 countries and areas representing 47 percent of the world's forest area). The average forest area affected by disease in reporting countries and areas (35 countries and areas representing 37 percent of the forest area) from 2002–2020 was 9.16 million ha.[4] Many countries lack sufficient regulatory and technical capacity to conduct pest and disease risk analyses or monitor high-risk pathways for the introduction of quarantine pests and transboundary diseases. Limited surveillance systems, gaps in data exchange and insufficient enforcement of international phytosanitary standards enable the introduction of quarantine pests and diseases into new areas and their establishment, and subsequent spread, ultimately contributing to productivity losses, forest degradation, biodiversity loss and soil decline.

Inadequate tenure governance

Weak governance of tenure remains a critical barrier to sustainable land management and restoration. Many people in low-income countries rely on informal or undocumented tenure systems, where formalization alone does not guarantee security. Policy and legal frameworks often fail to recognize legitimate land rights, including customary and community-based systems, while enforcement and dispute resolution mechanisms remain limited. These gaps undermine investment in regenerative agriculture and restoration, perpetuating land degradation and resource conflicts.



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↑ **Integrated biosecurity management in agriculture for invasive species management is hampered by fragmented governance, data gaps and siloed sectoral approaches. Limited funding and expertise, weak inter-agency coordination and challenges in harmonizing environmental with traditional biosecurity indicators complicate cross-sectoral solutions. Public awareness and stakeholder engagement are often insufficient, while effective surveillance and adaptive management remain underdeveloped. These challenges must be addressed through coordinated policy reforms, capacity building, improved data integration and the institutionalization of cross-sectoral platforms for operationalizing One Health for biosecurity and invasive species management.**

Way forward

Integrate land, forest and biodiversity policies for coherent governance: Achieving SDG 15 requires integrated policy and legal frameworks that connect land, forest, water and biodiversity management under a common vision of sustainability. Strengthening coordination among agriculture, environment and spatial planning institutions is essential to ensure consistency between land-use planning, conservation objectives and agricultural development. Integrated landscape approaches, supported by clear institutional mandates and participatory planning processes, can reconcile agriculture production needs with environmental protection and land restoration.

Strengthen land tenure and equitable access to resources: The ability and incentive to invest in land conservation depend on access and rights to land. This is especially important for traditionally marginalized groups, including smallholders, women and Indigenous Peoples. Implementing the *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests* and integrating tenure considerations into spatial planning and environmental law can create a more enabling environment for sustainable land use. Recognizing customary and collective tenure systems and addressing land concentration are key to reducing vulnerability to degradation and ensuring inclusive agrifood transformation.

Scale up investment in sustainable land management and restoration: Scale up a strategic mix of public and private investments in sustainable land management that leverages climate and results-based finance to strengthen incentives, including through the optimization of public expenditures and increased agricultural investments aligned with sustainability criteria. Financial mechanisms, such as payment for ecosystem services, green credit lines and blended finance models, can incentivize sustainable practices across agricultural and forestry landscapes. Public investment should focus on building local capacity, promoting agroecological practices and supporting innovation in land restoration and soil conservation. Redirecting subsidies away from activities that drive degradation and towards practices that regenerate soil health and biodiversity will accelerate progress towards land degradation neutrality.

Enhance national monitoring systems and data capacities: Reliable and timely data are essential to track progress on SDG 15 targets. It is necessary to strengthen national plant pest, animal diseases, forest and land monitoring systems and leverage the use of data on landscape use, improve geospatial data quality and promote the use of open-source digital solutions, such as SEPAL and Collect Earth Online, for remote sensing-based monitoring, and Open Foris Arena for field data collection and analysis. Building institutional and technical capacity to collect, analyse and report data will improve the accuracy and transparency of national reporting. Investment in digital infrastructure, human resources and country-led forest and land observation systems is needed to enhance evidence-based policymaking and accountability.

Empower Indigenous Peoples and forest communities for inclusive governance: Ensuring the active engagement, rights and equitable benefit-sharing of Indigenous Peoples and other forest communities, and supporting their livelihoods, is essential for effective and sustainable stewardship of forests. The importance of participatory, multilevel governance and inclusive decision-making in forest and landscape management cannot be understated.

Promote sustainable forest and landscape management: Expanding the area of forests under long-term management plans, strengthening community forestry, and supporting restoration can help reverse forest and landscape degradation. Integrating forest, agriculture and water management within territorial approaches contributes to both climate mitigation and biodiversity conservation.

Align agricultural practices with ecosystem restoration and wetland conservation: Scale up sustainable agricultural production models that strengthen coherence between agricultural productivity, ecosystem restoration, and wetland conservation. Integrating wetland values into agricultural and land-use planning can sustain ecosystem services essential for food production, such as water regulation, soil fertility and biodiversity. Countries are encouraged to promote nature-based solutions, agroecology and other innovative approaches for efficient water management, as well as agricultural practices compatible with wetland conservation. Strengthening institutional coordination between agricultural and environmental agencies, mobilizing innovative finance and fostering public–private partnerships are key to restoring degraded ecosystems while ensuring productive, resilient agrifood landscapes.

Apply the Land Degradation Neutrality hierarchy: Adaptation to land degradation can improve near-term productivity, but it is not sufficient. Policies and investments should prioritize prevention, reduce ongoing degradation and scale restoration, shifting from short-term coping to long-term solutions that protect and regenerate land and water systems.

Adopt a systems approach: Family farms operate about 75 percent of the world's agricultural land, and 95 percent of them are smaller than 5 hectares.[13] While size is only one factor, small-scale farms often face interrelated challenges: adapting to climate shocks, transitioning to sustainable practices, and improving food security and incomes. These adjustments require substantial farm-level investments in resilience, productivity, and social protection. Targeted

strategies for all farm types are essential, ensuring smallholders gain access to finance and services, while larger farms adopt practices that align with sustainability and equity goals.

Reduce forest degradation caused by native pest outbreaks and invasive species: The growing movement of plants, wood products and packaging increases the risk of cross-border spread of quarantine pests that may affect forests. The IPPC maintains global standards for wood packaging (ISPM 15) and plants for planting, which help reduce the risk of introductions along the most economically significant pathways. Strengthening the implementation of ISPMs, particularly ISPM 11 on pest risk analysis, ISPM 15 on wood packaging materials on plants for planting, can significantly reduce the risk of new introductions. These standards help countries identify high-risk pathways, assess impacts and apply proportionate measures. Additionally, the IPPC Pest Outbreak and Alert Response System is being set up to provide tools and guidance for early warning. Strengthening surveillance, emergency preparedness and information exchange help prevent small outbreaks from escalating into large-scale crises and promote collaboration and capacity-building through dedicated networks, including FAO's Regional Forest Health and Invasive Species Networks, which are active in over 100 countries across: Africa (FISNA), Asia-Pacific (APFISN), the Near East and North Africa (NENFHIS), Europe and Central Asia (REUFIS) and Latin America and the Caribbean (FHISLAC).



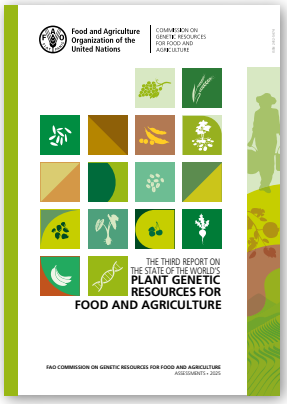
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↑ **FAO has developed the Integrated Biosecurity Index (IBI), a comprehensive, multidomain assessment tool to measure and monitor the status and progress of national biosecurity systems. It evaluates biosecurity capacity across animal, plant, forest, aquatic health, food safety and environmental domains using harmonized indicators organized under key principles, such as governance, operational capacity, emergency preparedness and ecosystem health. The IBI provides countries with a framework to identify strengths, pinpoint gaps, benchmark progress and guide evidence-based policies for sustainable management of biological risks, including invasive species, in agriculture. The tool has been piloted in five countries and supports countries to move beyond fragmented biosecurity systems to develop targeted interventions that address the complex and interconnected risks posed by invasive species in agricultural systems.**

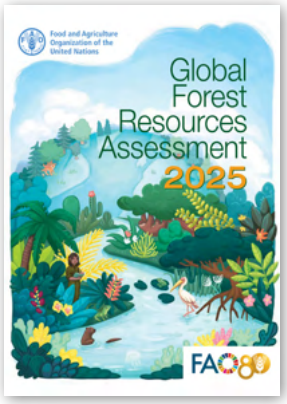
Learn more



The State of Food and Agriculture 2025



The Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture



Global Forest Resources Assessment 2025



The State of the World's Forests 2024

Notes:

1 **FAO.** 2025. *Framework for early warning of animal health threats.* Rome. https://doi.org/10.4060/cd6477en

2 **FAO.** n.d. Global Early Warning System: Safeguarding against future pandemics. In: *One Health.* [Cited November 2025.] https://www.fao.org/one-health/highlights/the-global-early-warning-system/en

3 **FAO.** 2025. *The State of Food and Agriculture - Addressing Land Degradation Across Landholding Scales.* Rome. https://doi.org/10.4060/cd7067en

4 **FAO.** 2025. *Global Forest Resources Assessment 2025.* Rome. https://doi.org/10.4060/cd6709en

5 **FAO.** n.d. *Forestry.* [Cited 6 November 2025.] https://www.fao.org/international-day-of-forests/key-messages/en

6 **FAO & UNEP.** 2023. *Restoring Mountain Ecosystems: Challenges, case studies and recommendations for implementing the UN Decade Principles for Mountain Ecosystem Restoration.* Rome and Nairobi. https://doi.org/10.4060/cc9044en

7 **FAO.** 2025. *Tracking progress on food and agriculture-related SDG indicators 2025.* Rome. https://doi.org/10.4060/cd5832en

8 **FAO.** 2022. *FRA 2020 Remote Sensing Survey.* FAO Forestry Paper No. 186. Rome. https://doi.org/10.4060/cb9970en

9 **FAO.** 2025. *The State of Food and Agriculture - Addressing Land Degradation Across Landholding Scales.* Rome. https://doi.org/10.4060/cd7067en

10 **FAO.** 2025. *Living Land – Taking a Sustainable Land Management Approach in Law.* FAO Legislative Study No. 120. Rome.

11 **FAO.** 2024. *Global status of salt-affected soils - Main report.* Rome. https://doi.org/10.4060/cd3044en

12 **United Nations.** 2024. *Wildfires around the world are more intense and frequent than ever before.* [Cited 9 September 2025.] https://news.un.org/en/story/2024/07/1152386

13 **FAO.** n.d. *Building the resilience of smallholder farmers.* [Cited 9 September 2025.] https://www.fao.org/land-water/overview/onehealth/smallholders/en/

Food and Agriculture Organization of the United Nations



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FAO and SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Sustainable Development Goal (SDG) 16, which aims to promote peace, justice and strong institutions, is integral to achieving food security and advancing sustainable agriculture.

Understanding the 2030 Agenda through the lens of SDG 16 requires increased focus on structural prevention and a risk-informed approach to peace and security and sustainable development. Without identifying and addressing the underlying drivers of violence and instability, development will not take root or be sustained, nor can sustained peace be assured without sustainable and equitable development. It is important to anticipate risks and take preventive action to reduce fragility, including through multi-hazard early warning systems and a multisectoral approach that addresses natural and human-made hazards

Conflict is the primary driver of food crises, along with climate change and economic shocks.[1] Conflict disrupts agricultural productivity, displaces farmers, destroys assets, and undermines agrifood systems, markets, and services, leading to higher food prices and food insecurity. Moreover, armed conflict in one region can have far-reaching effects on global food security due to the interconnected nature of agrifood systems. **In conflict settings, the right to adequate food — a fundamental human right — can be deeply compromised.** Therefore, conflict-sensitive interventions and support for conflict prevention and conflict resolution mechanisms

are essential for safeguarding agrifood systems and accelerating progress towards SDG 2: Zero Hunger.

Poor governance hinders equitable access to food and resources. A lack of transparency and institutional effectiveness undermines land tenure rights, equitable resource distribution and investments in supporting resilient sustainable agricultural practices. **By advancing inclusive governance, upholding the rule of law, and fostering stable environments, SDG 16 lays the groundwork for resilient agrifood systems that leave no one behind.**

Since its establishment in 1945, the Food and Agriculture Organization of the United Nations (FAO) has been **committed to improving food security, nutrition, poverty reduction, and sustainable agriculture — efforts that can contribute to reducing the root causes of conflict**. Recognizing that food security, agriculture, and natural resources can be drivers of both conflict and peace, FAO approved its *Corporate Framework to Support Sustainable Peace in the Context of Agenda 2030* in 2018. This framework integrates approaches that contribute to sustaining peace into FAO's policies, guidance, programmes, and partnerships, reinforcing its commitment to



© WEPS-NENA Regional Project

↑ **Modernizing governance and institutions was one of the key objectives of the WEPS-NENA project, which assessed the efficiency, productivity, risks and limitations of water use across eight countries in the Near East and North Africa (NENA): Algeria, Egypt, Jordan, the Islamic Republic of Iran, Lebanon, Morocco, Palestine, and Tunisia.**

SDG 16. FAO's work in crisis-affected contexts is further guided by the *Committee on World Food Security's Framework for Action for Food Security and Nutrition in Protracted Crises*, which provides principles for strengthening resilience, protecting livelihoods and ensuring the right to adequate food in situations of prolonged instability.

Governance is a central pillar of FAO's policy support and programmatic interventions across all levels, whether in peace contexts or in emergencies and protracted crises. Transformative agrifood systems require stronger, more transparent, and accountable institutions. They also demand adaptive governance, regulatory frameworks, and investments in human capital.[2]

To promote long-term resilience and participatory efforts, FAO adopts an intersectional approach to address the unique challenges faced by smallholder farmers, youth, Indigenous Peoples, people living in poverty, migrants, persons with disabilities, and the forcibly displaced, among others. In collaboration with partners, FAO supports countries in developing policy and regulatory frameworks, innovative institutional arrangements, and functional rural organizations that empower small-scale producers and people in vulnerable situations to overcome social, political, and economic barriers.

Utilizing tools like the *Focus on Governance* framework and the Hand-in-Hand Geospatial Platform, FAO provides methodological intelligence, data and analytics to guide policy decisions. This evidence-based approach helps governments anticipate challenges and implement effective policies that strengthen institutions and promote justice.

Data highlights

> In 2024, almost 295 million people experienced acute levels of hunger. **Conflict and insecurity were the primary drivers for almost half – 140 million people across 20 countries and territories.**[3]

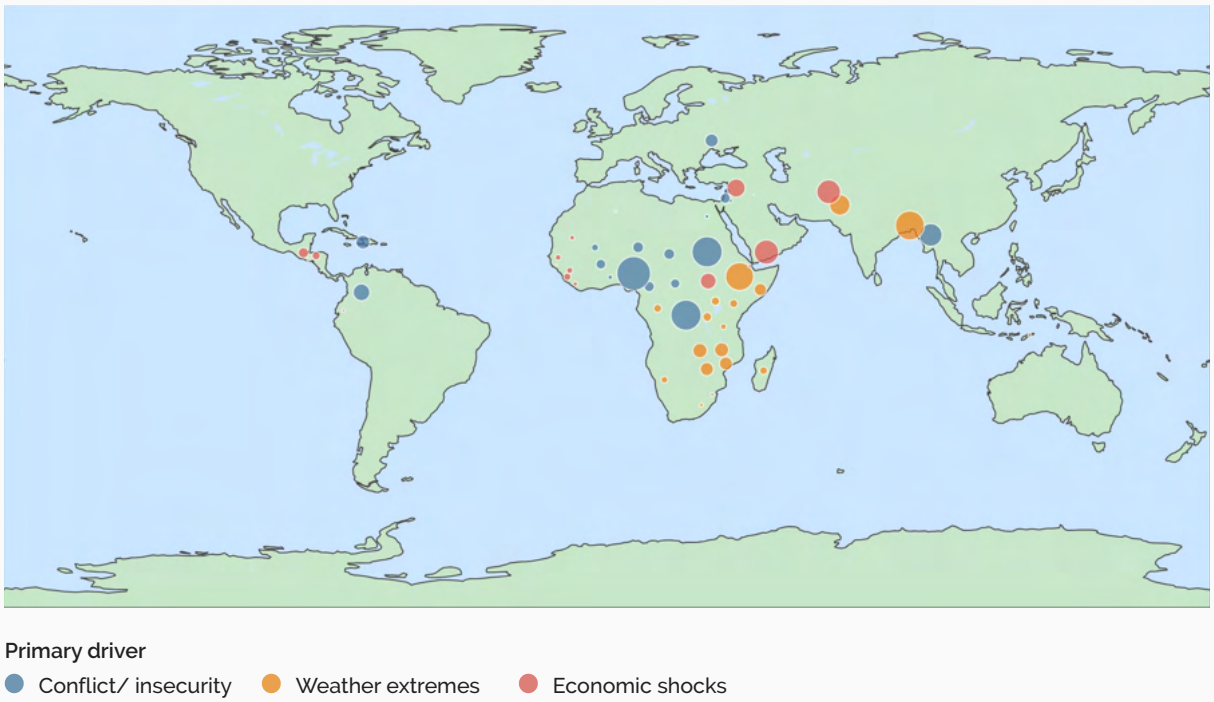
Conflict and insecurity are upending millions of lives. In 2024, record levels of conflict underlined the urgent need for peacebuilding. **The number of forcibly displaced people reached an unprecedented level of nearly 123.2 million at the end of 2024.** Millions of people have remained trapped in protracted displacement for years, some even for decades, necessitating durable solutions that work with the forcibly displaced and their host communities.[4]

To build inclusive agrifood systems it is essential to engage key stakeholders who play vital roles in ensuring food security and sustainability:

Smallholder farmers: Five out of every six farms worldwide are two hectares or less, **producing roughly 35 percent of the world's food**, therefore playing a critical role in food security.[5]

Youth: **Agrifood systems are particularly important source of employment for young people**, particularly in the Global South: in 2021, 44 percent of employed youth worked in agrifood system.[6]

Figure 27. Number of people in food crisis or worse (IPC/CH Phase 3 or above), by primary driver 2018–2024



Note: Refer to the disclaimer on page ii for the names and boundaries used in this map.

Source: Adapted from FSIN (Food Security Information Network) & GNAFC (Global Network Against Food Crises). 2025. *Global Report on Food Crises 2025*. Rome, FSIN. *https://www.fsinplatform.org/grfc2025/*

Women: Globally, **36 percent of working women are employed in agrifood systems**. In sub-Saharan Africa, 66 percent of women's employment is in agrifood systems (compared to 60 percent for men). In Southern Asia, 71 percent of women in the labour force work in agrifood systems (compared to 47 percent of men). In fisheries and aquaculture, women make up 21 percent of workers in the primary sector and nearly 50 percent of workers across the entire aquatic value chain.[7]

Indigenous Peoples: There are **476 million Indigenous Peoples around the world, living in more than 90 countries**. Due to their vast knowledge, food management systems and territorial management systems, their territories are home to more than 80 percent of the planet's biodiversity.[8]

Migrants: Migrants are integral to agrifood systems, with 80 percent of all migratory movements involving rural areas. **30 percent of farm workers in key food value chains are seasonal migrants.** By 2050, an estimated 216 million people are expected to migrate within their own countries due to climate change.[9]



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↑ The long-standing collaboration between FAO and the Government of Indonesia has been instrumental in advancing agrifood systems transformation as a core national goal. Through joint analyses, participatory dialogues, and capacity-building efforts, Indonesia has embedded systems approach into its national and sub-national planning positioning a systems approach at the centre of its economic, social, and environmental priorities. Through the 'Governance innovation for sustainable development of food systems' Subprogramme (funded by the FAO Flexible Voluntary Contribution (FVC), FAO has coordinated a pioneering agrifood systems modelling and analytical approach in support to the Government of Indonesia. This innovative project combined economic models with governance and political economy analysis to map impacts, synergies, potential trade-offs and political feasibility of various policy interventions for agrifood transformation. It has also facilitated a set of participatory national and sub-national dialogues, building shared priorities for change. The work generated insights that help tackle multiple, simultaneous economic, social and environmental challenges informing the Government of Indonesia's medium- and long-term development plans. To enlarge the basis of competences and skills required to move to effective implementation and to bring results at scale, the Government of Indonesia and FAO organized a training on agrifood systems transformation targeted to national and decentralized officials, as well as to selected stakeholders, including within research, civil society and the private sector. The training strengthened public officials' capacity to apply a systems approach in translating national agrifood systems priorities into actionable, locally adapted policies and interventions. This governance-centred approach ensures that the transformation process is inclusive, evidence-based, and responsive to local realities, reinforcing Indonesia's ownership and leadership in advancing agrifood systems transformation.[10, 11]

Key challenges

Climate pressures heighten conflict risks

Climate change exacerbates the risk of conflict; and conversely, conflict increases vulnerability to climate hazards.[10] **Among the most climate-vulnerable countries, 70 percent are also politically and economically fragile.** Climate change can be a 'threat multiplier' as it affects natural resource availability, impacting agrifood systems, livelihoods, food security and nutrition. This, in turn, fuels displacement and intensifies tensions and conflicts between communities.

Global economic shocks weaken social stability

Global economic shocks can cause food price inflation and leave communities vulnerable to hunger and conflict, often disproportionately impacting marginalized groups, undermining efforts to build inclusive and just societies.

Insecure land and resource rights drive local tensions

Land tenure insecurity and inequitable resource distribution are persistent sources of conflict, especially in rural areas. The right to adequate food starts in many locations with the right to produce and, therefore, the underlying rights to land. For poor farmers, access to land and tenure security are critical assets for guaranteeing their own food security and livelihoods and is also critical for local communities.



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↑ FAO's "Refugee Agricultural Value Chains for Economic Self-Reliance" project, funded by the IKEA Foundation, empowers refugees and host communities in Uganda's Kiryandongo Refugee Settlement by providing training, tools and resources to develop sustainable livelihoods. Through Farmer Field Schools, participants gain agricultural skills, financial literacy and business knowledge, enabling them to grow and sell value-added crops like passion fruit while fostering peaceful coexistence between refugees and local residents. The project addresses immediate needs, promotes self-reliance and builds a foundation for long-term economic stability and community harmony.[11]

Way forward

Address the underlying drivers of instability: Support diplomatic efforts and political dialogue that address the underlying drivers of instability and create conditions for sustainable peace. FAO can contribute by providing neutral evidence to inform negotiations, facilitating inclusive dialogues on natural resources and agrifood systems, and strengthening local dispute resolution mechanisms. These efforts help reduce tensions, prevent escalation and reinforce broader peacebuilding processes that are essential for long-term food security.

Strengthen governance and adopt community-based approaches: Institutions and governance dynamics determine the functioning of agrifood systems. Improved governance at all levels, and community-based approaches can enhance food security and contribute to peace. Strengthening regulatory frameworks and institutions is important to ensure effective and equitable use of and rights to renewable natural resources. Similarly, strengthening formal and/or informal conflict management mechanisms at all levels is central.



© FAO Colombia

↑ **FAO supports its Members in designing and implementing resilience-building measures to assist vulnerable communities and reduce conflicts. In Colombia, FAO has played a pivotal role in adopting and implementing innovative anticipatory actions to enhance disaster preparedness and address the impacts of climate-related challenges, particularly El Niño and La Niña. These extreme weather events have severely affected food security, leaving millions at risk. Key initiatives included technical assistance, raising awareness and facilitating investments in drought-resistant agriculture and water recovery, prioritizing smallholders, Indigenous Peoples and rural women. These efforts strengthened capacities to adapt to climate variability, safeguard livelihoods and promote economic justice while ensuring food access as a basic human right. By partnering with the Ministry of Agriculture and Rural Development, FAO has worked to integrate these practices into public policy frameworks and government initiatives.[12]**

Invest in resilience measures: Investing in resilient agrifood systems and communities will reduce economic and sociopolitical shocks and the likelihood of conflicts and conflict escalation. Given the interlinkages of agriculture, food security, rural poverty, conflict and peace, resilience interventions can strongly influence conflict dynamics. This is especially true at the local level, where conflict can erupt due to competition over natural resources, such as land, water, forestry, fisheries, food and agricultural livelihoods. Understanding and finding protective, conflict-sensitive, localized solutions to anticipate, prevent, where possible, and address conflict over natural resources, which underpin agrifood systems, is important. Strengthening community resilience addresses the root causes of food insecurity that can positively impact peace. Equally, strong, viable, resilient livelihoods are central to mitigating food insecurity in insecure and conflict-affected contexts.

Adopt climate-smart agriculture: This includes approaches that sustainably increase agricultural productivity and incomes, and build the resilience of people and agrifood systems to climate change in order to reduce its impacts. Such approaches may address climate-sensitive conflict drivers while supporting local peace and conflict prevention.

Inclusive and transparent legal and institutional frameworks: Inclusive land governance and administration systems must be integral components of social protection strategies, helping to build resilience to vulnerabilities, shocks and stresses. Ensuring secure land rights empowers people in vulnerable situations, particularly women, fosters sustainable resource management, and encourages investment. This approach enables smallholders to access essential resources, promoting equitable and sustainable development and contributing to sustaining peace.

Develop early warning systems: Conflict prevention measures include tackling the root causes of instability through mitigating and adapting to climate change, managing natural resources sustainably, and creating early warning systems and community-based dialogues with an emphasis on dispute resolution. Early warning systems serve as a crucial initial safeguard for protecting lives and conflict prevention, ensuring food security and maintaining social cohesion, but they need to be complemented by timely action to ensure full benefits are realized.

Learn more



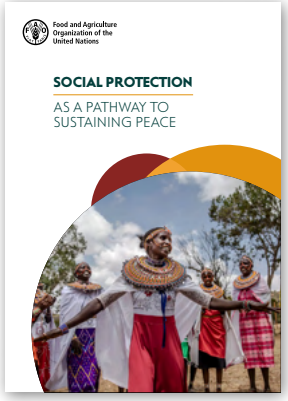
Operationalizing pathways to sustaining peace in the context of Agenda 2030



Focus on governance for more effective policy and technical support



Developing sustainable and resilient agrifood value chains in conflict-prone and conflict-affected contexts



Social protection as a pathway to sustaining peace

Notes:

1 **FSIN & GNAFC.** 2025. Global Report on Food Crises 2025. Rome, FSIN. *https://www.fsinplatform.org/grfc2025/*

2 **FAO.** 2025. *Reviewed Strategic Framework 2022-2031.* Rome. *https://openknowledge.fao.org/handle/20.500.14283/nq819en*

3 **FSIN (Food Security Information Network) & GNAFC (Global Network Against Food Crises).** 2025. *Global Report on Food Crises 2025.* Rome. *https://www.fsinplatform.org/grfc2025/*

4 **United Nations.** 2025. *The Sustainable Development Goals Report 2025.* New York, USA. *https://unstats.un.org/sdgs/report/2025/*

5 **Lowder, S. K., Sanches, M. & Bertini, R.** 2021. What farms feed the world and has farmland become more concentrated? In: *World Development.* Rome, Elsevier. *https://www.sciencedirect.com/science/article/pii/S0305750X2100067X?via%3Dihub*

6 **FAO.** 2025. *The Status of Youth in Agrifood Systems.* Rome. *https://doi.org/10.4060/cd5886en*

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

8 **FAO and Alliance of Biodiversity International and CIAT.** 2021. *Indigenous Peoples' food systems: Insights on sustainability and resilience in the front line of climate change.* Rome. *https://doi.org/10.4060/cb5131en*

9 **FAO.** 2023. *Rural Migration: contributing to food security and climate adaptation.* Rome. *https://openknowledge.fao.org/handle/20.500.14283/cc5330en*

10 **IPCC (Intergovernmental Panel on Climate Change).** 1–34. Summary for policymakers. In: *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.* Geneva. *https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf*

11 **Pace, N., Sitko, N. & Bordi, D.** 2023. *Building evidence on agricultural value chains interventions in refugee settings. Baseline analysis in Uganda.* Rome, FAO. *https://doi.org/10.4060/cc5131en*

12 **FAO.** 2024. Colombia. In: *FAO emergencies and resilience.* [Cited 22 January 2025.] *https://www.fao.org/emergencies/where-we-work/COL/en*

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FAO and SDG 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

FAO SDG brief | April 2026

FAO SDG briefs bring together FAO actions and recommendations to advance agrifood systems transformation for the achievement of the 2030 Agenda and beyond.

Sustainable Development Goal (SDG) 17 is the linchpin of the 2030 Agenda; without strengthened finance, fair trade, access to technology, capacity development, reliable data and inclusive partnerships, none of the other SDGs can be achieved.

Today, global cooperation is more urgent than ever. Climate change, conflicts and economic instability are exposing vulnerabilities and deepening inequalities, especially in agrifood systems, which are among the first to be impacted during crises, yet their deep interlinkages with all 17 SDGs make their transformation one of the most powerful accelerators of sustainable development.

For the Food and Agriculture Organization of the United Nations (FAO), SDG 17 is both an enabler and an accelerator. Sustainable agrifood systems depend on cross-sectoral and international partnerships, data and knowledge-sharing, and investment, and in turn, they generate solutions that advance progress across the 2030 Agenda.

FAO engages innovative partnerships and **mobilizes finance and investment** for at-scale agrifood investments through the Hand-in-Hand Initiative, building investment pipelines for governments in over 83 countries. Its annual Investment Forum convenes governments, international financial institutions and the private sector to hear and de-risk agrifood investments through its innovative matchmaking

bilateral engagements. FAO also advises on debt-for-climate/nature swaps, fiscal space and domestic resource mobilization for climate, nutrition and agrifood priorities. Since 1964, the Investment Centre has served as FAO's primary vehicle for supporting agrifood investment within Member Nations and partnering with International Financial Institutions (IFIs). Every year, the Centre supports billions of USD in sovereign lending by IFIs that goes to financing agrifood sector investment in FAO Member Nations. It provides investment and finance solutions to help de-risk agrifood investments by leveraging FAO's knowledge, technical expertise and innovation. Through the Centre, FAO is also pioneering innovative financing solutions, helping to crowd in more private investment flows and bridge the financing gap for low-income countries.

FAO leverages its expertise in global **agricultural markets and trade** to provide analytical products and policy guidance to the United Nations (UN), interested actors and the international community at large. It maintains a comprehensive market intelligence service for major agricultural commodities and manages early warning systems for potential food shortfalls. The Organization also houses the Secretariats of the Agricultural Market Information System (AMIS) and the Global Information and Early Warning System on Food and Agriculture (GIEWS).

FAO collects and provides free access to **food and agriculture data and statistics** for over 245 countries and territories under FAOSTAT. As custodian of 22 SDG indicators, FAO provides key information to support countries in tracking progress towards the SDGs. The Organization continuously works to advance disaggregated data (sex, age, geography, disability), and integrate geospatial, administrative and survey data to assist better decision-making.

FAO facilitates solutions to agrifood system challenges through **science, technology and innovation** and provides knowledge for strengthened science- and evidence-informed decision-making. It develops tools, such as the *Agrifood Systems Technologies and Innovations Outlook*, FAO Digital Services Portfolio, geospatial platforms, and monitoring and early warning systems to help countries identify and adopt innovations including digital agriculture, artificial intelligence and precision farming. FAO collaborates with national agricultural research systems, extension and advisory services, regional agricultural research and extension organizations and other development partners to promote integrated agricultural innovation ecosystems, innovation hubs, innovation policy labs, science-policy interfaces and innovation niche partnerships for grassroot innovations. It also partners with the UN Technology Bank for the Least Developed Countries (LDCs) to expand access to agricultural technologies.

FAO supports institutional **capacity-building** in ministries of agriculture, trade, statistics and finance to enhance policy development and implementation. FAO led Farmer Field Schools and agricultural extension and advisory services additionally strengthen knowledge exchange at the community level, while the FAO E-learning Academy has reached over 1.2 million users online globally.

South-south and triangular cooperation is a key delivery modality of FAO to catalyse agricultural development, food security, rural development, poverty reduction and nutrition over the past two decades and has been an important and effective modality to support low-income countries in their effort to transform the agrifood systems.



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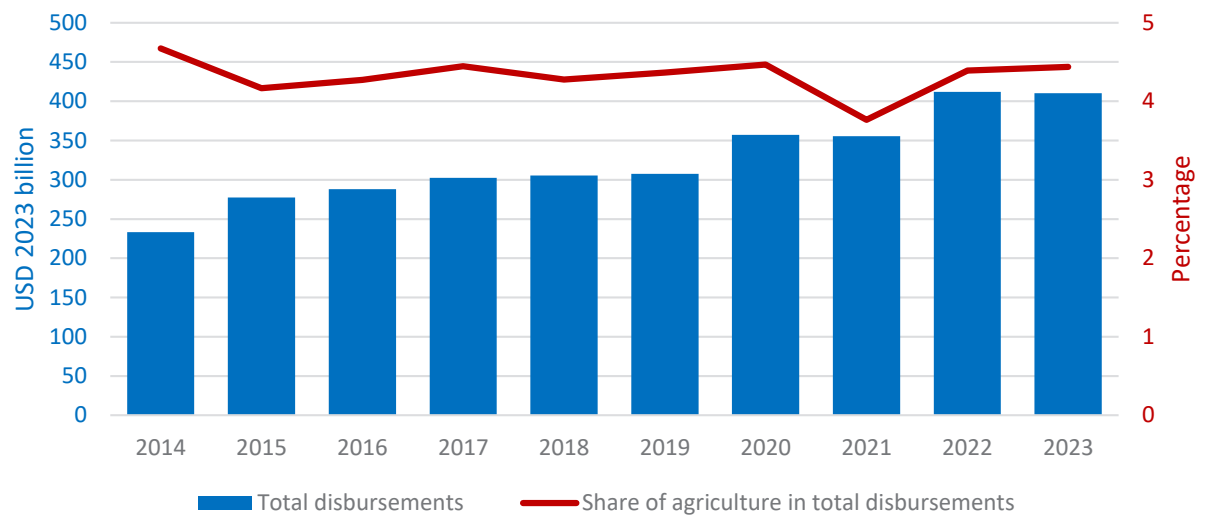
↑ **In 2025, in partnership with UNICEF and the World Health Organization (WHO), FAO spearheaded the adoption of a new SDG indicator under SDG 2 on Minimum Dietary Diversity (MDD) – the first global measure of diet quality. As custodian for this indicator, FAO provides countries with a simple tool to assess women's diets, inform policy, and guide action. This landmark step fills a critical gap in nutrition monitoring and strengthens efforts to end all forms of malnutrition.**

FAO's strength lies in its ability to **bring together a diverse range of actors to address global challenges** in a coordinated, science-based, and inclusive manner through international and intergovernmental platforms such as the Committee on World Food Security as well as initiatives such as the World Food Forum. It also supports the follow-up to the UN Food Systems Summit as host of the UN Food Systems Coordination Hub, supporting countries implement national pathways for agrifood systems coordination through strategic partnerships. In addition, the *FAO Global Roadmap* provides a common, action-oriented framework to guide coordinated efforts across sectors and actors, supporting sustainable agrifood system transformation and the achievement of food security, nutrition and climate goals.

Data highlights

SDG Targets 17.2 and 17.3 call for the implementation of development assistance commitments and mobilization of additional financial resources for low-income countries from multiple sources. **Development flows to agriculture, forestry and fishing (AFF), which are tracked under SDG Indicator 2.a.2, increased by 72 percent between 2014–2023, from USD 10.9 billion to USD 18.2 billion (in constant 2023 dollars).** However, AFF's share of total development finance declined over the same period (Figure 28).[1] **Meanwhile food security and nutrition received less than a quarter of total official development assistance and other official flows.** From 2017-2021 these flows averaged USD 76 billion annually (in constant 2021 dollars) and **only 34 percent directly addressed the major drivers of food insecurity and malnutrition.**[2]

Figure 28. Development flows and share of agriculture 2014-2023



Source: Adapted from FAO. 2025. *Development flows to agriculture 2014–2023 – Global and regional trends.* FAOSTAT Analytical Briefs, No. 111. Rome. https://doi.org/10.4060/cd6073en

Food and agricultural trade has expanded significantly, rising in value from about USD 400 billion in 2000 to nearly USD 2 trillion in 2022, with volumes more than doubling.[3] This growth highlights the increasing interconnection of agrifood systems and the central role of international markets in their transformation. Yet, persistent challenges – including high trade costs and risks related to weather extremes, conflicts and geopolitical tensions, and ad hoc trade restrictions – continue to heighten uncertainty in global agrifood markets. Strengthening market transparency and ensuring a predictable, fair and rules-based multilateral trading system are essential to advancing food security and sustainable development.

High-quality, timely and disaggregated data is vital for SDG progress. SDG monitoring capacity has improved over the last decade. Data coverage of SDG indicators has grown, with the share of Tier I indicators (having at least 50 percent country coverage) going from one-third in 2016 to nearly 70 percent today, though important gaps persist.[4] The availability of data for the 22 indicators under FAO custodianship has also grown, with the average country now reporting on two thirds of the indicators (up from only one third in 2017). With more and higher quality data, countries can better track and accelerate progress.

Scaling up environmentally sound technologies and ensuring their equitable transfer and diffusion are critical for addressing agrifood system challenges and advancing sustainable development.

Figure 29. Top 20 pre-emerging and emerging technologies and innovations with highest potential to address agrifood system challenges

Pre-emerging and emerging technology/innovation	Global Relative Advantage score	Trade-off level
Nature-based and ecosystem innovations	6.76	Low
Artificial General Intelligence in agriculture	6.54	Medium
Agricultural innovation policy labs	6.48	Low
Energy storage technologies	6.46	Medium
Social impact bonds	6.26	Low
Realtime satellite imagery, positioning systems and autonomous GIS	6.20	Medium
6–10G connectivity in agrifood systems	6.17	High
Environmental biotechnologies	6.11	Medium
Synthetic biology	6.09	Medium
Ensuring access to science-based information on sustainability matters	5.99	Low
Internet of Food	5.97	Medium
Frugal innovation	5.95	Low
Digital twins	5.92	High
Quantum internet and computing applied to agrifood systems	5.91	Medium
Aerial robotics and drones	5.89	High
New methods for controlling gene expression	5.87	Medium
Global logistics network	5.82	Medium
Territorial or landscape value chain and food-to consumer economy policies	5.66	Low
Carbon credits in agriculture and aquaculture	5.56	Medium
Nanomaterials for water technologies	5.41	Medium

Note: "Trade-off level" is a qualitative indication on the level of trade-offs that need to be acknowledged should the technology be prioritized. These levels depend on the externalities of maturing a given technology or innovation. A lower trade-off level is better, meaning lesser negative externalities can be identified.

Source: Alexandrova-Stefanova, N., Nosarzewski, K., Mroczek, Z.K., Audouin, S., Djamen, P., Kolos, N. & Wan, J. 2024. *Shaping sustainable agrifood futures: pre-emerging and emerging technologies and innovations for impact – An extended global foresight*

Capacity development remains critical as without adequate education and training, young people are more likely to remain trapped in low-quality jobs, perpetuating cycles of poverty and inequality. Although education levels have improved globally, **rural youth continue to face disadvantages: only 74 percent complete lower-secondary education**, compared with 85 percent of their urban peers. Technical and vocational education and training, with its focus on practical, work-related skills, offers a pathway to better employment. Yet participation remains limited, with **only 13.6 percent of youth worldwide completing vocational education**, and just 9 percent in Africa.[5]



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↑ **FAO has implemented over 140 South-South and triangular cooperation projects across 110 countries, with a portfolio budget of about USD 550 million in support of agrifood systems, food security and rural development.[6] Nearly 80 percent of these projects are in sub-Saharan Africa. Through partnerships with countries including Brazil, China, Morocco, the Bolivarian Republic of Venezuela and Viet Nam, FAO has helped transfer knowledge, tools and technologies tailored to national and regional food security priorities through these projects.[7]**

Key challenges

Debt pressures and financing shortages limit agrifood investment

Agrifood systems investment is falling short, leaving many low- and middle-income countries with severe financing gaps while also facing mounting debt stress; For LDCs, the debt service as a proportion of exports of goods and services surged by 80 percent between 2022 and 2024.[8] The debt burden challenge limits the ability of countries to invest in food, health, and education. Financial instability and currency volatility further threaten efforts to build resilient, inclusive agrifood systems. Private investment is key to bridging the financing gap, but the sector — ranging from large firms to smallholders and agrifood small- and medium-sized enterprises (SMEs) — often lacks the enabling environment to thrive. Structural barriers like limited finance, poor infrastructure and regulatory constraints persist.

Unequal access to technology widens productivity and resilience gaps

Millions in low- and middle-income countries, especially small-scale producers, remain excluded from science, technology and innovation tools and knowledge, thus widening the productivity gap. Responding to diverse local contexts remains a core challenge.

Lack of inclusion in partnerships reduce impact

Despite progress, many initiatives continue to overlook small-scale producers, women, Indigenous Peoples, and local governments — undermining equity, ownership and the effectiveness of sustainable development efforts.

Way forward

Increase the amount and efficiency of development aid flows and innovative financial tools by acknowledging and leveraging the multiple outcomes of spending on food security and nutrition: It is essential to agree on a common framework for development aid financial flows addressing food security and nutrition, in light of the recommended definition (chapter 3) and principles (chapter 5) outlined in *The State of Food Security and Nutrition (SOFI) 2024*. To support and operationalize this effort, the **Hesat2030 Food Security and Nutrition Aid Analyser** enables donors to track, monitor and analyse aid flows to food security and nutrition, incorporating the SOFI 2024 framework. It is specifically designed to enhance the allocation of public and private resources by improving donor coordination and policy integration, and by supporting evidence-based decisions through the integration of economic modelling findings.

Mobilize greater and more effective public and private investment in low-income countries from multiple sources: Strengthened collaboration with IFIs, national and regional development banks, the private sector, researchers, academia and civil society, including producer organizations, is essential to deliver tailored, scalable investment and finance solutions for a greener, healthier and more sustainable future. Enhanced cooperation models must be established among key financing actors in the agrifood system to derisk investments through knowledge, technical expertise and innovation. This includes innovative finance, such as impact investing, fintech, blended finance, and other derisking instruments - and carbon finance, all of which help crowd in more private investment flows and bridge the financing gap for small-scale farmers and SMEs.

Enhance market transparency: Timely and reliable market information is essential for guiding policy decisions and evidence-based policymaking processes. In its absence, countries may turn to ad hoc policies and trade restrictive measures (such as export restrictions) that, while aimed at safeguarding domestic supplies, often exacerbate uncertainty and volatility in global markets. Initiatives that enhance market transparency and foster coordinated policy responses should be further supported and strengthened.



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↑ **FAO's Hand-in-Hand Initiative, a flagship under the *four betters* framework, helps countries identify and prioritize agrifood investments with priority for LDCs, Landlocked Developing Countries and Small Island Developing States. It applies geospatial targeting and data to guide investments where they are most needed. The investment cases which FAO has helped develop have grown from USD 1.5 billion in 2022 to USD 4.5 billion in 2024, reflecting increasing country demand and donor support, focusing on poverty reduction, food security and climate resilience.**



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↑ **The FAO, IFAD, and World Bank 50x2030 Initiative aims to close the global agricultural data gap by transforming data systems in 50 countries across Africa, Asia, the Near East, and Latin America and the Caribbean by 2030. Building on FAO's AGRISurvey and the World Bank's LSMS-ISA, the initiative establishes strong, nationally representative survey programmes to deliver high-quality, timely agricultural data for evidence-based decision-making. FAO leads the data production component through technical assistance and capacity building.**

Support a well-functioning universal trading system: A rules-based, non-discriminatory, open, fair, inclusive, equitable and transparent multilateral trading system, with the WTO at its core, is essential for promoting agricultural and rural development and contributing to world food security and improved nutrition. Regional trade agreements also play a complementary role by deepening integration, promoting cooperation, and supporting investment and sustainable development.

Promote innovation capacity and context-appropriate technology transfer: Technology transfer remains important for closing agricultural productivity gaps and meeting climate mitigation, adaptation and resilience objectives. However, conventional linear transfer-of-technology models risk generating technological dependency rather than endogenous innovation capacity, particularly in countries with nascent innovation systems. A more effective approach strengthens national agricultural innovation systems by jointly developing policy capacity and local actors' capacities to learn, adapt and co-create appropriate technologies tailored to local agroecological and socioeconomic contexts, value chains and rural communities' needs — mobilizing farmer field schools, innovation platforms and policy labs. Drawing on behavioural sciences is equally key to better understanding and addressing the cognitive, social and institutional barriers that shape actors' innovation behaviours and learning processes. Cross-country and regional innovation networks — supported by regional innovation scaling hubs — are critical to boost peer learning, joint problem-solving and collaborative technology co-development — so that innovations proven in one context can be scaled and adapted across similar settings within value chains or regions. Throughout, agricultural extension and advisory services must operate as part of a continuum with research and education actors, jointly accompanying end-users along technology co-development trajectories rather than acting as isolated conduits for technology diffusion.

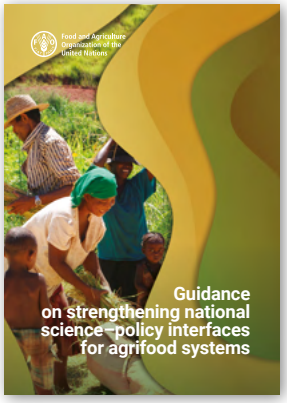
Invest in data systems: Better data helps decision-makers target policies and programmes where they are most needed. Investment in data needs to be drastically scaled up, especially in light of recent research demonstrating the high return on investment for funding data and statistics-related activities.

Promote policy coherence and multistakeholder partnerships: Transformative governance and a strong science-policy interface are critical for greater policy coherence, shared ownership and collective action. Creating effective science-policy interfaces require sustained commitment and investment from diverse stakeholders, including governments, civil society, academia and the private sector. Multistakeholder partnerships are vital to harnessing strengths, resources and networks to tackle complex issues. Building political will and institutional support is essential to prioritize evidence-based policymaking. By leveraging collaboration among governments, businesses, academia and civil society, we can develop sustainable solutions with real impact. Inclusive partnerships empower marginalized communities, women, youth and vulnerable populations, fostering multistakeholder engagement to enhance standard setting, build consensus on global priorities, drive evidence-based action, create economic opportunities and market access, and safeguard ecosystems.

Learn more



Rethinking our food systems: A guide for multi-stakeholder collaboration



Guidance on strengthening national science–policy interfaces for agrifood systems



The State of Agricultural Commodity Markets 2024



FAO Investment Centre – Annual review 2024

Notes:

1 **FAO.** 2025. FAOSTAT: *Development Flows to Agriculture.* [Accessed in July 2025.] http://www.fao.org/faostat/en/#data/EA. Licence: CC-BY-4.0.

2 **FAO, IFAD, UNICEF, WFP & WHO.** 2024. *The State of Food Security and Nutrition in the World 2024 – Financing to end hunger, food insecurity and malnutrition in all its forms.* Rome. https://doi.org/10.4060/cd1254en

3 **FAO.** 2024. *The State of Agricultural Commodity Markets 2024 – Trade and nutrition: Policy coherence for healthy diets.* Rome. https://doi.org/10.4060/cd2144en

4 **UNSTATS.** 2025. *The Sustainable Development Goals Extended Report 2025.* New York, USA. https://unstats.un.org/sdgs/report/2025/extended-report/Extended-Report-2025_Goal-17.pdf

5 **FAO.** 2025. *The Status of Youth in Agrifood Systems.* Rome. https://doi.org/10.4060/cd5886en

6 **FAO.** 2024. Evaluating South-South and Triangular Cooperation. In: *Evaluation at FAO.* [Cited 11 September 2025.] https://www.fao.org/evaluation/highlights/detail/evaluating-south-south-and-triangular-cooperation/en

7 **FAO.** 2025. Countries unite to scale up South-South cooperation for agrifood systems transformation. In: *FAO Regional Office for Africa.* [Cited 11 September 2025.] https://www.fao.org/africa/news-stories/news-detail/countries-unite-to-scale-up-south-south-cooperation-for-agrifood-systems-transformation/en

8 **UNCTAD.** n.D. Costlier debt servicing undermines the achievement of the SDGs. In: *SDG Pulse.* [Cited 26 September 2025.] https://sdgpulse.unctad.org/debt-sustainability/

Conclusion

The 2030 Agenda calls for a decisive shift in how the world addresses hunger, poverty, inequality and environmental degradation. The evidence presented across the 17 SDG briefs in this publication demonstrates that such a shift is only possible through the transformation of agrifood systems. FAO's *Reviewed Strategic Framework* 2022–2031, together with its *Medium Term Plan (MTP) 2026–29*, has positioned the Organization to support Members in driving this transformation by applying a coherent, systems-based delivery model explicitly aligned with the 2030 Agenda, providing a clear pathway to translate global commitments into practical, context-specific solutions that advance all 17 SDGs.

Accelerating SDG action through FAO's strategic vision and core functions

The Strategic Framework (2022–2031), built around the *four betters*, articulates the long-term outcomes that FAO and its Members seek to achieve: more efficient, inclusive, resilient and sustainable agrifood systems that deliver better production, better nutrition, a better environment and a better life, leaving no one behind. They also serve as an organizing principle for FAO's technical and operational support, ensuring that policy guidance, normative work, partnerships and investment assistance are aligned with the interconnected nature of the SDGs. The Programme Priority Areas (PPAs) translate each better into concrete thematic entry points that reflect the Organization's comparative advantages. These are complemented by accelerators – technology, innovation, data and strengthened governance and human capital – that support countries in addressing complex challenges and scaling up solutions for greater impact.

The MTP 2026–29 operationalizes this vision in the near term, allowing FAO to continually refine its approach, build on lessons learned, and respond to evolving challenges and country needs. This dynamic planning cycle guarantees that FAO's contributions remain relevant and impactful across all SDGs – from eradicating hunger to fostering climate action – under a unified strategic umbrella.



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Across the SDG briefs, the *four betters* emerge as a unifying thread that links each Goal to the broader transformation of agrifood systems. The briefs illustrate how *better production*, *better nutrition*, a *better environment* and a *better life* help countries interpret the SDGs not as isolated targets, but as interconnected outcomes shaped by the functioning of agrifood systems.

The briefs also emphasise that sustainable development cannot be achieved through technical solutions alone. It demands coordinated action across sectors, inclusive governance and investments that reach those most at risk of being left behind. In this respect, FAO's systems approach provides a structured way to support Members in navigating trade-offs, maximizing synergies and identifying opportunities for cross-sectoral collaboration. By linking local challenges to global commitments and grounding solutions in evidence, the Organization helps countries move from fragmented interventions to coherent, long-term strategies that advance the 2030 Agenda.

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