Food and Agriculture Organization of the United Nations

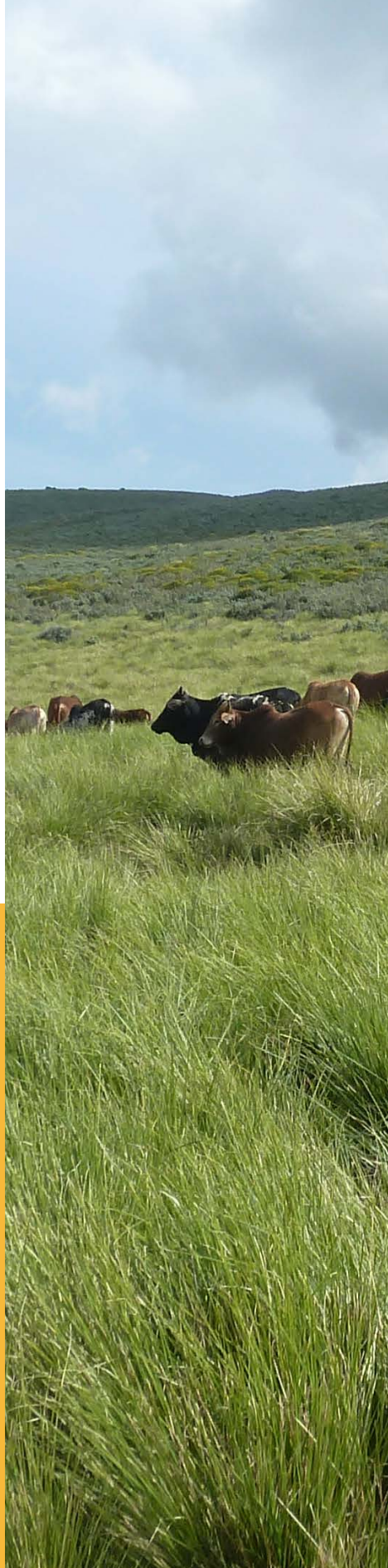
Feeding people, protecting the planet

FAO and the GEF: partners in action

June 2018

GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET

Contents



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FAO focuses on building sustainable food systems that provide nutritious, healthy and accessible food for all, in both rural and urban environments. A key area of FAO's work with the GEF partnership is helping countries transform their food systems to improve land condition, conserve biodiversity and build their resilience to the impacts of climate change, while providing a healthy and nutritious diet for everyone.

José Graziano da Silva
FAO Director-General

Introduction

The world's food and agricultural systems have succeeded in feeding more people than ever before. They supply large volumes of key commodities to international markets. Now, however, these systems are at a crossroads. Although more food is being produced, 815 million people still remain hungry. Two billion people suffer from micronutrient deficiencies. Forty percent of the population over 18 is overweight. What is more, the natural resources that provide the foundation for food and agriculture systems are under severe pressure. One-third of the world's agricultural land has become degraded. Agriculture now accounts for 70 percent of all freshwater withdrawals. Three-quarters of the losses in agricultural biodiversity are due to food production. The food sector is also responsible for 29 percent of global greenhouse gas emissions.

Unsustainable agriculture systems and changes in dietary habits are threatening global biodiversity. Land degradation, pollution, invasive alien species, the destruction of natural habitats and ocean acidification are causing species extinctions, eroding genetic diversity within species, and putting stress on entire ecosystems, often beyond their capacity to adapt. When agricultural systems depend on a small number of crops and crop varieties and limited animal species and breeds, the vulnerability of these systems increases, and this ultimately puts global food security and nutrition at risk.

The combination of ecosystem stress, increased competition for natural resources and tenure insecurity has become a major global concern. More than 780 million people currently live in extreme poverty. Most of these people live in countries that are considered fragile or environmentally vulnerable, or both. Rural people's limited access to land and other natural resources, and the rising numbers of crises, conflicts and disasters, many of which are a consequence of climate change, are threatening the social cohesion and the cultural traditions of rural populations. Distress migration is now at levels not seen in more than 70 years.

How to feed the world without degrading land and water resources, eroding biodiversity and contributing to climate change is among the greatest challenges of our times.

Signs of stress

A third of the world's soils are degraded. Around 30 percent of fish stocks are overfished. Forests continue to be converted into other land uses. The food sector currently accounts for 30 percent of the world's total energy consumption. By 2025, about two billion people could be living in countries or regions with absolute water scarcity.

The partnership between FAO and the Global Environment Facility (GEF) provides support to countries in their efforts to address the root causes of poverty and environmental degradation. The partnership concentrates its work in five focal areas: **biodiversity, climate change, land degradation, international waters and chemicals**. In this way, the partnership is able to move beyond simply conserving natural resources and create the conditions for the sustainable use of these resources. This approach meets the needs of present and future generations by ensuring the profitability of production, safeguarding the health of the environment and fostering social and economic equity. The FAO-GEF partnership has responded to the call of the 2030 Agenda for Sustainable Development, which recognises that the environment, food security and livelihoods need to be addressed together, and that actions must consider the three dimensions of sustainable development: social, economic and environmental. A future focus for the FAO-GEF partnership will be in three key impact programmes: **food systems, land use and restoration; sustainable cities; and sustainable forest management**.

By 2050, FAO estimates that food and agriculture systems will need to produce 50 percent more food to feed the projected global population of close to 10 billion. To achieve this increase in production without further damaging the environment and ecosystems, it will be essential to transform food systems and shift to more sustainable consumption and production patterns. The way food is grown, stored, transported, traded, marketed and consumed will need to be made fairer, more efficient and sustainable.

A move to sustainable agriculture can reverse trends that have led to the mismanagement of land and the degradation of all natural resources. By managing terrestrial ecosystems, as well as freshwater and marine ecosystems sustainably, the agricultural sectors can contribute to delivering critical ecosystem services. Examples of these services include: the maintenance of water quality; the cycling of nutrients in the soil; soil formation and rehabilitation; erosion control; carbon sequestration; the strengthening of resilience to changes and shocks; the provision of habitat for wild species; biological pest control; and pollination.

People and the planet

People are at the heart of all FAO-GEF projects. The world's three billion smallholder farmers, fisher-folk and foresters, pastoralists and indigenous peoples serve as natural resource managers and stewards of the environment. In every country, including small island developing states, least developed countries, and middle-income countries, rural people need to be at the centre of transformational change. Rural people make up about 80 percent of the global poor, but they produce three-quarters of the world's food while ensuring that the natural environment can continue to produce food year after year. FAO-GEF projects, which are based on the premise that local communities must be involved in decision-making, seek to provide rural populations with fairer access to markets and resources. Ultimately, the goal is to enable hundreds of millions of family farmers to sustain their production practices and ensure their access to value chains. This goal will be achieved by forming new coalitions of action with private enterprises, governments and civil society. Blending traditional knowledge with technical innovations and new systems-based solutions offers the possibility of bringing about the transformational change needed to ensure everyone is properly nourished, climate change is addressed effectively, biodiversity is maintained and land and water resources are safeguarded.

FAO and the GEF: partners in action

FAO and the GEF have developed their relationship over more than two decades. The partnership is today widely recognized as a leader in addressing the critical nexus between environment and agriculture. This unique partnership has been instrumental in supporting countries in their efforts to achieve national development objectives and meet the Sustainable Development Goals (SDGs). The FAO-GEF partnership has contributed to national efforts in responding to the dual challenge of ensuring that everyone has access to sufficient amounts of safe and nutritious food, and is capable of coping with the impacts of a changing climate.

FAO became a full-fledged member of the GEF in 2006. Over the past 12 years, the FAO-GEF partnership has helped deliver more than 180 projects in over 120 countries across continents. These projects have benefitted more than 4.6 million women and men, created over 350 000 jobs in rural communities, safeguarded biodiversity in 189 vulnerable marine ecosystems, and saved close to a thousand crop varieties and animal species and breeds from extinction. Importantly, in 90 of these projects, indigenous peoples and local communities have been actively involved in project design and implementation.

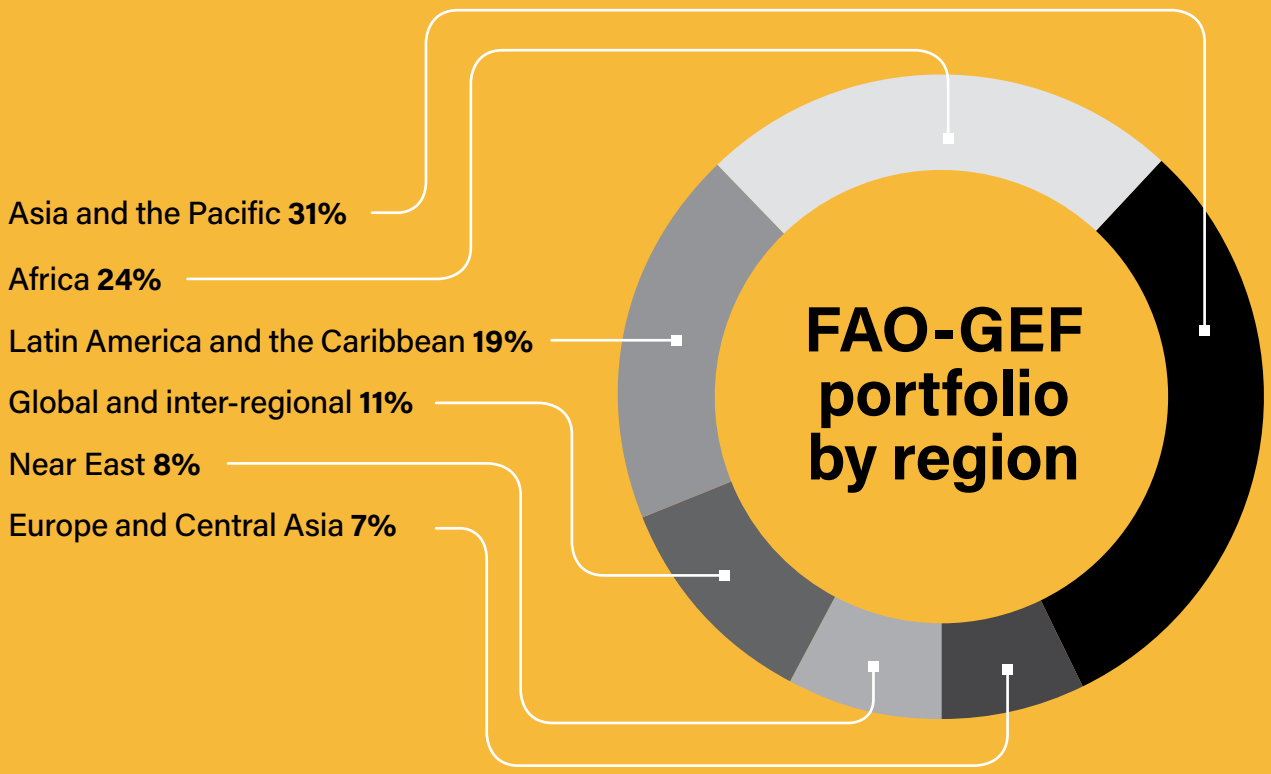
In April 2018, the FAO-GEF portfolio, which is spread across all of the GEF's five focal areas, was valued at USD 732 million. FAO assists member countries to identify, develop and implement GEF-eligible projects. Some of these projects receive co-financing from governments, collaborating agencies, bilateral donors, international financial institutions, and FAO.

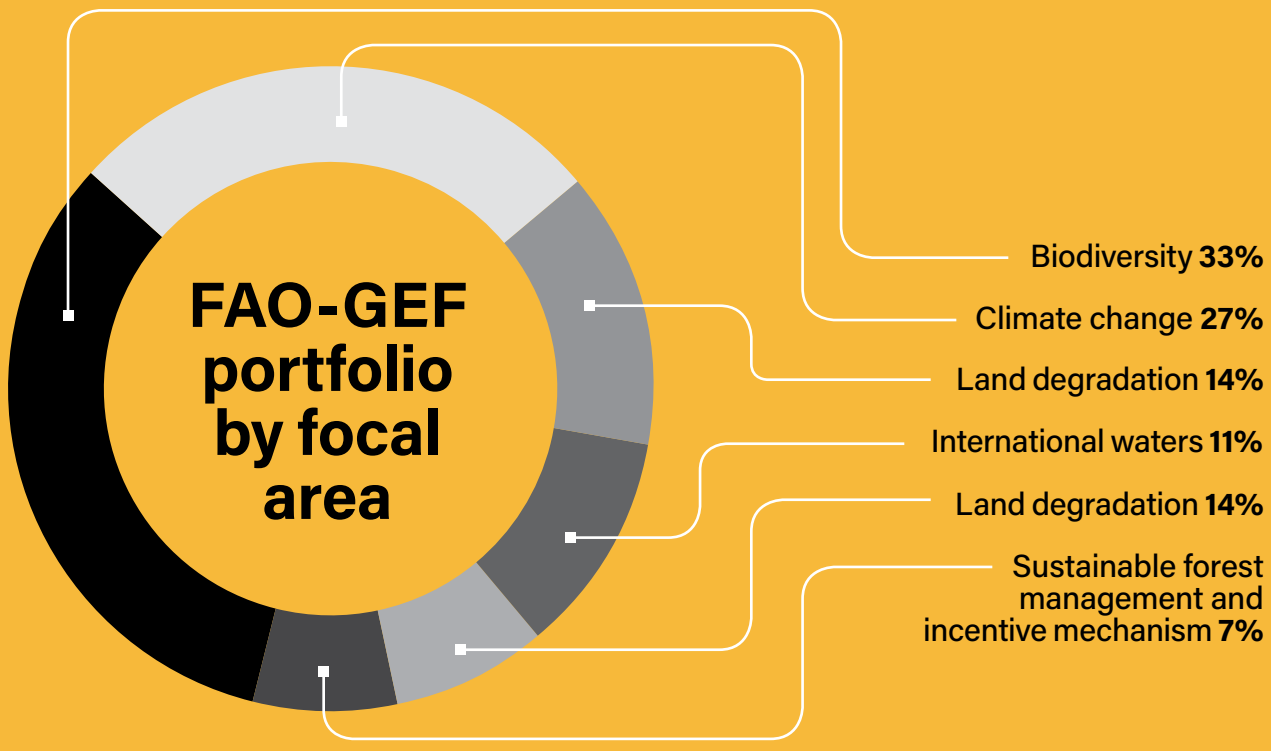
GEF

Established in 1991, the GEF works to address the world's most challenging environmental issues related to biodiversity, climate change, land degradation, chemicals and international waters. The GEF partnership currently consists of 18 agencies and 183 countries.

FAO

Founded in 1945, FAO's vision is for a world free of hunger and malnutrition, where food and agriculture contribute to improving the living standards of all, especially the poorest, in an economically, socially and environmentally sustainable manner. FAO membership currently includes 194 Member Nations, two associate members and one member organization, the European Union. The Organization works in over 130 countries.


FAO-GEF portfolio by region
Asia and the Pacific 31%
Africa 24%
Latin America and the Caribbean 19%
Global and inter-regional 11%
Near East 8%
Europe and Central Asia 7%

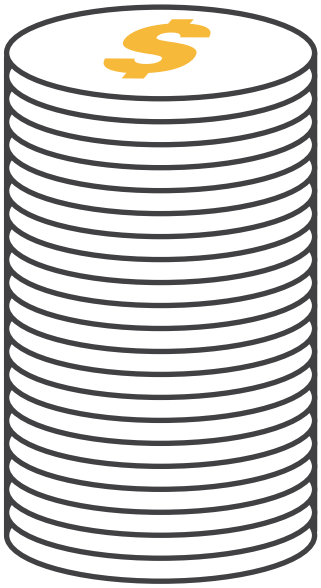

FAO-GEF portfolio by focal area
Biodiversity 33%
Climate change 27%
Land degradation 14%
International waters 11%
Land degradation 14%
Sustainable forest management and incentive mechanism 7%

FAO and the GEF: impact in numbers*

187 PROJECTS

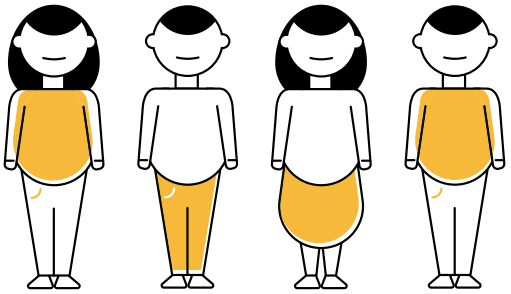
123 COUNTRIES

90 **PROJECTS** ACTIVELY ENGAGED
INDIGENOUS PEOPLES AND LOCAL COMMUNITIES

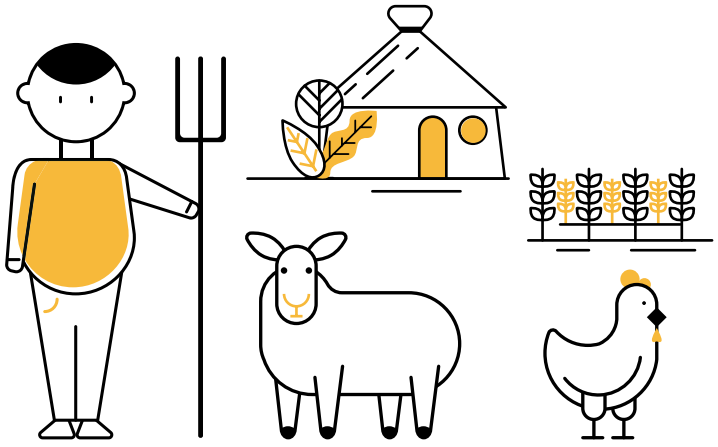


3.7
BILLION USD
IN CO-FINANCING

732
MILLION USD
IN GEF GRANTS



BENEFITED
4.6 **MILLION**
WOMEN AND MEN



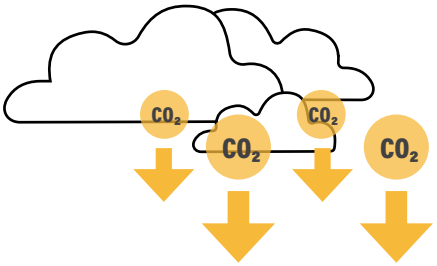
350 000
JOBS CREATED
FOR THE RURAL POOR

IMPROVED **LAND MANAGEMENT** OF:

11.5
MILLION ha
OF PROTECTED AREAS

12
MILLION ha
OF AGRICULTURE LAND

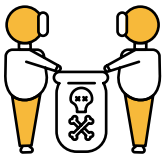
MITIGATED
532
MILLION
tonnes OF CO_2eq



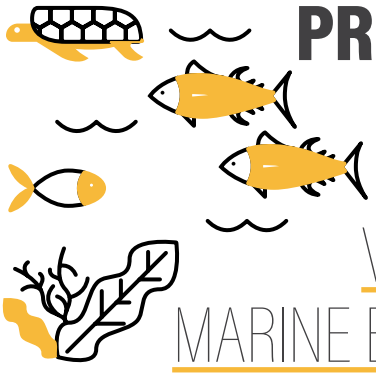
SUSTAINABLY MANAGED
OVER **2 000** ha
OF SURFACE WATER
AND GROUNDWATER

CONSERVED
821 GLOBALLY SIGNIFICANT LANDRACES, TRADITIONAL CROPS AND ANIMAL BREEDS

SAFELY DISPOSED OF
6 859



tonnes OF HAZARDOUS CHEMICALS AND WASTE



PROTECTING
189
VULNERABLE MARINE ECOSYSTEMS

*Numbers represent the sums of figures reported by management teams of over 120 projects. Marginal differences are expected.

Key messages

Sustainable food and agriculture connect people and the planet and requires transformative action to tackle the root causes of environmental degradation, hunger and poverty

We envision new systems of innovation and finance that combine the power of research and education with the energy of business and enterprise. This must be delivered by novel and innovative platforms, bridging institutions, catalytic policy and harnessing enormous investment. In this way we can unleash our potential and the potential of the world's millions of family farmers, fishers and value chain actors to halt climate change, conserve biodiversity, restore our land and seascapes and produce nutritious food for all.

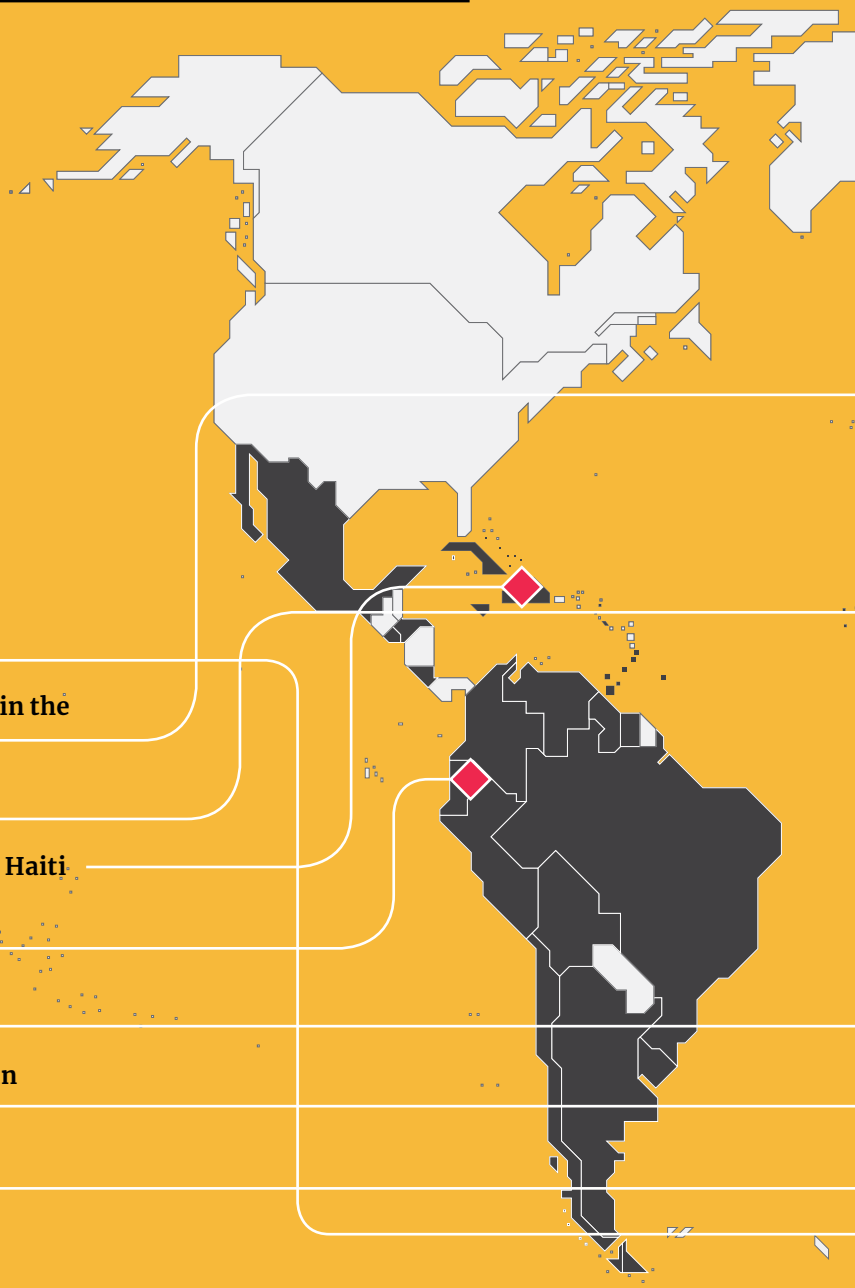
Environment, biodiversity and ecosystem services are essential for the achievement of food security and nutrition. Managing natural resources and mainstreaming biodiversity across agriculture sectors are the key towards sustainable agriculture

Increasing food production by 50 percent to ensure food security for nearly 10 billion people, the projected global population in 2050, without causing further environmental damage can be achieved by transforming food systems and adopting sustainable agriculture practices. This is needed to sustainably produce enough nutritious food in the face of challenges, such as climate change and growing populations with changing diets. In agricultural ecosystems, maintenance of biological diversity is important both for food production and to conserve the ecological foundations necessary to sustain life and rural livelihoods. The SDGs cannot be achieved without sustainable use of natural resources and biodiversity. Good governance, enabling frameworks, and stewardship incentives are needed to facilitate mainstreaming of biodiversity. Structured and coherent actions to conserve, sustainably use, manage and restore biological diversity across agricultural sectors is required at all levels.

Reducing the ecological footprint of agriculture through sustainable practices and landscape and seascape approaches is a priority

Agricultural sectors are major users of biodiversity that can impact environment but they also have the potential to contribute to its protection. The agricultural sectors together manage the largest terrestrial, freshwater and marine areas on Earth. If managed sustainably, agricultural sectors can contribute to important ecosystem functions. These include maintenance of water quality, nutrient cycling, soil formation and rehabilitation, erosion control, carbon sequestration, resilience, habitat provision for wild species, biological pest control and pollination. In order to secure healthy ecosystems for food security and nutrition for all, it is important to develop approaches such as ecosystem approaches and agroecology, as well as tools to propose a common vision of the agricultural sectors and the inter sectorial synergies to make agricultural sectors more productive and sustainable.

Impact around the world



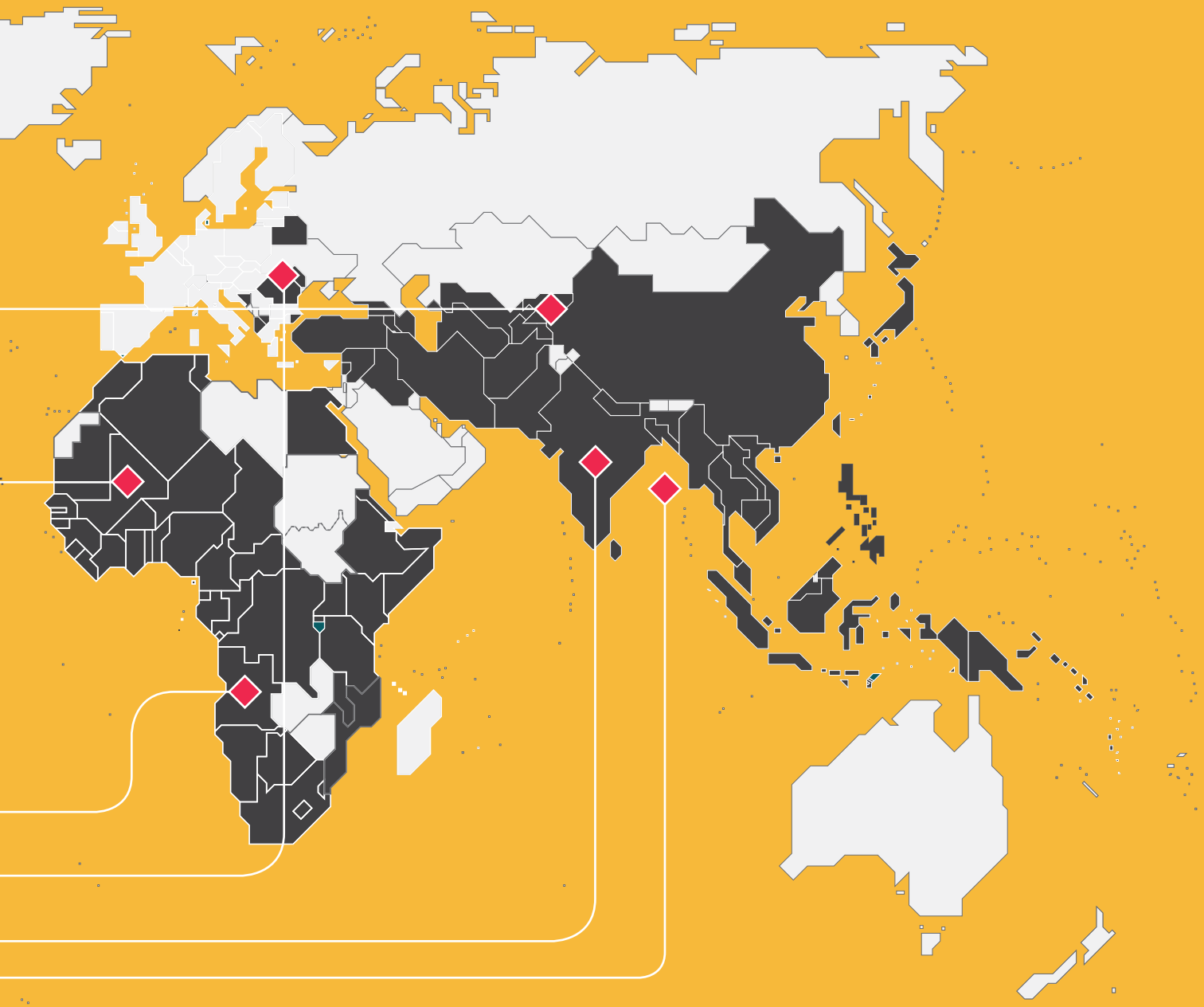
- Managing marine ecosystems in the Bay of Bengal
- Sustainably managing forests and land in the Kyrgyz Republic
- Climate resilience and food security in rural Mali
- Building resilience in disaster-stricken Haiti
- Safeguarding biodiversity in Ecuador's mountains
- Sharing knowledge to reverse land degradation in Angola
- Dealing with pesticides and pollutants in Europe and Central Asia
- Responding to climate variability and change in India

Tuna, biodiversity and the high seas

Working to promote sustainable tuna fisheries resources and biodiversity conservation in marine areas that do not fall under any national jurisdiction.

Valuing nature's architects

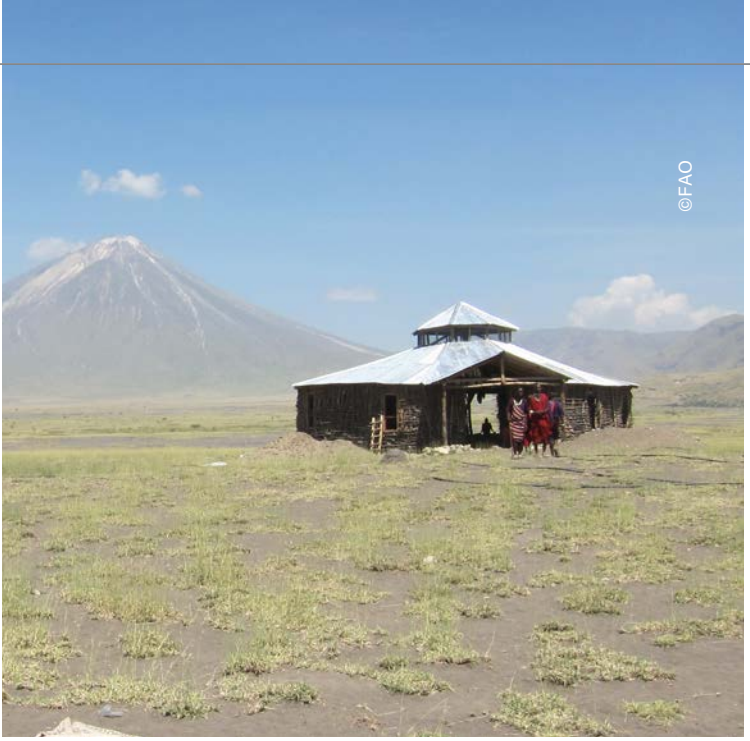
The main goal of the GIAHS Programme is to identify and safeguard remarkable traditional agricultural systems with outstanding aesthetic beauty and high agro-biodiversity.



Valuing nature's architects

Globally Important Agricultural Heritage Systems (GIAHS) are landscapes of outstanding aesthetic beauty that have high agricultural biodiversity, contribute to ecosystem resilience and are a valuable part of our cultural heritage. Created in 2002 as a Global Partnership Initiative hosted by FAO, the main goal of the GIAHS Programme is to identify and safeguard these remarkable traditional agricultural systems. These systems, which have been maintained from one generation to the next, have endured thanks to the interaction between agriculture, culture and the sustainable management of natural resources. These complex interactions are the result of a holistic approach to agricultural development that is based on harmonious relationships between human needs and nature conservation. With the global GEF project which started in 2008, *Conservation and Adaptive Management of Globally Important Agricultural Heritage Systems*, FAO has established a mechanism that intends to increase the momentum for GIAHS, so that they have a greater impact and move from the conceptual stage to a set of concrete, action-oriented activities.

Currently, there are 50 designated sites in 20 countries around the world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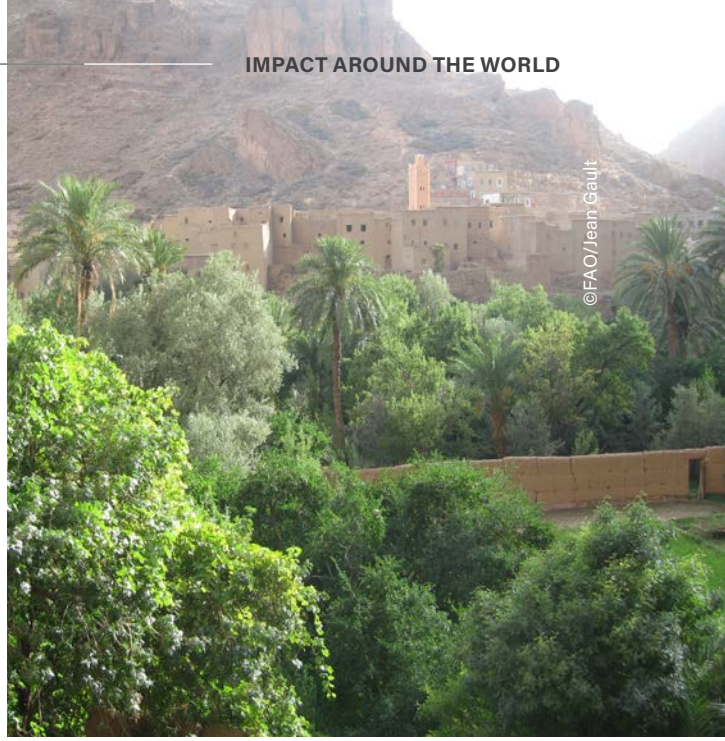
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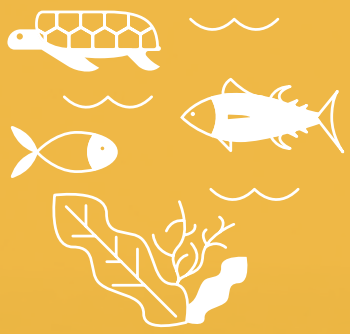
Managing marine ecosystems in the Bay of Bengal



Working with **8** countries in the Bay of Bengal Large Marine Ecosystem

Benefitting **400** million people living in the Bay of Bengal area

2 230 people trained and given knowledge and skills

Fisher-folk view their day's catch in the Bay of Bengal

Around 400 million people live in the Bay of Bengal area. The vast majority of them subsist at the poverty line or below it, and are dependent on the Bay of Bengal for their food and livelihoods. The continuing degradation of the Bay of Bengal's coastal and marine resources is having a severe impact on the quality of life and the prospects for economic growth in these impoverished communities.

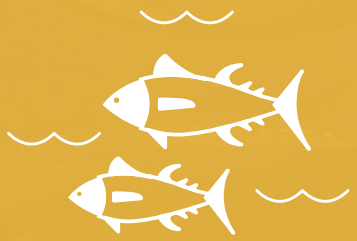
The FAO-GEF project, ***Sustainable Management of the Bay of Bengal (BoB) Large Marine Ecosystem (LME),*** is designed to enhance the regional management of the environment and the fisheries sector in order to improve the health of marine and coastal ecosystems and the living resources in the area, and better the lives of the coastal populations. The Project, phase 1 of this long-term initiative, was implemented from 2009 to 2017 in the eight countries (Bangladesh, India, Indonesia, Malaysia, Maldives, Myanmar, Sri Lanka and Thailand) of the Bay of Bengal. Phase 1 addressed issues related to transboundary marine resources, including land-based sources of marine pollution, artisanal fisheries versus commercial fisheries, and habitat conservation and restoration.

A catalyst for the successful implementation of Phase 1 was bringing together a broad range of stakeholders: local government agencies, commercial and fisher-folk and their families, and local environmental, social and cultural NGOs. These stakeholders worked together through strategic partnerships. Stakeholder engagement, participation and empowerment was actively encouraged, and supported by programmes that strengthened the stakeholders' capacities to plan and implement management measures that used an ecosystem approach.

The Strategic Action Programme for the sustainable management of the BOBLME represents a key milestone of Phase 1. It will be implemented in the next phase of the project and is expected to further contribute to enhancing food security and reducing poverty in coastal communities in the region. Investing in its implementation and achieving its objectives will help safeguard ecosystem services that are estimated to be worth around USD 240 billion over the next 25 years.

Safeguarding ecosystem services estimated to be worth around USD 240 billion over the next 25 years

Tuna, biodiversity and the high seas



19.4 billion ha of ABNJ are under improved management by the five tuna RFMOs

5 additional major commercial tuna stocks are under improved management with harvest control rules

"The Common Oceans ABNJ Tuna Project workshops provided a forum and a curriculum, nurturing increased understanding in an interactive and engaged way. In the Eastern Pacific and Indian Ocean this directly contributed to better management, and has accelerated improvement in all tuna-RFMOs."

Daniel Suddaby, Policy Director, Ocean Outcomes (O2)

Many of the world's most valuable fisheries and marine ecosystems are dependent on marine areas beyond national jurisdiction (ABNJ). These areas are also known as the common oceans or the high seas. There are few resources that are as closely associated with these areas as tuna fish. This group of highly migratory species accounts for almost 20 percent of all marine capture fisheries. Every year, the world's tuna fleet, which consists of thousands of vessels from over 85 countries, lands catches valued at almost USD 17 billion. However, the high demand for tuna has caused some stocks to become overfished. About one-third of catches from major commercial tuna stocks originate from sources that are subject to overfishing. This situation poses a challenge to the efforts undertaken by the tuna Regional Fisheries Management Organizations (RFMOs) to ensure sustainable fisheries management and biodiversity conservation. Illegal, unreported and unregulated (IUU) fishing is another serious threat to sustainable fisheries, marine ecosystems and the livelihoods of fisher-folk.

The GEF-funded and FAO-implemented Common Oceans ABNJ Tuna Project, which is carried out in collaboration with a number of partner organizations, seeks to achieve responsible, efficient and sustainable management of tuna fisheries resources and conserve biodiversity. This project, which is the largest of four projects in the Common Oceans ABNJ Programme, brings together a large number of global, regional and national partners. These partners include the five tuna RFMOs, non-governmental organizations (NGOs), international organizations, and representatives from governments and the private sector. Results from 2017 show that progress has been made in strengthening governance and collaborative work among the tuna RFMOs on various issues, including compliance, ecosystem-based management, fish aggregating devices and harvest strategies. The tuna RFMOs have developed and agreed on harvest control rules for five additional tuna stocks and have expressed a clear commitment to continue current efforts until all major stocks are covered.

To improve the ability of countries that are members of tuna RFMOs to combat IUU fishing, the project has directed resources towards building capacities and networking, and developing and testing innovative monitoring, control and surveillance tools. These tools include a legal template for implementing Port State Measures, options for the design of tuna catch documentation schemes, and a list of authorized vessels that is synchronized daily with all tuna RFMO records. About 75 officers in the Pacific region participated in the first-ever certification-based training programme for compliance officers operating in tuna fisheries. This training programme will be extended to all tuna RFMO regions. Results from pilot activities in Fiji and Ghana show that electronic monitoring systems can be an effective tool for improving compliance in developing countries.

Progress has also been made in addressing information gaps that had impeded the effective management of the impacts that tuna fisheries have on ecosystems and biodiversity. International bycatch analyses, which were coordinated by the project, have established new partnerships and modes for sharing data. In addition, steps have been taken towards reducing the impacts caused by fishing gear on threatened species.

Sustainably managing forests and land in the Kyrgyz Republic

Benefitting 9 655 families including

26 500
women and men

Reforested

2 100 ha

Improved pasture management on

20 000 ha

Farmers digging in fields on the forest edge

The forests in the Kyrgyz Republic once covered vast stretches of the country, but today these forests are threatened. Severe forest degradation and the increasing risk of landslides, mudflows and flooding due to changes in climate are directly affecting the livelihoods of communities in and around the country's forests and mountains. This situation is undermining the country's natural resource base, its economic development and its cultural heritage. In cooperation with the State Agency for Environment Protection and Forestry, and the Ministry of Agriculture, Food Industry and Melioration, FAO has helped bring about a shift in forest and land management practices through a GEF-funded project.

The project, which began in 2014 and will continue until 2019, addresses the social, economic and environmental dimensions of sustainability. Its goal is to enhance the resilience of Kyrgyz forests and agricultural ecosystems to climate change. At the same time, it delivers multiple global environmental and socio-economic benefits by sustaining flows of critical ecosystem services, such as regulatory processes related to climate and fresh water, the control of soil erosion and the management of natural hazards. The planting of trees in over 2 000 hectares of forests and the introduction of innovative agricultural technologies have had a positive impact on lives and livelihoods. The project has promoted an integrated cross-sectoral approach, which has succeeded in removing barriers related to policies, institutions, technologies and capacities that have hindered sustainable forest management and sustainable land management. These same barriers had also hampered the country's ability to account for the role of land and forest resources in determining the national carbon balance.

The planting of trees in over 2 000 hectares of forests and the introduction of innovative agricultural technologies have had a positive impact on lives and livelihoods.

Climate resilience and food security in rural Mali

23 000
smallholder farmers trained on climate-smart agriculture practices

242 villages adopted improved seeds

4 agroforestry zones created, mostly by women

Farmers building earth walls to protect soil from erosion

Mali, a country that has always had high rainfall variability, is experiencing some of the most extreme impacts of climate change. Over the past 50 years, Mali's climate has been prone to dry years and prolonged drought, which have contributed to the vulnerability of rural communities and the degradation of the fragile ecosystems they depend on. Under scenarios where the average temperature increases between 2.71 °C and 4.51 °C and rainfall decreases of up to 11 percent, crop yields in Mali may decrease by 5.5 percent and forage yields may fall by 20 percent by 2025. This will certainly have a negative impact on Mali's major food crops (millet, sorghum, rice and maize) and on livestock, which is the country's second most important export commodity.

A FAO project, which was funded by the GEF, has worked to strengthen Malian farmers' capacities to adapt to climate change. Launched in 2012, the project has built on an expanding network of Farmer Field School (FFS) initiatives to incorporate climate change adaptation concerns, strategies and tools in the agriculture, forestry and pastoralist sectors. The project is centred on three vulnerable regions (Mopti, Kayes and Sikasso), and covers three different production systems (dry cereals, cotton/rice and maraichage) in three different ecosystems (Soudano-sahelian, Sahelian and Sahelo-saharian).

This project has enabled farmers to share knowledge on how to diversify production, improve soil health and fertility, determine the toleration limits of different species to temperature and rainfall, and choose more resilient seeds and varieties. Through agricultural adaptation measures carried out over 123 000 hectares, the project has helped improve the climate resilience of 41 000 smallholder farmers. The project has reported increases in average crop yields of between 21 percent and 77 percent for sorghum, millet, rice, corn, sesame and cotton. Increases in yields of 97 percent were reported for hybrid sorghum seeds.

The project helped improve the climate resilience of 41 000 smallholder farmers through agricultural adaptation measures over 123 000 hectares

Building resilience in disaster-stricken Haiti

Planted
346 000
seedlings of fruit and forest trees

The project reached
5 000
households and succeeded in promoting the adoption of conservation agriculture and the cultivation of Beseba, a drought-tolerant local lima bean variety

Distributed
256 tonnes of climate-resilient crop varieties and 1.7 million sweet potato and cassava cuttings to Haitian families

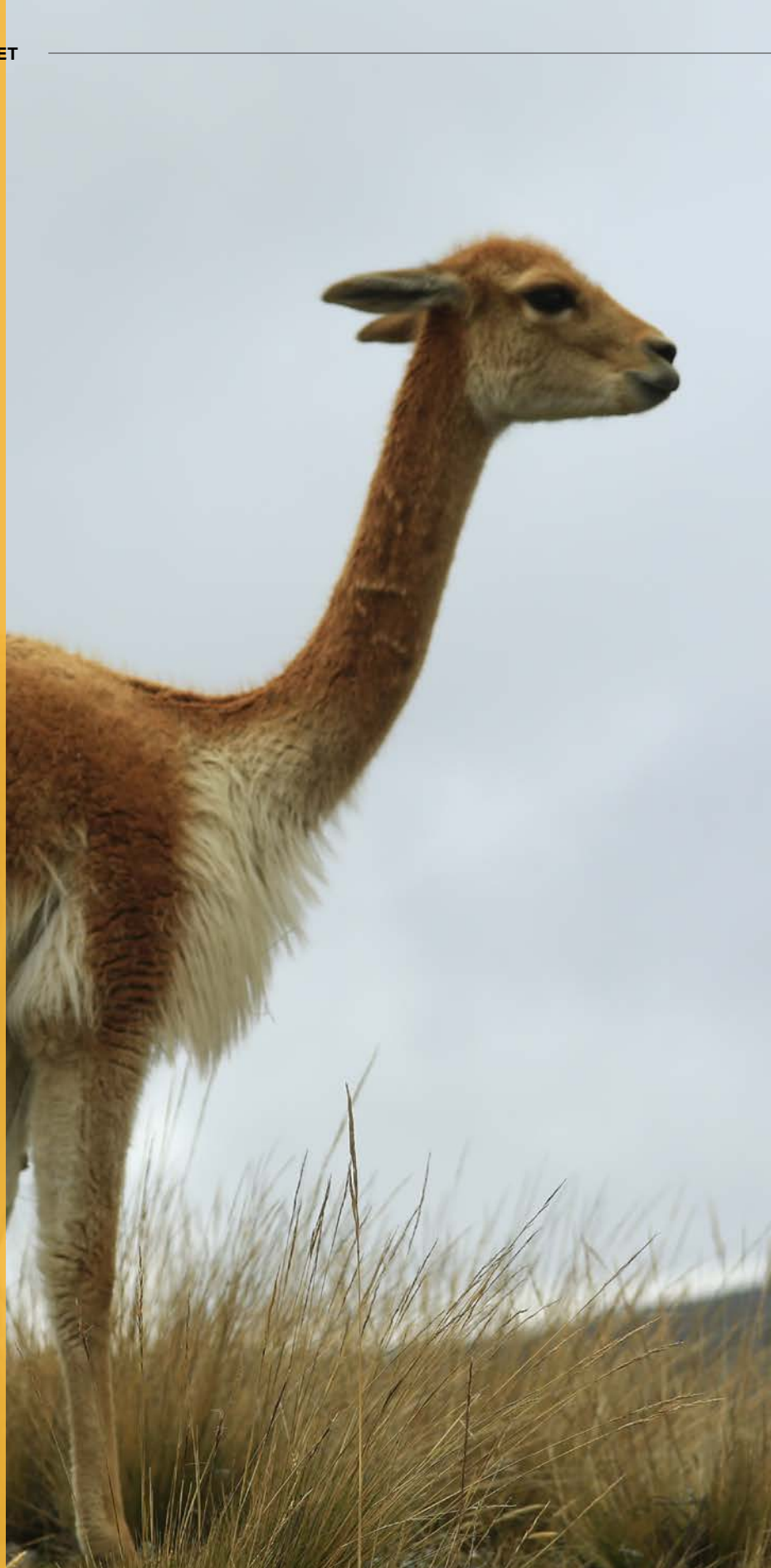
Eight years after an earthquake killed hundreds of thousands of people and left millions displaced, Haiti continues to suffer from the impacts of natural disasters. Hurricanes Sandy (2012) and Matthew (2016), and an El Niño drought (2015) have not only hindered efforts to rebuild after the earthquake, they have also compounded the problem. In 2017, an estimated 2.1 million people were in need of urgent humanitarian assistance. Hurricane Matthew, in particular, caused significant damage to the crop production, livestock and fisheries, which are the foundations for the livelihoods of two-thirds of the population.

The FAO-GEF project, ***Strengthening climate change resilience and reducing disaster risk in agriculture to improve food security in Haiti post-earthquake***, was designed to help farmers to produce more food, increase their incomes and improve the resilience of their livelihoods in the face of disasters. Sustainable and climate-resilient practices, such as the cultivation of drought-tolerant varieties of staple crops, conservation farming, agroforestry, tree planting, and contour and slope farming have been introduced and validated by farmers using the Farmer Field School (FFS) approach in combination with other innovative communication techniques.

By 2017, the project had reached 5 000 households and succeeded in promoting the adoption of conservation agriculture and the cultivation of Beseba, a drought-tolerant local lima bean variety. About 150 lead farmers have become engaged as extension agents; 12 artisanal seed producer groups have been created and equipped; 256 tonnes of climate-resilient crop varieties and 1.7 million sweet potato and cassava cuttings have been distributed; and 346 000 seedlings of fruit and forest trees have been planted. The project also established 130 locally adapted model farms that focus on climate-smart agricultural production and 20 FFS for innovative adaptive agricultural systems.

At the policy level, a technical compendium on climate change adaptation and disaster risk management practices was created; Haiti's National Action Plan for Adaptation to Climate Change (NAPA) was revised and updated; technical assistance was provided for the creation of the Climate Change Directorate; and 10 Community Disaster Risk Management Plans were developed and validated by recipients. The project supported farmers in acquiring the knowledge needed to improve the production of market garden crops and other climate-resilient staple crops. The comprehensive approach adopted in Haiti has improved food security, increased the resilience of household livelihoods and safeguarded the environment.

Safeguarding biodiversity in Ecuador's mountains



As part of the project's focus on building livelihoods, FAO expertise was influential in developing local capacities for the capture and shearing of vicuña. The vicuña, a relative of the llama and native to South America, is highly valued due to its fine wool, which is knitted into garments and fetches high prices on the market. Vicuñas were reintroduced to Ecuador from Peru and Chile in 1988, with a large population now roaming in the Chimborazo Fauna Production Reserve. The capture and shearing of vicuñas, which was carried out in Chimborazo, Ecuador in September 2017, marked the first time this had been done in the area.

Ecuador is one of the world's most biologically diverse countries. It harbours an extraordinary variety of ecosystems and species within a relatively small territory. However, the country is facing serious environmental problems that are contributing to the deterioration of natural ecosystems. The sustainable management of biodiversity and natural resources continues to be a strategic priority for Ecuador whose constitution grants inalienable rights to nature.

The Chimborazo Natural Resources Management Project is working to conserve and manage the Chimborazo's páramos and the biodiversity of the mountain ecosystems in order to improve local livelihoods. The Project, which promotes improved sustainable natural resource management, is a joint effort by FAO, the GEF, the Ministry of Environment and the Chimborazo Provincial Council and other national partners. Its prime objective is to re-establish and sustainably use the agricultural biodiversity in the páramos ecosystems, and improve the food sovereignty of the local indigenous population, who are dependent on Chimborazo's mountain ecosystems. To achieve this objective, the project has adopted modern watershed management approaches.

An important aspect of the project is its focus on working with local communities to construct five watershed management plans that are based on the communities' knowledge and needs.

The project, which has a direct impact on 5 000 families in an area of about 114 000 ha, contributes to strengthening the policies, regulations and legal frameworks for integrating and promoting biodiversity in markets for goods and services. It also forms part of the Provincial Government's plan to adapt to and mitigate climate change. This plan was based on a thorough environmental study conducted in 10 cantons between 2012 and 2015.

"We are really happy that we are allowed to learn from this experience. Up to now, we have created sheep, llama and alpaca wool clothes, so it would be the first time we do it with vicuña."

María Inga, Beneficiary

Vicuña, a wild camelid, observes the páramo of Chimborazo

Sharing knowledge to reverse land degradation in Angola

Benefited **3 400** women and men

Developed **6** territorial plans for improved rangeland management, covering approximately **30 000** ha

Created **2 800** rural employment opportunities

Established **35** Agro-pastoral Field Schools, which have benefited more than **2 800** farmers, 35 percent of whom are women

A facilitator takes a class at a Farmer Field School in Angola

Land degradation in Angola's arid southwestern provinces is largely a result of unsustainable agricultural practices, deforestation, overgrazing in rangelands and recurrent climatic disasters, such as droughts, floods and unpredictable rains. The loss of biodiversity and vegetation that has resulted from this degradation has become a major issue for indigenous communities who are struggling to provide enough feed for their cattle, which represent an essential component of their socio-cultural capital and economic reserves.

Shrinking fertile land and an expanding population have become the main cause of conflict in the region. Disputes are particularly common between peasant and commercial farmers, traditional herders, commercial cattle rangers and returning refugees who are reclaiming their land-use rights.

To address land degradation and promote sustainable food and agricultural systems in Angola, the Ministry of Environment, with technical support from FAO and financial support from the GEF, has been promoting a 'Land Programme'. By mainstreaming locally adapted sustainable land management technologies into agro-pastoral and agricultural development activities, the Programme intended to mitigate the impact of the processes that are contributing to environmental degradation and rehabilitate affected lands.

The Programme creates an enabling environment that is better able to support a sustained flow of agricultural ecosystem services. It is also helping to strengthen and diversify both livestock and non-livestock value chains. Activities are designed to support 2 800 families of smallholder agro-pastoralists through a network of Agro-pastoral Farmer Field Schools (APFS). These schools bring together the ancestral knowledge of indigenous communities with the goal of mainstreaming local practices into efforts to reverse land degradation. They promote knowledge sharing by using an approach that lets local communities define where and how they want to be supported. To date, a core group of 40 APFS master trainers from governmental institutions, NGOs and civil society organizations have been accredited. These master trainers are now instructing more than 80 APFS facilitators who are either agro-pastoralists or pastoralists.

At the same time, the Land Programme also promotes Participatory and Negotiated Territorial Development (PNTD). The PNTD approach focuses on dialogue and negotiation. It creates negotiation tables where different stakeholders (often with conflicting interests) can sit together to reach a common agreement on the development path for their territory. This component of the Land Programme aims to deliver indirect benefits to more than 20 000 people.

> ***"Now we understand that we have to share our knowledge and help each other so nobody is poor."***
>
> **Mucubal, Tribesperson**

Dealing with pesticides and pollutants in Europe and Central Asia

Total of 215 tonnes of obsolete pesticides safeguarded in Azerbaijan and Belarus

93 experts from 13 countries trained in different specialties (inventory, risk assessment, safeguarding)

A special team takes care to dispose of obsolete pesticides

The mismanagement and accumulation of obsolete pesticides and persistent organic pollutants (POPs) poses a real threat to the health of people and ecosystems. Although it remains difficult to assess the extent of the problem, the limited number of field investigations that have been carried out point to a worrying increase in pesticide pollutants.

Through a GEF-funded project, FAO worked to increase the awareness of the dangers of obsolete pesticides in nine countries in Eastern Europe, the Caucasus and Central Asia (EECCA): Albania, Armenia, Azerbaijan, Belarus, Georgia, Mongolia, the Republic of Moldova, Romania and the Republic of Macedonia. The project, implemented in collaboration with a number of international NGOs, provided increased technical capacity to manage, dispose of and prevent obsolete pesticides and Persistent Organic Pollutants (POPs) stockpiles. It also helped to build national capacities to strengthen pesticide import controls and ensure product quality, and provided training for government staff so they are better able to identify and address weaknesses in the system.

The project has brought about a greater exchange of information and increased cooperation among the nine participating countries and within the EECCA region. It has also fostered a more systematic involvement of stakeholders in the area of obsolete pesticides stockpiles, POPs and other chemical waste, and the management of contaminated sites. Policy outcomes include the strengthening of pesticide legislation.

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Responding to climate variability and change in India

A farmer measuring rainfall levels in a rain gauge station

R Kothuru village, located in India's Kurnool district, has witnessed wide-scale fluctuations in rainfall patterns, which are threatening agricultural production and the livelihoods of rural communities in this drought-prone area. The village is one of the 143 'habitations' in seven districts of Andhra Pradesh that were included in the FAO-GEF co-financed project, *Reversing Environmental Degradation and Rural Poverty through Adaptation to Climate Change in Drought-Stricken Areas in Southern India: A Hydrological Unit Pilot Project Approach*. The project, which covered a population of more than 200 000, aimed to strengthen the knowledge and capacities of communities to respond to the impacts of climate variability and climate change.

Farmers Climate School (FCS) helped local farmers build awareness about climate change and its impacts on rural livelihoods. Through their active participation in the FCS, farmers acquired skills in managing climate variability and risks, and test adaptation technologies in farming systems. Organized by the Bharathi Integrated Rural Development Society (BIRDS), the FCS is a year-long school, which starts with the monsoon season and continues through different cropping seasons. It takes a sustained approach to engage the community in considering a range of adaptation technologies and best practices, which have been identified and documented for sharing and scaling up.

The project built the knowledge base and offered practical experience in integrating climate change adaptation into sustainable land and water management practices. It also contributed to the rehabilitation and protection of critical ecosystems, improved soil carbon sequestration and increased agricultural productivity.

"I decided not to spray any more chemical and avoid chemical pesticides. Natural extracts control pests and diseases much more effectively, and can be prepared at home at very low cost. From now on I will use local materials to grow rice crops in the next season and in the coming years."

Rameswari, a female farmer from R Kothuru village had got into debt when investments in fertilizers and pesticides failed to deliver higher yields after erratic rainfall and low minimum support prices

What FAO does

FAO - 70 years of partnership

FAO combines its global convening power with technical, monitoring and policy expertise. This combination makes it well positioned to work with development groups and support countries to formulate policies based on solid evidence. The Organization facilitates partnerships that scale up action and encourages multistakeholder participation that can ensure greater ownership of development interventions. FAO is the only specialized UN agency working in all three dimensions of sustainability across all agricultural sectors, and at the critical intersection between agriculture, the environment and people. FAO's broad multidisciplinary knowledge and extensive experience is critical to supporting countries in their efforts to achieve their sustainable development objectives.

FAO is working towards

- ***Providing evidence-based and policy advice to build sustainable agriculture and food systems***
- ***Promoting guidelines, standards and good practices***
- ***Facilitating policy dialogue***
- ***Supporting countries in designing and implementing strategies and programmes***
- ***Reinforcing the capacity of stakeholders and strengthening the institutional environment***
- ***Mobilizing resources and investments***
- ***Advancing the generation of data at the global and national level***
- ***Building partnerships and alliances***

FAO creates and builds innovative and inclusive partnerships by leveraging technical know-how, providing locally appropriate solutions and fostering transparency and accountability. With the adoption of the 2030 Agenda, the FAO mandate is more essential than ever for addressing global concerns. Its mandate continues to evolve as the links between food insecurity, the degradation of natural resources, youth unemployment, climate change, and other complex global challenges become more evident. FAO facilitates collaborations between governments and a broad range of stakeholders. It partners with the private sector, civil society, producer organizations, cooperatives, academia and research institutions to reach the shared objectives of developing capacities, exchanging knowledge, promoting best practices and fostering inclusive participation.

Nourishing people, nurturing the planet

FAO's vision for sustainable food and agriculture is of a world where food is nutritious and accessible for everyone, and where natural resources are managed in a way that maintains essential ecosystem functions. This vision brings together a number of approaches for sustainable crop and livestock production, forestry and fisheries that have several elements in common: knowledge sharing and capacity building, empowerment, good governance and coherence across different agriculture sectors.

Selected FAO-developed approaches

- Save and Grow
  www.fao.org/ag/save-and-grow
- Global Agenda for Sustainable Livestock
  www.livestockdialogue.org
- Sustainable Forest Management conservation and use of forests
  www.fao.org/forestry/sfm
- Code of Conduct for Responsible Fisheries
  www.fao.org/fishery/code
- Climate-Smart Agriculture
  www.fao.org/climate-smart-agriculture
- Global Soil Partnership
  www.fao.org/globalsoilpartnership
- Sustainable Land Management
  www.fao.org/nr/land/sustainable-land-management
- Energy-Smart Food for People and Climate
  www.fao.org/energy
- The Ecosystem Approach
  www.fao.org/biodiversity/cross-sectoral-issues/ecosystem-approach
- Transforming food and agriculture to achieve the SDGs
  www.fao.org/3/I9900EN/i9900en.pdf
- Sustainable Food Systems Program
  www.fao.org/fileadmin/templates/ags/docs/SFCP/Flyer_EN_01.pdf)
- The Code of Conduct for the Responsible use of Pesticides
  www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/code

Participatory policymaking

FAO believes that effective policy is generated and implemented through inclusive dialogue. The Organization often leads or hosts major inter-agency and multistakeholder alliances. Examples include the UN System Standing Committee on Nutrition, the Committee on World Food Security, the UN High Level Task Force on Global Food Security, UN-Energy, UN-Water and UN-Oceans. Accountable and transparent multistakeholder platforms create a common space to voice and shape solutions that meet shared objectives. These platforms also help mobilize capacities, information, technologies and financial contributions, and increase access to productive resources.

Committee on World Food Security

Widely recognized as a model approach to multistakeholder engagement, the FAO-hosted 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. The CFS brings together representatives from civil society and cooperatives, the private sector and businesses, scientific and academic institutions, donors and philanthropic foundations to discuss policy alongside government delegates, who ultimately take decisions. The CFS supports countries to implement negotiated cross-cutting policy products. Significant policy products implemented in recent years include the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security, and the Principles for Responsible Investment in Agriculture and Food Systems.

Monitoring

FAO provides data and statistical support to approximately 200 countries. FAO statistics can be used by governments in formulating and supervising policies and by farmers in their planning and economic decision-making. As part of its work to assist country efforts to measure progress towards the SDGs, FAO is helping to strengthen national capacities in this area. This support ensures that data are comparable and aggregated at subregional, regional and global levels. FAO is custodian UN agency for 21 of 230 SDG indicators across SDGs 2, 5, 6, 12, 14 and 15. Along with strengthening statistical measures for hunger, malnutrition and agriculture, FAO is developing, with partners, a set of indicators and tools that capture the sustainable use of natural resources across multiple SDGs. Examples include:

- **EX-Ante Carbon Balance Tool** (EX-ACT) is an appraisal system developed by FAO that provides estimates of the impact of agriculture and forestry development projects, programmes and policies on the carbon balance.
- **Open Foris,** hosted by FAO, is a collaborative effort involving private and public institutions, which provides free and open source solutions for environmental monitoring.
- **Collect Earth** is a free and open source application for land monitoring developed by FAO with the support of Google Earth. It gives users access to multiple, freely available repositories of satellite imagery.
- **The System of Environmental-Economic Accounting for Agriculture, Forestry and Fisheries** (SEEA-AFF) is a statistical framework that facilitates the description and analysis of agriculture, forestry and fisheries as economic activities and their relationship with the environment. Released in March 2018, the SEEA-AFF is critical for quantifying and monitoring natural capital.

A measure of sustainability

The definition of sustainability is set to become more precise with the development of SDG indicator 2.4.1. The indicator, under FAO custodianship, will provide governments with evidence to help determine which types of agricultural production are environmentally as well as socially and economically sustainable; where and how to intensify production; and how to extract greater yields with fewer inputs. The development of this indicator could be catalytic to the success of the 2030 Agenda, providing a sustainability benchmark that can be universally applied.

The Agricultural Integrated Survey (AGRIS) is a farm-based modular multi-year survey program that aims to accelerate the production of disaggregated data on agricultural production as well as on the economic, environmental and social dimensions of farms, including smallholder farms.

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System-wide capacity development for country- driven transformations

Aligned with the GEF cross-cutting corporate strategy on capacity development (CD),[1] FAO believes that robust and system-wide CD approaches are essential to enhance the impact, sustainability and scale of GEF projects through deepening country ownership, commitment and mutual accountability for results. Supporting countries through system-wide CD interdependently empowers people, strengthens organizations and enhances the enabling policy and institutional framework based on assessed needs. For GEF, 15 country projects have benefited from incorporating a step-by-step CD approach with innovative methodologies[2] during project formulation and implementation. Findings reveal that the project quality increased substantially through complementing the biophysical with socio-economic and institutional elements, more effective and needs-based CD interventions across people, institutions and policies as well as enhanced country ownership, commitment and subsequent sustainability of results. See for instance Lao PDR (www.fao.org/capacity-development/news-list/detail/en/c/418534/).

[1] www.thegef.org/topics/capacity-development

[2] See for instance "Enhancing Capacities for a Country-Owned Transition towards Climate Smart Agriculture" (www.fao.org/climate-smart-agriculture-sourcebook/enabling-frameworks/module-c1-capacity-development/c1-overview/), "Institutional Capacity Development Assessment Approach for National Adaptation Planning in the Agriculture Sectors" (www.fao.org/3/I8900EN/i8900en.pdf), "Capacity development at multiple levels for effective implementation of Sustainable Land Management" (www.fao.org/3/a-i6085e.pdf), "Measuring Capacity Development Results- What and How" (www.fao.org/3/a-i5243e.pdf)


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