



Food and Agriculture
Organization of the
United Nations

SUSTAINABLE
DEVELOPMENT
GOALS

working for Zero Hunger

TRANSFORMING FOOD AND AGRICULTURE TO ACHIEVE THE SDGs

20 interconnected
actions to guide
decision-makers

These guidelines are primarily directed towards decision-makers responsible for integrating the goals and targets of the 2030 Agenda for Sustainable Development into national policies and programmes. They will be of value to public and private actors, including investors, researchers and technical practitioners, involved in the broad area of food and agriculture, and rural development. Complementing FAO's Common Vision for Sustainable Food and Agriculture and its five principles, this publication presents 20 practical and interconnected actions with the aim of transforming food and agriculture and driving achievement across the Sustainable Development Goals (SDGs).

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**20 interconnected
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decision-makers**

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 2018

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Executive summary

Food and agriculture stand today at a crossroads. Looking back, major improvements in agricultural productivity have been recorded over recent decades to satisfy the food demand of a growing global population. But progress has often come with social and environmental costs, including water scarcity, soil degradation, ecosystem stress, biodiversity loss, decreasing fish stocks and forest cover, and high levels of greenhouse gas emissions. The productive potential of our natural resources base has been damaged in many places around the globe, compromising the future fertility of the planet.

Today, 815 million people are hungry, and every third person is malnourished, reflecting a food system out of balance. Distress migration is at levels unprecedented for more than 70 years as the social cohesion and cultural traditions of rural populations are threatened by a

combination of limited access to land and resources and rising numbers of crises, conflicts and disasters, many as a consequence of climate change.

Looking ahead, the path to inclusive prosperity is clearly marked by the 2030 Agenda for Sustainable Development. Overcoming the complex challenges that the world faces requires transformative action, embracing the principles of sustainability and tackling the root causes of poverty and hunger to leave no one behind.

As the prime connection between people and the planet, food and agriculture can help achieve multiple Sustainable Development Goals (SDGs).

Properly nourished, children can learn, people can lead healthy and productive lives and societies can prosper. By nurturing our land and adopting sustainable agriculture, present and future generations will be able to feed a growing population. Agriculture, covering crops, livestock,

aquaculture, fisheries and forests, is the world's biggest employer, largest economic sector for many countries, while providing the main source of food and income for the extreme poor. **Sustainable food and agriculture have great potential to revitalize the rural landscape, deliver inclusive growth to countries and drive positive change right across the 2030 Agenda.**

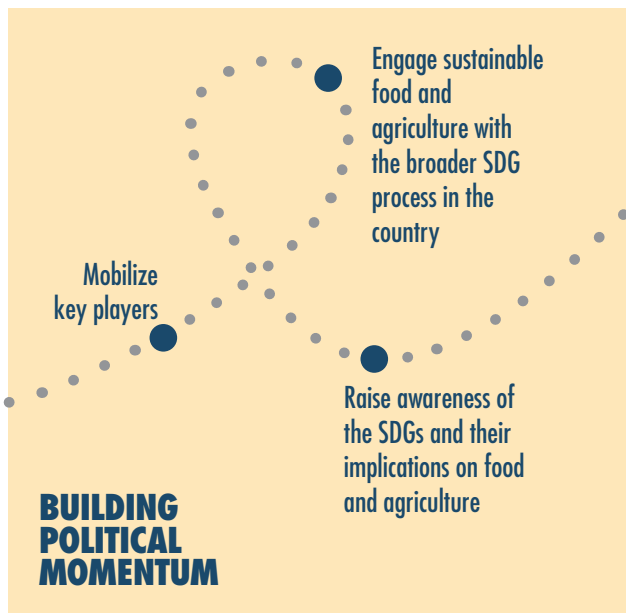
Written with national policymakers and development actors primarily in mind, this guide presents a set of actions to speed up the transformation to sustainable food and agriculture


that are based on evidence, experience, technical expertise and collective knowledge within FAO.

These actions embrace the 2030 Agenda's vision of sustainable development in which food and agriculture, people's livelihoods and the management of natural resources are addressed not separately but as one; a future where the focus is not solely on the end goal but also on the means used to achieve it; and a setting where public and private actors participate in legitimizing, engage in shaping and work towards achieving development solutions.

Mainstreaming sustainable food and agriculture

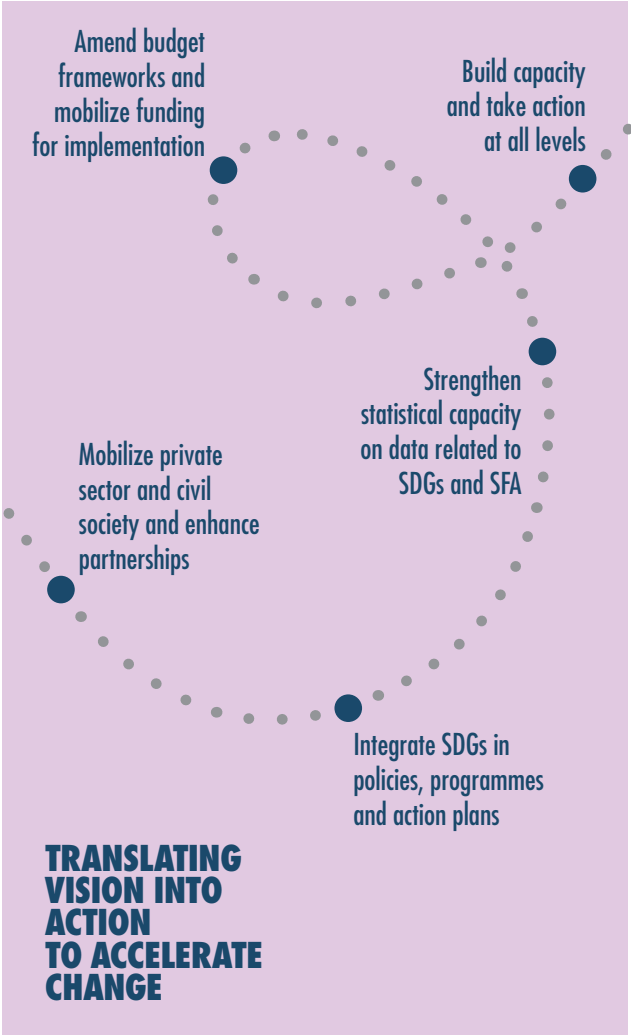
Mainstreaming sustainable food and agriculture into national development strategies and action plans requires setting up a process and a functioning institutional structure. While not intended as a standard, the course below offers decision-makers one possible route towards SDG implementation. It complements the process outlined in the UNDG Reference Guide on Mainstreaming the 2030 Agenda for Sustainable Development, which offers a common platform for SDG work at country level.





Develop an action plan towards sustainable food and agriculture

Develop a joint vision on sustainable food and agriculture



Amend budget frameworks and mobilize funding for implementation

Build capacity and take action at all levels

Mobilize private sector and civil society and enhance partnerships

Strengthen statistical capacity on data related to SDGs and SFA

Integrate SDGs in policies, programmes and action plans

**TRANSLATING
VISION INTO
ACTION
TO ACCELERATE
CHANGE**

A vision for sustainable food and agriculture

A world where food is nutritious and accessible for everyone, in which natural resources are managed in a way that maintains ecosystem functions to support current and future human needs. In this vision, farmers, pastoralists, fisher-folk, foresters and other rural dwellers actively participate in, and benefit from, economic development, have decent employment conditions and work in a fair price environment. Women, men and communities live in food security, and have control over their livelihoods and equitable access to resources which they use in an efficient way.

Informing FAO's work to promote sustainability in production systems, this common vision has been translated into an approach that can support and accelerate the transition to more sustainable food and agriculture systems.

The approach is based on five principles that balance the social,

economic and environmental dimensions of sustainability, and provides a basis for developing adapted policies, strategies, regulations and incentives.

FIVE KEY PRINCIPLES

- 1** Increase productivity, employment and value addition in food systems 
- 2** Protect and enhance natural resources 
- 3** Improve livelihoods and foster inclusive economic growth 
- 4** Enhance the resilience of people, communities and ecosystems 
- 5** Adapt governance to new challenges 

5 principles, 20 actions

Aligned to FAO's five principles of sustainable food and agriculture, this guide outlines 20 actions, each describing approaches, practices, policies and tools that interlink multiple SDGs, integrate the three dimensions of sustainable development – economic growth, social inclusion and environmental protection – and involve participation and partnerships among different actors. Context-specific but universally relevant, the actions are designed to support countries in selecting and prioritizing resources to accelerate progress. They identify sectoral synergies that can catalyse achievement of national objectives and deliver results across multiple goals and targets of the 2030 Agenda. **The 20 actions offer countries a thread that knits the many sectors of agriculture and rural development with a country's broader development programme encompassing poverty eradication, job creation, national**

growth, urban regeneration and natural resource wealth.

Feeding the 10 billion people projected to live on planet earth in 2050 must aim to go beyond producing more with less to balancing the focus on quality and diversity, linking productivity to sustainability and addressing the needs of people.

A fundamental premise for delivering sustainable food and agriculture is the creation of an enabling policy environment and the need for sectoral ministries to change the way they work and coordinate policies across government. The transition to more sustainable agriculture and food systems requires action that builds political alliances and coalitions with actors beyond food and agriculture.

Consistent with the 2030 Agenda's call for transformation, many of the approaches presented in this guide cut across sectors and depend on government collaboration and stakeholder dialogue. They require

policyholders to recognize the need to manage trade-offs, and set out concrete measures for better aligning multiple objectives and incentive structures. They encourage both legal frameworks that recognize and secure rights of access for smallholders and local communities, and favourable policies to incentivize private sector engagement in sustainable market activities. Multistakeholder mechanisms and new forms of participatory governance structures will bolster policy ownership while helping to mobilize capacities, information, technologies and access to financial and production resources.

Unlocking the potential of the private sector is fundamental to progress. Engaging with entrepreneurs and tapping into the know-how of the private sector, including agricultural producer organizations, cooperatives, small and medium-sized enterprises as well as international corporations, is a pre-requisite for implementation of the 2030 Agenda. More than just a source of financing,

private sector partnerships promise technology development, knowledge transfer and innovation, job creation and alternative revenue streams.

Establishing SDG national implementation platforms to develop more integrated programmes and policies, better interlink different goals and targets, monitor progress and identify and address barriers to change will be crucial to enable real transformation, signaling the way forward for sustainable food and agriculture to help countries realise their development objectives.

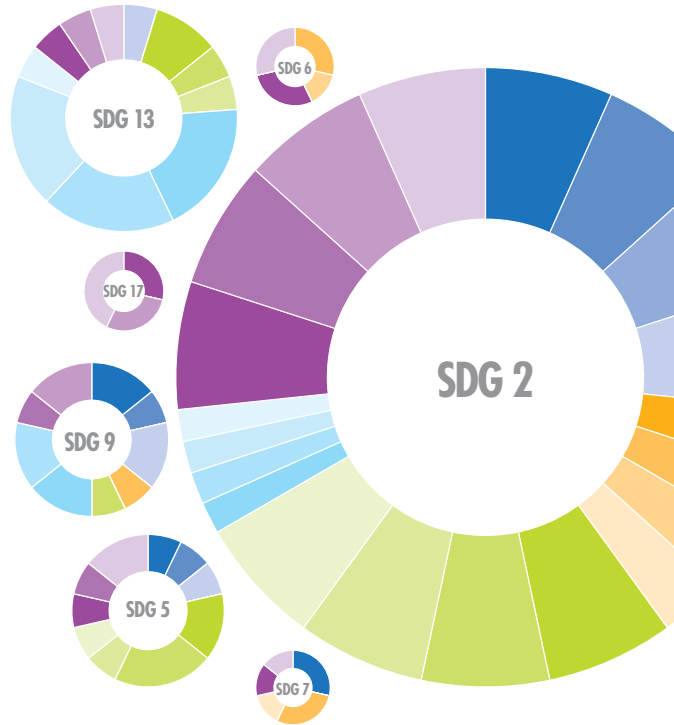


Directing attention to strengthening the livelihoods of the poorest, building better rural-urban linkages and empowering rural people to become critical agents of change can lay the foundation to 'leaving no one behind'. This guide focuses on the three billion people who live and work in the countryside, who produce the great majority of the food the world consumes and are most vulnerable to drought, floods, earthquakes, conflict, disease epidemics and market shocks. Investments in smallholder farmers, fisher-folk and foresters, rural women and youth, pastoralists, indigenous people and vulnerable populations have the potential to produce lasting effects on the economies of developing nations, transforming food producers into entrepreneurs and stewards of the environment.

Mapping actions to SDGs

SDGs

- SDG 1: No Poverty
- SDG 2: Zero Hunger
- SDG 3: Good Health and Well-Being for people
- SDG 4: Quality Education
- SDG 5: Gender Equality
- SDG 6: Clean Water and Sanitation
- SDG 7: Affordable and Clean Energy
- SDG 8: Decent Work and Economic Growth
- SDG 9: Industry, Innovation and Infrastructure
- SDG 10: Reduced Inequalities
- SDG 11: Sustainable Cities and Communities
- SDG 12: Responsible Consumption and Production
- SDG 13: Climate Action
- SDG 14: Life Below Water
- SDG 15: Life on Land
- SDG 16: Peace, Justice and Strong Institutions
- SDG 17: Partnerships for the Goals



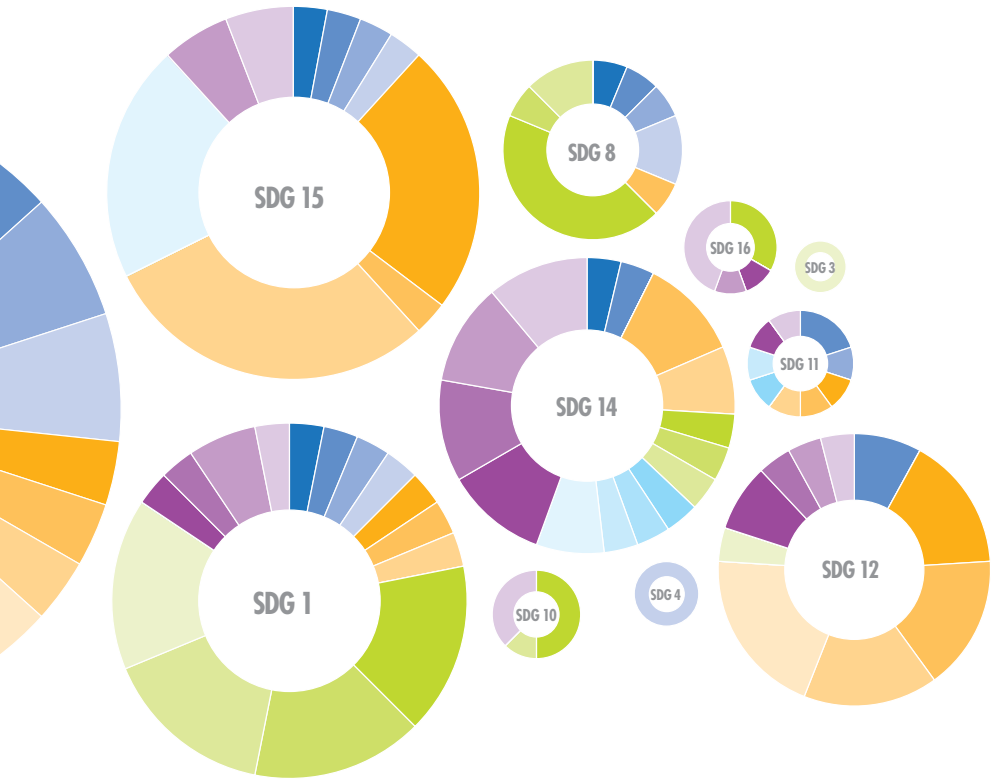
ACTIONS

- | | |
|---|--|
| <ul style="list-style-type: none"> 1 Facilitate access to productive resources, finance and services 2 Connect smallholders to markets 3 Encourage diversification of production and income 4 Build producers' knowledge and develop their capacities | <ul style="list-style-type: none"> 5 Enhance soil health and restore land 6 Protect water and manage scarcity 7 Mainstream biodiversity conservation and protect ecosystem functions 8 Reduce losses, encourage reuse and recycle, and promote sustainable consumption |
|---|--|

Principle 1

Principle 2

The 20 interconnected actions impact the 17 SDGs to varying degrees



- 9** Empower people and fight inequalities
- 10** Promote secure tenure rights for men and women
- 11** Use social protection tools to enhance productivity and income
- 12** Improve nutrition and promote balanced diets

Principle 3

- 13** Prevent and protect against shocks; enhance resilience
- 14** Prepare for and respond to shocks
- 15** Address and adapt to climate change
- 16** Strengthen ecosystem resilience

Principle 4

- 17** Enhance policy dialogue and coordination
- 18** Strengthen innovation systems
- 19** Adapt and improve investment and finance
- 20** Strengthen the enabling environment and reform the institutional framework

Principle 5

20 Actions

Integrated and interconnected, the 20 actions knit together the many dimensions of agriculture and rural development with a country's broader development programme, laying the foundation for resilient and sustainable societies.

1. Facilitate access to productive resources, finance and services
2. Connect smallholders to markets
3. Encourage diversification of production and income
4. Build producers' knowledge and develop their capacities
5. Enhance soil health and restore land
6. Protect water and manage scarcity
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18. Strengthen innovation systems
19. Adapt and improve investment and finance
20. Strengthen the enabling environment and reform the institutional framework

1 Facilitate access to productive resources, finance and services

CONTRIBUTES TO SDGs:

1 2 5 7 8 9 14 15



REPRESENTING SOME 500 MILLION, OR 88 PERCENT, OF THE 570 MILLION FARMS GLOBALLY, FAMILY FARMING GENERATES ABOUT 80 PERCENT OF THE EARTH'S FOOD

Improving productivity is key to transforming the livelihoods of hundreds of millions of people across the globe. Yet many smallholder family farmers continue to lack access to resources and services. Without extensive rural infrastructure, the world's chief food producers are hindered from fully participating in the local economy, debilitated in pursuing entrepreneurial activity and limited in hopes of raising their income. Stuck in a vicious cycle of poverty, they are vulnerable to climatic shocks and often pushed into short-term practices that compromise natural resources.

Creating the conditions for inclusive rural transformation requires investing in basic infrastructure: roads, markets, land and water transportation, telecommunications and storage capacity. It means providing greater access to land, resources, services, finance, technologies and modern tools to generate energy.

- Enhancing productivity can be achieved by providing small-scale farmers with access to affordable, quality seeds and planting materials of suitable crop varieties.
- Bringing rural youth back into agriculture can be promoted by investing in mechanization and advanced technologies in rural

locations. This has the potential to increase market-oriented and profitable farming. Greater income and opportunities in rural areas addresses the issue of youth migration.

- Reducing a community's reliance on distant markets, intermediaries and food price fluctuations can be met by decentralising access to resources, finance and technology. Local food systems will be strengthened while higher value and certified products can be sent to larger markets.
- Directing resources to rural areas promises benefits that go beyond the countryside, rewarding the lives of a whole population and the growth of a nation. As the rural landscape transforms, both on-farm and off-farm economic activity can thrive, with schools, health centres and social services springing up to sustain new communities.

TOOLKIT

Save and grow

A guide to the sustainable intensification of smallholder crop production

www.fao.org/ag/save-and-grow

Sustainable agricultural mechanization platform

www.fao.org/sustainable-agricultural-mechanization

Voluntary guide for national seed policy formulation

www.fao.org/3/a-i4916e.pdf

2 Connect smallholders to markets

CONTRIBUTES TO SDGs:



GLOBALLY MORE THAN 80 PERCENT OF SMALLHOLDERS OPERATE IN LOCAL AND DOMESTIC FOOD MARKETS

A fundamental part of any strategy towards more productive and sustainable agriculture and rural development is access for agricultural and food producers to markets with higher efficiency, transparency and competitiveness. As the rural economy expands and rural-urban networks develop, this will include access to markets for non-agricultural goods as well as non-farm wage work. More connected markets offer enormous opportunities to generate greater income, but there are also risks associated with longer food value chains in which external factors play a bigger role and smallholder farmers have less control over input and output prices. While international commodity markets bring greater demand, they generally offer lower margins for smallholders and are more likely to be affected by speculation and accessed through contracts.

- A macro-economic framework, including better infrastructure, public goods, regulations and policy and legal environments, will allow smallholder family farmers greater market access.
- Producer organisations can help smallholders access an array of services, including improved market information and food safety guidelines, as well as focusing on value-added production and marketing.

- Building the entrepreneurial and business skills and capacities of smallholders will be fundamental to their full market participation, and to take advantage of new opportunities.
- Public procurement can support farmers and food producers access markets while ensuring marginalized consumers enjoy affordable and nutritious food in periods of market failure. Food assistance and school feeding are just two examples where smallholders are linked to demand for food and agricultural products.
- Understanding the effect of trade restrictions and distortions in agricultural markets, including the elimination of the sector's export subsidies, will be key to forming healthy, sustainable and well-functioning national and international agricultural markets, and taking advantage of the opportunities that trade offers.
- Promoting a more enabling market environment for smallholders can help to provide fair and transparent prices that adequately remunerate smallholders' work and investments.
- Addressing decent employment and child labour in agriculture and rural areas will be rewarding not only in achieving social development goals but also in helping to certify agricultural products for export.
- Accessing technology accelerates change. Data management devices, like mobile phones and apps, are able to relay price information quickly, transparently and accurately, and to aid negotiation by bringing producers and traders together.

TOOLKIT

Developing sustainable food value chains

Guiding principles

www.fao.org/3/a-i3953e.pdf

FAO sustainable food value chain knowledge platform

www.fao.org/sustainable-food-value-chains/what-is-it

Entrepreneurship Development Training Manual

www.fao.org/sustainable-food-value-chains/training-and-learning-center/details-materials/en/c/277441/

Innovative risk management strategies in rural and agriculture finance

www.fao.org/3/a-i6940e.pdf

Technical guidelines on aquaculture certification

www.fao.org/3/a-i2296t.pdf

Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries (Revision 1); and from Inland Capture Fisheries

www.fao.org/docrep/012/i1119t/i1119t00.htm

www.fao.org/docrep/014/ba0001t/ba0001t00.pdf

THE “QUIET REVOLUTION” OF THE FISH VALUE CHAIN IN BANGLADESH



The fish value chain in Bangladesh is evolving very rapidly in all its sectors. This “quiet revolution” affects the farm and input-supply segment – which represents 60 percent of the sector’s total value added – in addition to the remaining 40 percent, which is composed mainly of rural and urban wholesale, retail and logistics segments. In the past decade, the aquaculture sector’s volumes and participants have tripled thanks to capital investments by hundreds of thousands of smallholder farmers and small and medium-sized businesses along its value chain.

This process included the diversification, and specialisation beyond carp fish, in farming more commercial species, such as the tilapia and pangasius catfish, which have boosted yields. One major positive effect has been a gradual reduction in the price of farmed fish, which is an important contribution to food security. The sector’s growth has mainly been oriented toward the domestic market, as very little of Bangladesh’s farmed fish is exported. However while the investments of millions of farmers and enterprises were a major driver of this growth, public policy had a facilitating role, particularly through early investments in fish seed production, electricity supply and rural roads.

3 Encourage diversification of production and income

CONTRIBUTES TO SDGs:

1 2 8 11 15



JUST FIVE ANIMAL SPECIES PROVIDE 31 PERCENT OF AVERAGE DAILY PROTEIN CONSUMED

Cultivating multiple crops brings significant benefits to society that go far beyond the farm gate. Not only does diversifying agricultural production conserve biodiversity, improve soil and plant health and reduce exposure to pests, diseases or extreme-weather events, it also brings greater rewards to farmers and the local community through improved nutrition, job creation and income generation. When integrated production systems are in place, farmers can still maintain their families from other sources of income in the event revenue is lost in another activity.

Integrated crop-livestock systems, agroforestry and combining paddy rice with aquaculture are just some of the practices employed today that have been shown to increase productivity, producing more with less to help satisfy the demand of a rising and increasingly urbanised global population. Combining farm and off-farm activities helps ensure that rural households earn an income during the lean season or in the face of extreme climate events.

- Diversifying production helps stabilise household revenue, build resilience to climate change and natural disasters, and reduce vulnerability to shocks like a sudden increase in food prices that can be disastrous to poor people given their limited access to credit and savings.

- Increasing the diversity of productive activities during different periods of the year helps avoid employment intervals which are often also combined with food security and nutrition gaps.
- Building the institutional framework and strengthening links between the informal sector of the agricultural and food systems with the rest of the economic system can help integrate informal actors and firms, and raise productivity and wages.
- Farming systems that integrate different crops, livestock and fish help supply the nourishment needs of rural households, contributing to food security and dietary diversity, especially when promoting indigenous crop varieties and animal breeds that are often highly nutritious.
- Diversification contributes to soil health and biodiversity conservation, essential to a nation's future food production as the natural resource base and ecosystem services are the foundation of all food and agricultural systems.

TOOLKIT

Neglected and underutilized species community (managed by Bioversity International)

www.nuscommunity.org/about-us/neglected-underutilized-species

LEAP- Livestock Environmental Assessment and Performance partnership programme

www.fao.org/partnerships/leap

FAO Diversification Booklet Series

www.fao.org/sustainable-food-value-chains/training-and-learning-center/details/en/c/274790

Sustaining livestock diversity E-module

www.fao.org/ag/againfo/programmes/en/genetics/Guidelines.html

INCLUSIVE FINANCE FOR PRODUCER ORGANISATIONS IN NIGER

FAO has been working with the government of Niger and other partners since 2009 to promote the development of financial instruments targeting producers' organisations (POs). The programme developed and strengthened a network of 783 cooperatives, input shops directly managed by the POs. Through this vast network, well-priced and good quality inputs are reaching over half of the agricultural villages of Niger. As a result, the yields of sorghum and millet have increased by 100 and 81 percent respectively.



A credit guarantee fund was established in 2013 with eight producer federations representing 176 000 smallholder farmers. To maximise the fund's potential, FAO has ramped up a capacity development programme to increase producers' access to agricultural credit. Three of the federations have accessed commercial credit to fund economic activities such as producing and marketing potatoes, and five POs have implemented investment plans with their own resources.

The project helps smallholder farmers, through POs, to enter into a negotiating dialogue with the banks, increasing their bargaining power and access to credit. This has stimulated a mutual-learning process, improving the capacity of lenders to design and deliver loans to smallholder farmers. It also reduces the risk of losses in the case of failure.

4 Build producers' knowledge and develop their capacities

CONTRIBUTES
TO SDGs:

1 2 4 5 8 9 13 15



**THE FARMER FIELD
SCHOOL APPROACH
HAS BEEN USED
IN CLOSE TO
100 COUNTRIES**

Sharing knowledge, building capacities and investing in innovative technology are all part of the transformation to sustainable food and agriculture systems. But recent years have witnessed a significant shift in the way of extending knowledge. Top-down and technology-oriented systems are progressively being replaced by integrated, market-oriented and farmer-driven methods, often involving multistakeholder participatory processes. Smallholder family farmers, rural women and men, and their organizations are increasingly regarded as full partners in situation-analysis and problem-identification, and in redefining research and advisory services. The trend sees increasingly pluralistic extension systems where public sector, private agents, civil society organizations and non-governmental organizations all deliver knowledge to farmers based on their areas of expertise.

Participation in modern value chains that trade crops within or across country borders requires business-oriented approaches that include a set of skills in managing the farm both at the production as well as the marketing stages.

While supporting the formation of producer organisations to provide services and give a voice to farmers' concerns, countries need to

play a greater role as coordinator and regulator to ensure that services offered by the increasing number of actors in the field of knowledge are:

- Feasible, technically sound and balanced sustainably with issues of resilience, access to markets and social inclusiveness in mind.
- Targeted, demand-driven, engage women and youth, and address the specific needs of different categories of producers, while ensuring reach to those most left behind.

To generate better jobs and more decent work opportunities, knowledge-sharing and innovation in rural areas should focus on developing capacities, supported by:

- Bringing farmers' knowledge together through farmer field schools that promote agro-ecosystem agriculture techniques, strengthening the understanding and awareness on the prospects for rural employment in the context of greener food systems.
- Going beyond agriculture to provide youth with training and education on sustainable socio-economic entrepreneurship, including human skills and linking agriculture to industry and services.

TOOLKIT

Global Farmer Field Schools Platform

www.fao.org/farmer-field-schools

FAO Research and Extension Portal

www.fao.org/research-and-extension

A decision guide for rural advisory methods

www.fao.org/3/a-i8141e.pdf

FAO Capacity Development Portal

www.fao.org/capacity-development

FAO capacity development learning courses

www.fao.org/capacity-development/resources/fao-learning-material/learning-courses

SUPPORTING AGROECOLOGY IN PUBLIC POLICY



Approaches such as agroecology can help countries achieve more sustainable food and agriculture in practice. By optimizing biological synergies that integrate crops, trees, livestock and fisheries and aquaculture, farmers using agroecological practices enhance ecological functions, leading to greater resource-use efficiency and resilience. By managing ecosystem services that are frequently mobilized at the landscape scale, agroecology enhances territorial development. Over 30 countries have already developed public

policies that support agroecology, promoting integrated sectoral approaches at the national level. These policies help scaling up the adoption of agroecological practices and have already done so in a number of countries. Policies for agroecology often include mechanisms for inter-ministerial cooperation in support of an integrated approach, innovative governance arrangements that involve family farmers and other food system actors in policy deliberations, and territorial approaches in support of context-specific and integrated solutions. Agroecological approaches help producer organisations in developing cross-sectoral collaboration and enhance linkages with consumer organisations. Researchers in agroecology are at the forefront of developing the trans-disciplinary knowledge necessary to respond to the call for integrated approaches posed by the SDGs.

5 Enhance soil health and restore land

CONTRIBUTES TO SDGs:

1 2 11 12 15



AROUND ONE-THIRD OF THE WORLD'S SOILS ARE DEGRADED, MOSTLY DUE TO UNSUSTAINABLE SOIL MANAGEMENT PRACTICES

Healthy soil produces healthy food and better nutrition. Hosting a quarter of the planet's biological diversity, soil provides nutrient cycling for plant and animal life, acting as a basis for feed, fuel, fibre and medical products, as well as many other ecosystem services. Critical to supplying clean water, preventing desertification and providing resilience to floods and drought, soil makes up the greatest pool of terrestrial organic carbon, mitigating climate change through the reduction of greenhouse gas emissions.

Today, however, unsustainable land use practices and human pressures on resources are reaching critical limits. Poor farming methods are depleting soil nutrients faster than they are able to form. Extensive tilling, removal of organic matter, excessive irrigation using poor quality water and overuse of synthetic fertilizers and pesticides are leading to loss of soil fertility, pollution and degradation.

Sustainably managing soil is cheaper than rehabilitating or restoring soil functions.

- Integrated approaches, such as watershed management and sustainable land management, apply the principles of sustainable soil management and put them into a broader landscape context, addressing issues that go beyond the farm.

- A major part of sustainable soil management will be engaging landowners, land users and local communities in decision-making. Management plans and decentralised governance mechanisms can empower local actors to have a say over their resources and territories. Sustainability at local levels is much more likely when projects adhere to sustainable land management by-laws and other local regulations.
- While deforestation and land use change, largely brought about by rising food needs, is a major cause of soil depletion around the world, FAO's State of the World's Forests (2016) demonstrates that increasing agricultural production does not necessarily have to come at the expense of forests.
- The Voluntary Guidelines for Sustainable Soil Management, endorsed by FAO in 2016, provide a set of technical and policy recommendations that are based on science, practically proven and broadly accepted among multiple stakeholders.

TOOLKIT

Global Soil Partnership

www.fao.org/global-soil-partnership

Voluntary Guidelines for Sustainable Soil Management

www.fao.org/3/a-bl813e.pdf

WOCAT (World Overview of Conservation Approaches and Technologies)

www.wocat.net

COLLECT EARTH

Augmented visual interpretation for land monitoring

www.openforis.org/tools/collect-earth.html

Global guidelines for the restoration of degraded forests and landscapes in drylands

www.fao.org/3/a-i5036e.pdf

6 Protect water and manage scarcity

CONTRIBUTES TO SDGs:



AGRICULTURE ACCOUNTS FOR 70 PERCENT OF ALL WATER WITHDRAWALS AND UP TO 95 PERCENT IN SOME DEVELOPING COUNTRIES

Healthy agriculture and nutritious food depend on clean and fresh water. As the lifeline of ecosystems, water is essential to all aspects of social, economic and environmental development. It is crucial for poverty eradication, food security and resilience to natural and human-induced disasters, while playing a key role in climate change adaptation.

The agriculture sector has great thirst. Crops and livestock already account for 70 percent of all water withdrawals globally, and up to 95 percent in some developing countries. Water withdrawal for irrigation and livestock is likely to increase as global population growth and economic development drive up food demand.

Today, water is frequently ill-managed and ever scarcer. If current consumption patterns continue, two-thirds of the world population could be living in water-stressed countries by 2025. In many places, water, not land, is the limiting factor to production.

Building a water-secure world identifies with safe drinking water, sanitation and hygiene, the sustainable management and development of water resources and the protection of aquatic biological resources, wastewater management and water quality.

- Establishing transparent and effective governance mechanisms is essential to allocate water among competing sectors such as agriculture, industry and urban. Cross-sectoral water cooperation at all levels through an inclusive process engaging all stakeholders should be part of a country's sustainable water management programme.
- Policies, legislation and fiscal measures can have a profound effect on how water is managed, including energy prices or subsidies, trade agreements and environmental conservation of ecosystems. Forests, in particular, are vital to the regulation and supply of freshwater, while estuarine ecosystems, which serve as habitat for marine species and breeding space for fish species, are impacted when less or lower quality water reaches the oceans.
- Targeted investments in water for agriculture can have a significant impact on water sustainability. Smallholder farmers, who typically seek investments in small-scale irrigation, need reliable access to land, guaranteed access to water and improved access to inputs and markets. Fishers need secure water rights and a guaranteed supply of water.
- Improving water efficiency in agriculture will require capacity development at all levels. Improved knowledge, research, innovation and implementation towards more sustainable use of water will be needed to meet the world's future fuel and food needs.

TOOLKIT

Coping with water scarcity, an action framework for agriculture and food security

www.fao.org/docrep/016/i3015e/i3015e.pdf

Water accounting and auditing

A sourcebook

www.fao.org/3/a-i5923e.pdf

Water and the rural poor - Interventions for improving livelihoods (sub-Saharan Africa and Asia)

www.fao.org/3/a-i0132e.pdf

www.fao.org/3/a-i3705e.pdf

On-farm practices for the safe use of wastewater in urban and peri-urban horticulture

www.fao.org/docrep/016/i3041e/i3041e.pdf

www.fao.org/docrep/016/i3041e/i3041e.pdf

IPPM Integrated pest management

(training, outreach)

www.fao.org/agriculture/ippm/activities/pesticide-risk-reduction

Technical Guidelines for the implementation of the International Code of Conduct on Pesticide management

www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/code/list-guide-new

7 Mainstream biodiversity conservation and protect ecosystem functions

CONTRIBUTES
TO SDGs:

1 2 6 11 12 14 15



**SOME 600
AQUATIC SPECIES
ARE FARMED IN
AQUACULTURE**

Biodiversity is integral to ecosystem health, important to increase food production and necessary to sustain livelihoods.

Conserving and using a wide range of domestic plant and animal diversity provides adaptability and resilience in the face of climate change, emerging diseases, pressures on feed and water supplies and shifting market demands.

Tapping into ecosystem services reduces the need for external inputs and improves efficiency.

Today, however, the world's rich agrobiodiversity heritage is threatened. Drivers such as land-use change and land degradation, pollution, invasive alien species, degrading habitats, climate change and ocean acidification are reducing the number of species, impoverishing their genetic diversity and stressing ecosystems, often beyond their capacity. At the same time, food production systems are losing their diversity. Just 30 crops now provide 95 percent of human food-energy needs and just five of them – rice, wheat, maize, millet and sorghum – provide about 60 percent. Five animal species – cattle, sheep, goats, pigs and chicken – deliver about a third of average daily protein consumed. Using such a small number of species increases the vulnerability of agriculture systems and puts food security and nutrition at risk.

Mainstreaming biodiversity in agriculture requires implementing a series of initiatives established in the UN Decade (2011–2020) on Biodiversity and the Aichi targets, and global action plans adopted by the Commission on Genetic Resources for Food and Agriculture:

- Greater investment to ensure that conservation of biodiversity and the genetic resources for food and agriculture are mainstreamed across all sectors contributing to sustainable development, food security and nutrition.
- Build national institutions and create legislation to manage these genetic resources.
- Monitor the biodiversity of plants and animals to identify plant varieties and livestock breeds at risk of extinction. Inventories of gene bank holdings and breed censuses provide a dynamic measure of the existing plant and animal diversity and its level of preservation.
- Regulate access and impose benefit-sharing obligations for the utilisation of genetic resources. This is supported by the International Treaty on Plant Genetic Resources for Food and Agriculture and its declaration that the 64 most important crops will comprise a pool of genetic resources that are accessible to everyone.
- Reverse the degradation of natural habitats, in particular in mountain, forests, freshwater and coastal environments, by creating conservation areas. Explore incentives for ecosystem services applied to biodiversity conservation.

TOOLKIT

Guidelines for Developing a National Strategy for Plant Genetic Resources for Food and Agriculture

www.fao.org/3/a-i4917e.pdf

Voluntary Guidelines for the Conservation and Sustainable Use of Crop Wild Relatives and Wild Food Plants

www.fao.org/documents/card/en/c/8f366de9-08a8-42ad-ae1-4f8f6822420e/

Guidelines on animal genetic resources

www.fao.org/ag/againfo/programmes/en/genetics/Guidelines.html

Principles for the assessment of livestock impacts on biodiversity (LEAP partnership)

www.fao.org/3/a-i6492e.pdf

Sustaining livestock diversity E-learning tools

www.fao.org/ag/againfo/programmes/en/genetics/Guidelines.html

Fishery Resources Monitoring System (FIRMS)

firms.fao.org

Mainstreaming ecosystem services and biodiversity into agricultural production and management in East Africa & in the Pacific Islands

www.fao.org/3/a-i5603e.pdf
www.fao.org/3/a-i6505e.pdf

PRODUCTIVE LANDSCAPES THROUGH LEASEHOLD FORESTRY IN NEPAL



A landlocked country in the Himalayas, Nepal is one of the poorest and least-developed countries in the world. Despite their degradation and dwindling resource base, forests remain the basis of rural livelihoods. They provide fodder for livestock, stabilise the soil, furnish suitable

agricultural land under their cover and yield useful non-timber forest products. Community-based leasehold forestry is Nepal's pioneering approach to reverse deforestation and land degradation. The approach began in the country about 20 years ago and has two main objectives: regenerating forests on degraded lands; and alleviating rural poverty. Under the system, the Government of Nepal leases state-owned degraded forestlands to small groups of poor households. It requires the households to protect their forestlands against further degradation and allows them to cultivate economically beneficial plants, while simultaneously allowing the forests to recover through natural regeneration and selective planting of mostly native trees.

Leasehold forestry has been highly successful in rehabilitating degraded landscapes while improving the socio-economic status and well-being of poor rural communities in Nepal. Key factors that contributed to their success include: generation of short-term income to improve livelihoods combined with long-term economic and environmental benefits through restoration of forestland; a focus on the needs of the poorest communities; provision of secure, long-term tenure with clear rights and responsibilities; a participatory approach in shaping project activities and determining the future of the landscape; investing of income generating from the sale of forest products to fund village development activities; ensuring strong interministerial and cross-sectoral collaboration; strengthening the decision-making role of women; and applying of landscape approach linking productive aspects of forestry, livestock and agriculture, considering the needs and aspirations of present and future generations of local communities.

8 Reduce losses, encourage reuse and recycle, and promote sustainable consumption

CONTRIBUTES TO SDGs:

2 7 12



COMPARED WITH COUNTRY EMISSIONS, FOOD WASTAGE WOULD RANK AS THE THIRD TOP EMITTER

Every year the world loses, or wastes, about a third of the food it produces. The global economic cost of food wastage is USD750 billion, approximately the GDP of Switzerland (2011). But the impact is far greater. Food losses and waste affect both consumers and producers by raising the price of food and decreasing the amount that can be sold. They constitute a threat to food security, a waste of resources, ever-greater stress on ecosystems and a danger to the environment in the form of greenhouse gas-producing emissions.

All actors in the food chain, from farm to fork, can play a role in reducing losses, reusing, recycling and promoting more sustainable consumption patterns.

- A key part of a strategy is to perform a situation assessment, beginning with quantifying the main causes of food losses, and then analysing the impact of solutions on technical and economic feasibility, food quality and safety requirements, social acceptability and environmental sustainability.
- Incentives for resilient and sustainable consumption and production must be included in food systems and value chains so consumers and producers are aware of environmental and social impacts when making decisions.

- Policy decisions can have a major role to play in combatting food loss and waste. These range from interventions to reduce overproduction to nutrition education among the general public in promoting a shift to nutritious and safe diets with a lower environmental footprint and energy use.
- Sharing knowledge and technologies to improve post-harvest activities in developing countries is an important way to increase farmers' incomes and improve the efficiency of food systems.
- Greater commitments to a circular economy in food and agriculture, as an alternative to a traditional linear economy of producing, using and disposing, will optimise the added value of natural resources, ensuring products and materials are recovered and regenerated from production lines and across subsectors. The reuse and recycling of residues through composting can provide nutrients for soils, and food for fish and livestock.
- Identifying and promoting domestic renewable energy resources will contribute to reducing the energy footprint of food production and consumption. Energy-smart food systems can help countries to address the two-fold energy challenge of expanding access to energy and promoting the transition to sustainable, low-carbon energy systems.

TOOLKIT

Community of practice on food loss reduction

www.fao.org/food-loss-reduction

FAO bioenergy website

www.fao.org/energy/bioenergy

FAO technical platform on the measurement and the reduction of food loss and waste

www.fao.org/platform-food-loss-waste

Global Save Food Initiative

www.fao.org/save-food/background

Bioenergy and Food Security (BEFS) Approach

www.fao.org/docrep/019/i3672e/i3672e.pdf

Assessing the sustainability and replicability of integrated food energy systems

A guidance document

www.fao.org/docrep/019/i3669e/i3669e.pdf

Small-scale aquaponics food production

Integrating fish and plant farming

www.fao.org/3/a-i4021e.pdf

9 Empower people and fight inequalities

CONTRIBUTES TO SDGs:

1 2 5 8 10 13 14 16



INDIGENOUS PEOPLES CONSTITUTE ABOUT 5 PERCENT OF THE WORLD'S POPULATION YET ACCOUNT FOR ABOUT 15 PERCENT OF THE WORLD'S POOR

Rural populations are among the most marginalized people in society. Their limited access to knowledge, information and resources, and restricted organizational capacity and bargaining power often leave them ill-prepared, and unable to benefit from opportunities arising from rural transformation. As the world's food producers and natural resource managers, attributing a fair value to their work as part of a sustainable food system is central to addressing inequality and attaining multiple objectives of the 2030 Agenda.

Removing structural constraints and providing smallholder and family farmers with the tools and capacities to build resilient livelihoods is key.

- Policies and investments aimed at boosting the access to land, resources, decision-making and community participation of smallholders and family farmers, especially women, can create the conditions for inclusive national growth.
- Supporting smallholder's participation in producer organizations, cooperatives and networks can help them gain greater participation in community decisions, better access to resources and knowledge, to setting up small enterprises and working their way out of poverty.

- Specific interventions should target women and youth living in rural locations, and vulnerable groups, including indigenous people, migrants and refugees who are often disadvantaged in access to information, opportunities and resources. Addressing gender, group and generational discrimination in legal frameworks is likely to have a major impact on reducing inequalities.
- Investing in youth is the best way to guarantee sustained national growth. Creating the right environment, including by developing skills and offering incentives, can help build the capacities, innovation and entrepreneurial potential of a country's leaders and producers of the future.
- Social protection schemes, such as school feeding, cash transfer and health care, help provide income security and decent employment to people living in challenging and often hazardous environments.

TOOLKIT

Right to Food

www.fao.org/docs/eims/upload/214344/rfng_eng_draft_03.pdf

FAO online Toolbox on decent rural employment

www.fao.org/rural-employment/toolbox

FAO's work on youth employment

www.fao.org/rural-employment/work-areas/youth-employment

Guidance on addressing child labour in fisheries and aquaculture

www.fao.org/docrep/018/i3318e/i3318e.pdf

CEDAW Guidelines

A tool for gender-sensitive agriculture and rural development policy and programme formulation

www.fao.org/docrep/017/i3153e/i3153e.pdf

Gender, rural women and development (Dimitra)

www.fao.org/dimitra/home

Realizing women's rights to land in the law

A guide to report on SDG 5.a.2.

www.fao.org/3/i8785EN/i8785en.pdf

10 Promote secure tenure rights

CONTRIBUTES TO SDGs:



WOMEN COMPRISE ONLY 10 TO 20 PERCENT OF ALL LANDHOLDERS BUT MAKE UP HALF THE WORKFORCE IN AGRICULTURE

Promoting secure tenure rights and access to land is one of the most effective ways to reduce a farmer’s vulnerability, support better and long-term investment on their land, conserve natural resources and generally promote more productive and sustainable practices.

Governance for tenure of land, fisheries, forests and other natural resources is necessary to avoid overfishing, deforestation and forest degradation, depletion of aquifers and loss of soil quality. Well-designed tenure systems generate fairer access and help reduce conflicts, a growing cause for concern following the recent growth in large-scale acquisitions of more productive and accessible land.

- Tenure rights are particularly important for pastoralists, indigenous peoples, rural women and youth, those who are most likely to face limited access to natural resources. Women make up only 10 to 20 percent of all landholders, often owning the poorest quality land. Indigenous people’s access to their traditional lands, fisheries, forests, territories is increasingly insecure or under threat.
- For young people, inheritance laws and customs often complicate the transfer of land to young women. Along with a review

of land inheritance laws, young people can be assisted by loans to acquire land, and by leasing arrangements through which youth gain access – but not ownership – to land.

- Evidence shows that secure forest tenure rights promote private investment in tree cultivation in all countries. Access to waterfronts or coastal lands is critical for smallholder fishers. Access to, ownership and control of water and water tenure is needed more and more for those living in arid geographies.
- In addition to recording and monitoring future tenure arrangements, establishing and understanding of existing tenure arrangements – formal and informal, individual or collective – for land, water, coastal areas, pastoral land are important starting points to recognize users and their relationship to resources.
- The first set of agreed principles and internationally accepted standards, the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT) provides a framework for developing strategies, policies, legislation and programmes.

TOOLKIT

FAO Tenure Portal

www.fao.org/tenure

Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests

www.fao.org/docrep/016/i2801e/i2801e.pdf

Responsible governance of tenure

E-learning

www.fao.org/elearning/#/elc/en/courses/VGGT

Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication

www.fao.org/3/i4356en/i4356en.pdf

INVESTING IN SECURE LAND RIGHTS FOR INDIGENOUS PEOPLE IN HONDURAS AND GUATEMALA



The seven million and more indigenous people in Honduras and Guatemala are among the poorest in the region and depend heavily on natural resources, including forests and cultivable land, for their livelihoods. Yet, they frequently lack legal ownership, control over and access to land, which hinders their productive capacity and prevents them from investing in income-generating activities.

FAO is partnering with the World Bank to strengthen the governance and rights of indigenous communities over land and natural resources in

Central America. In Honduras, the partnership has designed an investment plan to enable the delimitation and registration of new inter-communal titles in the Mosquitia region. As a result, the President of Honduras, in 2016, recognized the ownership of more than one million hectares of communal land, including forests, to 12 regional councils of the Misquito indigenous people, and launched a Plan of Action to promote the conservation of natural resources and sustainable management of indigenous territories. Thanks to this recognition, about 17 500 poor indigenous families are now able to better access and manage the natural resources present in their territories.

In Guatemala, several indigenous and rural communities obtained legal recognition of their land as communal as part of a project designed by FAO and the World Bank. Building on this, FAO supported the government in preparing a new investment project to improve the governance of land tenure in the country and developed a complementary initiative to strengthen territorial management of communal lands.

The project is also supporting the implementation of the Voluntary Guidelines on the Responsible Governance of Tenure to build the capacity of key stakeholders, including government officials and indigenous peoples, to strengthen the governance of land tenure and of other natural resources.

11 Use social protection tools to enhance productivity and income

CONTRIBUTES
TO SDGs:

1 2 5 8 10 13 14



CASH TRANSFER PROGRAMMES IN FIVE AFRICAN COUNTRIES HAVE SHOWN A REDUCED INCIDENCE ON POVERTY BETWEEN 18 AND 33 PERCENT IN THE PERIOD 2010-2015

Social protection plays a key role in reducing rural poverty and hunger. Measures such as cash and asset transfers provide liquidity and financial security to all poor people, giving them the means to invest in their future.

By providing a basic income, these measures help to relax insurance and credit constraints, allowing poor people the chance to start their own businesses, engage in profitable activities, and ultimately to break out of the cycle of multigenerational poverty.

Food producers, in particular smallholders and family farmers in developing countries, are highly vulnerable to risks and shocks, including illness, drought, animal disease, conflict and the negative impacts of climate change. As a result, poor rural families are more likely to sell off their assets, shift to less risky but lower yielding crops, and require their children to work.

- Investing in social protection, particularly when combined with targeted pro-poor and agricultural interventions, can have far-reaching effects on poverty reduction, economic growth and building resilient livelihoods.
- Social protection schemes, such as school feeding, cash transfer and health care, help

provide income, food and nutrition security and decent employment to people, particularly women and children, living in challenging and often hazardous environments.

- Cash transfers allow families to increase and diversify their asset base and savings, avoiding distress sale of assets. Providing a minimum income reduces insurance and credit constraints, allowing poor rural people to invest in agricultural production or to start a new enterprise.

Studies of social protection schemes implemented around the world have found commonalities with positive results in:

- Food availability, helping to keep staple food prices low.
- Disaster risk reduction, coping with emergencies and crises, climate change adaptation and mitigation, deforestation and reduction in environmental degradation.
- Human capital, key to labour productivity and employability, and reduction in child labour.
- Investment in small businesses and improved income generating activities.
- Employment opportunities in agriculture and agribusiness.

TOOLKIT

FAO Social Protection Portal

www.fao.org/social-protection

Strengthening coherence between agriculture and social protection to combat poverty and hunger in Africa A framework for analysis and action

www.fao.org/3/a-i5386e.pdf

Strengthening coherence between agriculture and social protection to combat poverty and hunger in Africa Diagnostic Tool

www.fao.org/3/a-i5385e.pdf

Social analysis for agriculture and rural investment projects

www.fao.org/elearning/#/elc/en/course/SA

12 Improve nutrition and promote balanced diets

CONTRIBUTES TO SDGs:

1 2 3 5 12



MALNUTRITION COSTS THE GLOBAL ECONOMY AS MUCH AS FIVE PERCENT OF GLOBAL GDP IN LOSS OF PRODUCTIVITY AND DIRECT HEALTH CARE SPENDING

Malnutrition in all of its forms – undernutrition, micronutrient deficiencies, obesity and diet-related non-communicable diseases – imposes unacceptably high economic and social costs on all countries. It is often taken for granted that agriculture and food systems provide for people’s nutritional needs. However, this is often not the case. Agriculture policies that focus exclusively on productivity frequently favour a limited number of commodities, which tends to reduce the availability of diversified food, in particular in rural areas, leading to a deterioration of people’s nutritional status.

Creating nutrition-sensitive agriculture and food systems requires taking action at all stages of the food chain in order to deliver safe and nutritious food all year round to the consumer.

- Among synergies between agriculture and nutrition, school feeding programmes that involve local producers can provide new market opportunities for fresh products while improving the nutritional status of children attending school.
- Nutrition education and awareness programmes involving agriculture and health operators, targeting families with small children in particular, can lead to a significant impact

in improving household dietary habits. Promoting the consumption of locally grown nutritious food helps foster the local economy.

- Promoting diverse foods. Investigating the potential of underutilized food crops and animal species, or breeds, can play an important role in enhancing the nutritional status of rural and urban populations.
- Malnutrition affects the development potential and the health of citizens and local communities. Accelerating efforts to address all forms of malnutrition will unlock human potential and stimulate positive change. The Decade of Action on Nutrition (2016-2025) provides a framework for collective action.

TOOLKIT

FAO Nutrition Portal

www.fao.org/nutrition

Toolkit on nutrition-sensitive agriculture and food systems

www.fao.org/nutrition/policies-programmes/toolkit

Home-Grown School Feeding Resource Framework

www.fao.org/3/i8724en/i8724EN.pdf

Key Recommendations for Improving Nutrition through Agriculture and Food Systems

www.fao.org/3/a-i4922e.pdf

13 Prevent and protect against shocks: enhance resilience

CONTRIBUTES TO SDGs:

1 2 9 11 13 14



SOME 80 PERCENT OF DAMAGE AND LOSS CAUSED BY DROUGHT AFFECTS THE AGRICULTURE SECTOR

The recurrence of crises and disasters undermines the efforts of nations to eradicate poverty, hunger and malnutrition and to achieve sustainable development. Agriculture is hit hard, taking about a quarter of all damage and losses caused by natural hazards and disasters in developing countries. These situations chiefly affect people who rely on farming, livestock, forests or fishing for their food and income – around one-third of the world’s population. People with resilient livelihoods are better able to prevent and reduce the impact of disasters on their lives. They can better withstand damage, recover and adapt when disasters cannot be prevented.

Prevention involves bringing together multiple stakeholders from government services to local authorities to farmers and others.

- Improve access to knowledge, technologies and services for those most at risk, as well as enhancing institutional and technical capacities at all levels to deliver disaster-risk reduction. The Sendai Framework for Disaster Risk Reduction 2015-2030 outlines targets and priorities for action.
- Build resilience in agriculture means diversifying a portfolio of activities: diversifying assets and sources of income; alternating types of

farming practices, and moving away from monoculture and intensive agricultural systems, which are more vulnerable to shocks.

- Adopt good practices like managing soil cover and enhancing soil organic matter.
- Integrate disaster risk reduction in agricultural interventions, poverty reduction and climate change strategies, and strengthen the governance framework for early warning and action.
- Combine better climate information with the systematic use of information and communication technology (ICT) to help farmers address climate variability more effectively.
- Provide in-depth and regular information and analysis of vulnerabilities and resilience to support decision-making.

TOOLKIT

KORE - Knowledge sharing platform on resilience

www.fao.org/in-action/kore

Framework for Action for food security and nutrition in protracted crises (CFS-FFA)

www.fao.org/3/a-bc852e.pdf

Resilient Livelihoods

Disaster Risk Reduction for Food and Nutrition Security Framework Programme

www.fao.org/3/a-i3270e.pdf

Self-evaluation and Holistic Assessment of climate

Resilience of farmers and Pastoralists (SHARP) & SHARP Background document

www.fao.org/in-action/sharp/en/
www.fao.org/3/a-i4495e.pdf

E-agriculture strategy guide (piloted in Asia-Pacific countries)

www.fao.org/3/a-i5564e.pdf

Resilience good practices

www.fao.org/in-action/kore/good-practices

14 Prepare for and respond to shocks

CONTRIBUTES TO SDGs:

1 2 9 13 14



ABOUT 1 IN 5 OF THE WORLD'S UNDERNOURISHED PEOPLE, SOME 147 MILLION, WERE LIVING IN COUNTRIES EXPERIENCING PROLONGED CRISES IN 2017

Emergency situations mostly affect smallholder producers and family farmers. When a crisis strikes, they are often in the eye of the storm, losing not only crops but also their limited productive assets. These populations are no longer able to sustain themselves and are often associated with large-scale migration flows.

As part of disaster-risk reduction and resilience-building efforts, vulnerable people need to be able to anticipate, respond to and recover from shocks and crises. This means relaying information to ward off and cope with both rapid and slow on-setting threats such as floods, tropical storms and droughts that threaten to damage assets, destroy production or contaminate water sources for crops, animals and trees.

- Investing in early warning alerts can trigger action before disasters strike. They help governments and organizations mobilize and act rapidly to prevent humanitarian disasters, such as famine or population displacements.
- Strengthening preparedness involves contingency plans for the different agriculture sectors, coordination arrangements, public information and training. It includes maintaining seed and grazing fodder reserves;

safe storage facility for seeds, harvest and tools; stockpiling agricultural tools; and the constitution of emergency funds.

- Specific planning for high-threat plant and animal diseases or pest outbreaks. A country's level of preparedness will largely determine how the burden of the disease can be minimised.
- In post-disaster situations, rehabilitating assets that form the basis of rural people's livelihoods, and restoring local food production capacities to be more resistant to shocks and extremes. This can include providing seeds and fertilizers, fishing equipment, animal restocking, fodder and farm tools, as well as rehabilitating agricultural infrastructure, such as irrigation schemes or feeder roads.

TOOLKIT

Global Information and Early Warning System (GIEWS) on food and agriculture

www.fao.org/giews

Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (EMPRES)

www.fao.org/ag/againfo/programmes/en/empres/home.asp

Food chain crisis early warning system

www.fao.org/food-chain-crisis

FAO Desert Locust Information Service (DLIS)

www.fao.org/ag/locusts/en/activ/DLIS/dailyphotos/index.html

15 Address and adapt to climate change

CONTRIBUTES TO SDGs:

1 2 11 13 14



BY 2050, CROP YIELDS COULD FALL BETWEEN 10 AND 25 PERCENT DUE TO CLIMATE CHANGE

It is increasingly clear that the goals of achieving food security and sustainable agriculture and addressing the challenges of climate change are intertwined and need to be addressed in a coordinated manner. The capacity of the agriculture sectors to respond to climate change has far-reaching impacts on the livelihoods of the majority of people in many developing countries and on national economies. At the same time, agriculture is also a significant source of greenhouse gas emissions. The targets of the Paris Climate Change Agreement make it essential that agriculture and other land-use sectors be part of the climate solution.

Climate change is already a reality for many farmers and food producers across the world. The effects of increasingly volatile and extreme weather patterns are damaging infrastructure, wiping out harvests, jeopardising fish stocks, eroding natural resources and endangering species. Studies indicate that climate change could add 12 percent to 2030 food prices in Africa, where food consumption of the poorest households amounts to over 60 percent of their total spending.

Responding to climate change is a priority today, not tomorrow. Farmers, pastoralists, fisher-folk and community foresters depend on activities that are inextricably linked to climate.

For development to be climate-resilient, they will require greater access to technologies, markets, information and credit for investment to adapt their production systems and practices.

- Countries can adapt to and mitigate the effects of climate change by developing national climate plans through research-based programmes and projects, focusing on resilient livelihoods of rural populations.
- Awareness raising, innovation, capacity development and incentives based on a systematic assessment of expected impacts of climate change on agriculture can stimulate changes in practice.
- A 'climate-smart' approach to agriculture, developed and promoted by FAO, aims to tackle three main objectives: sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing greenhouse gas emissions, identifying synergies between these objectives.
- In the forestry sector, actions aimed at reducing emissions from Reducing Emissions from Deforestation and Forest Degradation (REDD+) countries, plus the sustainable management of forests and the conservation and enhancement of forest carbon stocks, contribute significantly to global efforts to mitigate climate change.

TOOLKIT

FAO Climate Smart Agriculture Portal and sourcebook

www.fao.org/climate-smart-agriculture

Economic and Policy Innovations for Climate-Smart Agriculture (EPIC) program

www.fao.org/climatechange/epic/projects

Nationally Appropriate Mitigation Actions (NAMAs) learning tool

www.fao.org/3/a-i4642e.pdf

REDD+ Reducing Emissions from Deforestation and Forest Degradation

www.fao.org/redd

Ex-ante Carbon Balance Tool

www.fao.org/tc/exact/carbon-balance-tool-ex-act

16 Strengthen ecosystem resilience

CONTRIBUTES TO SDGs:

1 2 13 14 15



AGROECOLOGICAL APPROACHES CAN CONSERVE AND INCREASE AGROBIODIVERSITY BY UP TO 30 PERCENT COMPARED WITH CONVENTIONAL FARMING

Trade-offs exist between ecosystem resilience and agriculture intensification. Agriculture intensification is usually achieved through specialisation, involving large-scale production of single crops (monoculture) or intensive animal farming. However, there is a growing body of evidence showing that ecosystem services provided by monoculture are unable to compensate for the heavy costs of inputs and their pollution of the ecosystem. Intensification strains the system, particularly where the resource base is small, as is the case with smallholders.

Conversely, the more elements that are integrated into a farming system, the more resilient it becomes and the more ecosystem services are provided. Integrated systems, which include mixed cropping, crop-livestock, agroforestry, tree-crop-livestock as well as aquaculture, have demonstrated their ability to cope with climatic variability to ensure food and livelihood security.

- Systems-oriented approaches can address many sustainability issues and objectives of the 2030 Agenda through integrated actions. Biodiversity, land use and management, climate change, water management and forest management all go beyond the interventions of individual food producers.

- Two examples promoted by FAO are landscape approaches – which focus on ecosystem processes, like how communities manage natural resources – and territorial approaches, which centre on socio-political processes and boundaries beyond the individual farm, such as employment, income and social inclusion.
- Globally Important Agricultural Heritage Systems (GIAHS), also promoted by FAO, is a living system of human communities in an intricate relationship with their cultural or agricultural landscape and wider social environment. Safeguarding these agricultural systems and their associated landscapes, biodiversity and knowledge systems is a priority.
- Other landscape and territorial development initiatives include analysing the relationships between urban and rural landscape and food streams, strengthening socio-environmental sustainability through territorial negotiation, productive landscape, participatory land delimitation, land-use planning, applying territorial approaches to food security and nutrition policy and improving gender equality through territorial planning and governance.

TOOLKIT

Agroecology knowledge hub

www.fao.org/agroecology

LADA- land degradation assessment and potential for sustainable land management manuals

www.fao.org/nr/kagera/tools-and-methods/lada-local-level-assessment-manuals

Landscapes for life Approaches to landscape management for sustainable food and agriculture

www.fao.org/3/i8324en/i8324en.pdf

Globally Important Agricultural Heritage Systems (GIAHS)

www.fao.org/giahs

17 Enhance policy dialogue and coordination

CONTRIBUTES TO SDGs:



The integrated and transformative nature of the 2030 Agenda requires policies that systematically consider intersectoral linkages and support cross-sectoral communications and collaboration. In particular, the food and agriculture sector must take an integrated approach to sustainability that includes taking stock of the relevant sectoral policies, mapping and analysing synergies and trade-offs between the economic, social and environmental spheres, assessing the state of the sustainability of food systems and agriculture and identifying key issues, their causes and drivers.

- Analyse how sectoral policies interact with the targets and larger objectives of the SDGs prioritised in national or subnational planning. As an example, agriculture is the largest user of water. Energy is needed to produce and distribute both water and food. And food production and supply chain accounts for a significant part of energy consumption. Policy decisions taken in each of these sectors can have significant impacts on the other ones, and tensions may arise among stakeholders from real or perceived trade-offs between various objectives.
- Establish partnerships that work within established normative frameworks and invest in state capacity to coordinate.

Strategic partnerships between state and non-state actors are crucial to mobilize resources. This requires institutional structures that allow exchange of information and opinion, division of roles and responsibilities, and mechanisms for tracking results.

Multistakeholder platforms create a common space to voice solutions towards shared objectives, helping to mobilize capacities, technologies, financial requirements and access to productive resources.

- Utilize government's convening power to attract key stakeholders, create decision opportunities and consultations for public investment. This includes facilitating innovative and flexible approaches to service provision, and allowing for non-public spaces for private bargaining among stakeholders.
- Engage with entrepreneurs and tap into the potential of the private sector, including farmer organizations, cooperatives, small and medium-sized enterprises, in addition to international corporations. Partnership is particularly relevant in value chains, where producers, governments and private actors can work together towards more sustainability.
- Increase the voice and agency of producers, especially small ones. Producer organisations can help small producers access an array of services, including improved market information, extension and collective bargaining power. They are also an effective means to empower small producers, in particular women and youth.

TOOLKIT

FAO Policy and Governance Portal

www.fao.org/policy-support/governance

FAO Partnership Portal

www.fao.org/partnerships

Monitoring and Analysing Food and Agricultural Policies (MAFAP) programme

www.fao.org/in-action/mafap/home

Global Agenda for Sustainable Livestock

www.livestockdialogue.org

Global Partnerships for Responsible Fisheries

www.fao.org/fishery/fishcode

CFS-Committee on World Food Security

www.fao.org/cts

THE GLOBAL AGENDA FOR SUSTAINABLE LIVESTOCK, AN EFFECTIVE MULTISTAKEHOLDER PARTNERSHIP

Improvements in sector policies, governance and investments will be needed to ensure that the continuing demand for livestock products does not increase pressure on natural resources and contributes to socially desirable outcomes.



To address these issues, FAO started a process in 2010 of building a Global Agenda for Sustainable Livestock (GASL). It is a partnership of livestock stakeholders committed to the sustainable development of the sector. GASL builds consensus on the path towards sustainability and catalyses coherent and collective practice change through dialogue, consultation and joint analysis. It is based on voluntary and informal stakeholder commitment to act towards improved sector performance by targeting natural resource protection, while including poverty reduction and public health protection as they relate to the livestock sector. It gathers many research organizations bringing in new knowledge.

GASL focuses on the improvement of resource-use efficiency in the global livestock sector to support livelihoods, long-term food security and economic growth while safeguarding other environmental and public health outcomes, factoring in regional differences, and linking to other related initiatives as appropriate. The initiative supports improved resource use in the sector resulting from changed practices by stakeholders; and adoption, by the public and private sector, of guidance and recommendations to make livestock food value chains more sustainable. GASL benefits from the financial support of several donors.

18 Strengthen innovation systems

CONTRIBUTES TO SDGs:

1 2 5 9 12 14



A key enabler of most – if not all – SDGs, innovation is a main driver of agricultural and rural transformations. Innovation refers not only to technologies and practices, such as improved crop varieties, agroecological practices, biotechnologies and financial instruments, but also to organizational forms such as public-private partnerships and farmers' cooperatives.

Despite recent progress, many remain excluded from the benefits of social and technical change, people who are already disproportionately poorer and disadvantaged, with most living in rural areas. To redress this, governments and partners should encourage innovation that benefits smallholders by addressing issues like improving sustainability and resilience, raising incomes and reducing risks, including by creating new market opportunities and encouraging diversification, and by reducing natural resource depletion and degradation.

- Increase investments in agricultural R&D, extension and advisory services, as well as capacity development to improve national agricultural innovation systems. Technical change is required not only to improve breeding and yields, but also to reduce

water consumption, enhance resistance to pests and diseases, and strengthen resilience of crops and livestock to climate change.

- Better provision of information to smallholder family farmers about innovations, both in the form of improved technological products and processes, as well as social practices and organization, is needed to facilitate their use. As agricultural systems become more complex, farmers need more advanced innovation skills, and improved information about relevant new technologies and practices.
- Promote innovation for, by and with smallholders themselves. Existing resources and capabilities within public and private sector should be combined to develop simple, practical solutions, and make services and products available that might otherwise be unaffordable to rural populations. This kind of innovation can take advantage of new technologies such as the use of mobile phones and social networks to create new markets in areas where there is a lack of infrastructure or a lack of experience in logistics and distribution.

TOOLKIT

Good practices in building innovative rural institutions

www.fao.org/docrep/015/i2258e/i2258e00.pdf

Innovative markets for sustainable agriculture

www.fao.org/3/a-i5907e.pdf

Towards inclusive Pluralistic Service Systems

Insights for innovative thinking

www.fao.org/3/a-i6104e.pdf

19 Adapt and improve investment and finance

CONTRIBUTES TO SDGs:

1 2 9 12 13 14 15 16 17



Building support for policies that promote rural transformation involves making the case for how investment in sustainable food and agriculture production systems can materially contribute to broader national objectives.

Evidence from many countries shows that public investment in agricultural R&D, education and access to information for producers and in rural infrastructure yields much higher returns than other expenditures, such as input subsidies. Already, producers, including smallholders, are the foremost investors in agriculture despite the fact that smallholders often face specific constraints including poverty, lack of or insecure access to land, poor access to markets and financial services.

Ensuring a level playing field between smallholders and larger investors is important for both equity and economic efficiency reasons:

- Increase investment in rural infrastructure. Unlocking the agricultural potential of an area through public investment in basic infrastructure such as roads, water control or markets provides an incentive for farmers to invest more in their production. Beyond improving farmers' incomes, this generates on- and off-farm employment and contributes to strengthening local economies.

- Explore and exploit new opportunities for inclusive agricultural and rural finance. Inclusive financing can foster agribusiness development by easing liquidity constraints faced by many farmers. A whole range of innovative approaches to rural finance and forms of investment are now available, such as agricultural investment funds, investment promotion, guarantee funds and ICT, to increase the level of financing while lowering the risks to investors.
- Interventions to improve access to credit should also promote financial literacy and management skills, in addition to producer organisations or community-based savings and loan groups, which allow for better risk management and improved access to finance from the formal banking sector.
- Different incentives can be used at various stages to address short- and long-term changes. This might be a combination of positive incentives, such as training, direct payments and compensation for land set aside or improved market access with regulatory instruments, such as prohibition of use, fines and taxes.

TOOLKIT

Investment Learning Platform

www.fao.org/investment-learning-platform/home

Agricultural Investment Funds for Development

[www.fao.org/3/i8226EN/i8226en.pdf](http://www.fao.org/3/i8226en/i8226en.pdf)

Ending poverty and hunger by investing in agriculture and rural areas

www.fao.org/3/a-i7556e.pdf

Rural invest

A tool for project design

www.fao.org/support-to-investment/knowledge-resources/learning-tools/ruralinvest

Portal on Incentives for ecosystem services

www.fao.org/ecosystem-services-biodiversity/incentives

HOW DIFFERENT IMPLEMENTATION INSTRUMENTS WORK TOGETHER FOR SUSTAINABLE AGRICULTURE IN VIET NAM



In the Mekong Delta, Viet Nam, diverse incentives co-financed from public programmes, private sector investment and civil society initiatives are used to support fisher-folk comply with mangrove restoration and protection regulation, and improve the sustainability and livelihood benefits of shrimp fisheries.

Zoning of mangrove areas and mandatory forest set asides on private land with removal of aquaculture leases for non-compliance provide disincentives to deforest mangrove habitat. Civil society initiatives

provide finance to reforest mangrove habitat, training in integrated mangrove-shrimp farming, organic shrimp farming techniques and management of household waste. The private sector provides financial bonuses per hectare of mangrove within aquaculture farms, and has developed a certification of shrimp raised in integrated mangrove-aquaculture areas with a 10 percent premium for certified organic shrimp. This range of incentives provides a diverse source of financial, technical and market assistance for aquaculture farmers to restore mangrove habitats on their farms to reach regulatory compliance, improve sustainable production, reduce environmental impacts and raise productivity, and be rewarded for good environmental stewardship with access to higher-value markets for sustainably produced shrimp.

20 Strengthen the enabling environment and reform the institutional framework

CONTRIBUTES TO SDGs:



The changing institutional landscape for rural service provision reflects a growing diversity of actors from the private sector, producer organisations and civil society. These many actors imply a changing role of the state from sole provider of services to that of regulator, coordinator and facilitator. The diversity of service providers, the knowledge and skills they bring are crucial for enabling producers to improve productivity, manage resources sustainably, operate their farms profitably, and access and respond to broader markets.

- Incentivise provision of rural services, beyond extension, and review their inclusiveness and efficiency. Incentives and partnerships can help services reach remote rural locations and respond to what has previously been lacking from the private sector in motivation, the state in effectiveness, and NGOs and producer organisations in capacities and resources.
- Support institutional change by mobilising different social players, including smallholder producers. Agricultural and rural service provision can benefit from recent governance reforms, including democratisation, decentralisation and territorial development approaches and public sector management reforms.

- Inclusive and incremental institutional development fosters a long-term approach with sustainable impact. Inclusiveness requires recognition of key actors' interests and conflicts, while creating mechanisms through which local communities can articulate perspectives and demands.
- Strengthen institutions and invest in the capacities and knowledge of local actors. Appraising the capacities of local actors and identifying organizational development needs should be a starting point for building more effective institutions for all. Systematic but tailored institutional capacity strengthening is required to ensure all actors have sufficient capacities to move at the same speed. As a means for strengthening the capacity of smallholders, producer organisations deserve special attention.
- Design a sound indicator framework to monitor progress and build accountability. A significant factor in efforts to achieve the SDGs, regular monitoring and reporting can make collaborative action more focused and conducive to evidence-based policy-making. Indicators will also serve as a report card to measure progress, allocate resources and support implementation towards sustainable development, helping to ensure the accountability of all stakeholders. FAO supports countries in monitoring 21 SDG indicators directly related to food security, agriculture, forestry and fisheries.

TOOLKIT

FAO SDGs website

Tracking progress

www.fao.org/sustainable-development-goals/tracking-progress

Monitoring SDG indicators

E-learning tools

www.fao.org/sustainable-development-goals/indicators

Monitoring evaluation and impact assessment

E-learning tool

www.fao.org/elearning/#/elc/en/courses/MEIA

Global strategy to improve agriculture and rural statistics

www.gsars.org

FAOLEX

FAO database on national laws and regulations

www.fao.org/faolex

STRENGTHENING LOCAL INSTITUTIONS FOR COORDINATED ACTION IN RWANDA

Many development programmes are actively investing in Rwanda's Rulindo District to address low agricultural productivity, land degradation and poverty issues. The Crop Intensification Programme focuses on agricultural productivity, the Farmer Field School public programmes focus on sustainable practices and agricultural enterprise development. Landscape restoration is addressed through bench terraces, water retention ditches and the application of agroforestry systems.



Diversify livelihoods and strengthening local capacities focus on improved access to credit and markets, support to cooperatives, better involvement of the private sector. Finally, support to basic requirements is provided through improved access to water and sanitation facilities and rainwater-harvesting systems.

All of these activities correspond to real needs on the ground. However, they are implemented in isolation from each other, often by different organizations. The strengthening of the capacities of the local administrators, through the adoption of a 'landscape governance approach', aims to improve the institutional and technical conditions to develop, combine and scale up public and private interventions towards commonly shared objectives. Better coordination at district level helps enhance these impacts of the different investments.

Measuring progress

A central factor in achieving the SDGs will be new and effective ways of collecting data, monitoring targets and measuring progress. As the basis for policy decisions, effective monitoring offers countries vital information on which groups of people or areas of the country to focus on. Decision-makers need better data to set measurable targets, design and monitor implementation food security initiatives, social safety programmes and to determine effective support to agriculture and rural development. Data disaggregation will be instrumental in targeting interventions to specific groups, transforming food systems, achieving zero hunger and leaving no one behind.

International agencies are providing assistance to country efforts by strengthening national capacities and by ensuring that data are comparable and aggregated at sub-regional, regional and global levels. FAO is

custodian UN agency for 21 of some 230 SDG indicators across SDGs 2, 5, 6, 12, 14 and 15, and a contributing agency for six more. These indicators, which are chiefly directed towards capturing information on hunger, food insecurity, sustainable agriculture and the sustainable use of natural resources, are designed to be disaggregated, adopted universally, and reported regularly and cost-effectively.

- Prioritise SDG global indicators to set and measure national targets. Only SDG indicators agreed by UN Member States will be used to assess progress at global level. Countries adopting SDG indicators will guarantee visibility in global reporting and avoid extra reporting burdens.
- Build a reliable, comprehensive and disaggregated information base organised around the relevant SDG targets and indicators. Data for this information base could be taken from existing

official statistics or other sources available. Where there are data gaps, it will point to areas that do not receive sufficient attention, where institutional capacity may be insufficient, or where deeper analyses are required to understand what needs to be measured and how.

- Change the way national statistical offices work to achieving better quality, more regular and easily available data in support of the SDGs. While still the main actor in generating data, national statistical offices should join forces and work with other data contributors, including local and regional governments, line ministries, private players, academia, civil

society and citizens. Their role should place greater emphasis on coordination, managing the various data inputs from different actors, ensuring data quality, comparability and harmonisation before reporting to custodian agencies.

- Regularly report progress on targets using SDG indicators. Indicators can turn the target set into a management tool to allocate resources to support the implementation strategy, and a report card to measure progress and ensure the accountability of all stakeholders. Data collection should be sufficient to allow for disaggregation by gender, age, income, geography and occupation.

FAO as custodian UN agency

SDG INDICATOR	CUSTODIAN PARTNERS
2.1.1 Prevalence of undernourishment	FAO
2.1.2 Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)	FAO
2.3.1 Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size	FAO World Bank
2.3.2 Average income of small-scale food producers, by sex and indigenous status	FAO World Bank
2.4.1 Proportion of agricultural area under productive and sustainable agriculture	FAO UNEP
2.5.1 Number of plant and animal genetic resources for food and agriculture secured in medium or long term conservation facilities	FAO UNEP
2.5.2 Proportion of local breeds, classified as being at risk, not-at-risk or unknown level of risk of extinction	FAO UNEP
2.a.1 The agriculture orientation index for government expenditures	FAO IMF
2.c.1 Indicator of (food) price anomalies	FAO
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	FAO UN-Women, EDGE, UN-Habitat, WB
5.a.2 Percentage of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control	FAO
6.4.1 Change in water use efficiency over time	FAO on behalf of UN-Water
6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	FAO on behalf of UN-Water
12.3.1 Global food loss index	FAO UNEP
14.4.1 Proportion of fish stocks within biologically sustainable levels	FAO
14.6.1 Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing	FAO
14.7.1 Sustainable fisheries as a percentage of GDP in small island developing States, least developed countries and all countries	FAO
14.b.1 Progress by countries in adopting and implementing a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries	FAO
15.1.1 Forest area as a percentage of total land area	FAO UNEP
15.2.1 Progress towards sustainable forest management	FAO UNEP
15.4.2 Mountain Green Cover Index	FAO UNEP

FAO as contributing UN agency

SDG INDICATOR	CUSTODIAN PARTNERS
1.4.2 Proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their rights to land as secure, by sex and by type of tenure	UN-Habitat World Bank, FAO, EDGE, UN-Women
1.5.2 Direct disaster economic loss in relation to global gross domestic product (GDP)	UNISDR FAO, UNEP
2.a.2 Total official flows (official development assistance plus other official flows) to the agriculture sector	OECD FAO, WTO
14.c.1 Number of countries making progress in ratifying, accepting and implementing through legal, policy and institutional frameworks, ocean-related instruments that implement international law, as reflected in UNCLOS, for the conservation and sustainable use of the oceans and their resources	UN-DOALOS FAO, ILO IMO, UNEP, ISA
15.3.1 Percentage of land that is degraded over total land area	UNCCD FAO, UNEP
15.6.1 Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits	CBD FAO

Policy support tools

FAO draws on its combination of technical and monitoring expertise to support countries shape policy on food and agriculture. These select products, tools and guidelines are educated by data and experience, and drafted following a collaborative process often involving multiple stakeholders.



The Committee on World Food Security (CFS) is the

foremost inclusive international and intergovernmental platform for all stakeholders to work together to ensure food security and nutrition for all. Reporting to the UN General Assembly through the Economic and Social Council (ECOSOC) and to FAO Conference, the CFS supports countries to implement negotiated cross-cutting policy products.

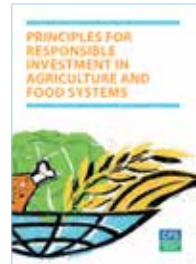
The voluntary guidelines on the responsible governance of tenure of land, fisheries and forests in the context of national food security (VGGT)

The VGGT provide a reference and guidance to improve the governance of tenure of land, fisheries and forests towards achieving food security for all and the progressive realization of the right to food (CFS, 2012).



The principles for responsible investment in agriculture and food systems (RAI)

The Principles address all types of investment in agriculture and food systems – public as well as private, and provide a framework for the development of national policies, programmes, regulatory frameworks, and corporate or individual agreements or contracts (CFS, 2012).



INVESTING IN SMALLHOLDERS

- Investing in Smallholder Agriculture for Food Security and Nutrition (2013)
- How to Increase Food Security and Smallholder Sensitive Investments in Agriculture (CFS, 2011)
- Connecting Smallholders to Markets (CFS, 2016).

SUSTAINABLE AGRICULTURE, FORESTRY AND FISHERIES

- Increasing Agricultural Productivity and Production in a Socially, Economically and Environmentally Sustainable Manner (CFS, 2012);
- Biofuels and Food Security (CFS, 2013);
- Sustainable Fisheries and Aquaculture for Food Security and Nutrition (CFS, 2014);
- Sustainable Agricultural Development for Food Security and Nutrition: What Roles for Livestock? (CFS, 2016);
- Sustainable forestry for food security and nutrition (CFS, 2017).
- The Second Global Plan of Action for plant genetic resources for food and agriculture (PGRFA); the guidelines for developing a national strategy for PGRFA; and the Voluntary guide for national seed policy formulation
- The Sustainable Forest management Toolbox
- The Code of conduct for responsible fisheries (1995)
- The International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing
- The Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication
- International Guidelines on Bycatch Management and Reduction of Discards
- International Guidelines for the Management of Deep-sea Fisheries in the High Seas
- Voluntary Guidelines for flag State performance

CLIMATE CHANGE AND NATURAL RESOURCES

- Food Security and Climate Change (CFS, 2012);
- Water for Food Security and Nutrition (CFS, 2015)
- Climate-Smart Agriculture Sourcebook (2017)
- The Voluntary Guidelines for Sustainable Soil Management (2016)

OTHER CROSS-CUTTING ISSUES

- Engagement in Advancing Nutrition (CFS, 2016)
- Social Protection for Food Security and Nutrition (CFS, 2012)
- Gender, Food Security and Nutrition (CFS, 2011)
- Framework for action for food security and nutrition in protracted crises (CFS, 2015)
- Food Losses and Waste in the Context of Sustainable Food Systems (CFS, 2014)

Contributions to SDG targets

PRINCIPLES	Increase productivity, employment and value addition in food systems	Protect and enhance natural resources	Improve livelihoods and foster inclusive economic growth	Enhance the resilience of people, communities and ecosystems	Adapt governance to new challenges
SDG 1: No Poverty	MAJOR (1.4)	CONTRIBUTING (1.4)	MAJOR (1.1, 1.2, 1.3, 1.4, 1.5)	CONTRIBUTING (1.5)	MAJOR (1.a, 1.b)
SDG 2: Zero hunger	MAJOR (2.1, 2.2, 2.3, 2.4)	MAJOR (2.4, 2.5)	MAJOR (2.1, 2.2, 2.3, 2.4)	MAJOR (2.4)	MAJOR (2.1, 2.3, 2.4, 2.a)
SDG 3: Good health and well being			CONTRIBUTING (3.4)		
SDG 4: Quality education	CONTRIBUTING (4.3, 4.4)				
SDG 5: Gender equality	CONTRIBUTING (5.b)		MAJOR (5.1, 5.5, 5.a)		CONTRIBUTING (5.a, 5.b, 5.c)
SDG 6: Clean water and sanitation		MAJOR (6.3, 6.4, 6.6)			CONTRIBUTING (6.5, 6.a)
SDG 7: Affordable clean energy	CONTRIBUTING (7.2, 7.3)	CONTRIBUTING (7.2, 7.3)			CONTRIBUTING (7.2, 7.3)
SDG 8: Decent work and economic growth	CONTRIBUTING (8.2, 8.8, 8.10, 8.a)	CONTRIBUTING (8.4)	MAJOR (8.3, 8.5, 8.6, 8.7, 8.8, 8.10, 8.b)		
SDG 9: Industry, innovation and infrastructure	MAJOR (9.3, 9.b, 9.c)	CONTRIBUTING (9.1)	CONTRIBUTING (9.1)	CONTRIBUTING (9.a)	CONTRIBUTING (9.3, 9.a, 9.b)
SDG 10: Reduced inequalities			MAJOR (10.1, 10.2, 10.3, 10.4)		CONTRIBUTING (10.2, 10.3, 10.4)
SDG 11: Sustainable cities and communities	CONTRIBUTING (11.4, 11.a)	CONTRIBUTING (11.4)		CONTRIBUTING (11.5)	MAJOR (11.5, 11.a)
SDG 12: Sustainable consumption and production	CONTRIBUTING (12.1, 12.3)	MAJOR (12.2, 12.3, 12.4, 12.5, 12.6, 12.c)	CONTRIBUTING (12.5)		CONTRIBUTING (12.1, 12.6)
SDG 13: Climate action	CONTRIBUTING (13.3)		MAJOR (13.1, 13.3)	MAJOR (13.1, 13.2, 13.3, 13.b)	MAJOR (13.2)
SDG 14: Life under water	MAJOR (14.b)	MAJOR (14.1, 14.2, 14.5)	CONTRIBUTING (14.b)	CONTRIBUTING (14.5, 14.b)	MAJOR (14.4, 14.6, 14.c)
SDG 15: Life on land	CONTRIBUTING (15.2)	MAJOR (15.1, 15.2, 15.3, 15.4, 15.5, 15.6, 15.8, 15.9)		CONTRIBUTING (15.1, 15.3, 15.4, 15.5, 15.9, 15.a, 15.b)	MAJOR (15.9, 15.a, 15.b)
SDG 16: Peace, justice and strong institutions			CONTRIBUTING (16.5, 16.6, 16.7)		MAJOR (16.3, 16.5, 16.6, 16.7)
SDG 17: Partnerships for the goals					MAJOR (17.1, 17.14, 17.17)

The numbers in brackets show the SDG target to which the actions contribute.

TRANSFORMING FOOD AND AGRICULTURE TO ACHIEVE THE SDGs

The path to prosperity is clearly marked by the 2030 Agenda for Sustainable Development.

It requires transformative action, embracing the principles of sustainability and tackling the root causes of poverty and hunger to leave no one behind.

As the prime connection between people and the planet, sustainable food and agriculture have great potential to address many of our challenges, serving up affordable, nutritious food, strengthening livelihoods, revitalising rural and urban landscapes, delivering inclusive national growth and driving positive change across the 2030 Agenda.

20 interconnected actions to guide decision-makers

How can decision-makers turn that potential into reality? How can they select and prioritise resources to accelerate progress? This publication presents practical solutions through 20 interconnected actions, each describing approaches, policies and tools that contribute to multiple SDGs. They integrate the three dimensions of sustainable development, and require participation and partnerships among different actors. Identifying synergies, understanding trade-offs and outlining incentives, these 20 actions tackle the real issues that countries face in building a Zero Hunger world and brighter future for all.

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