



Food and Agriculture  
Organization of the  
United Nations

# Turning Nationally Determined Contributions into action

**FAO SUPPORT TO COUNTRIES**





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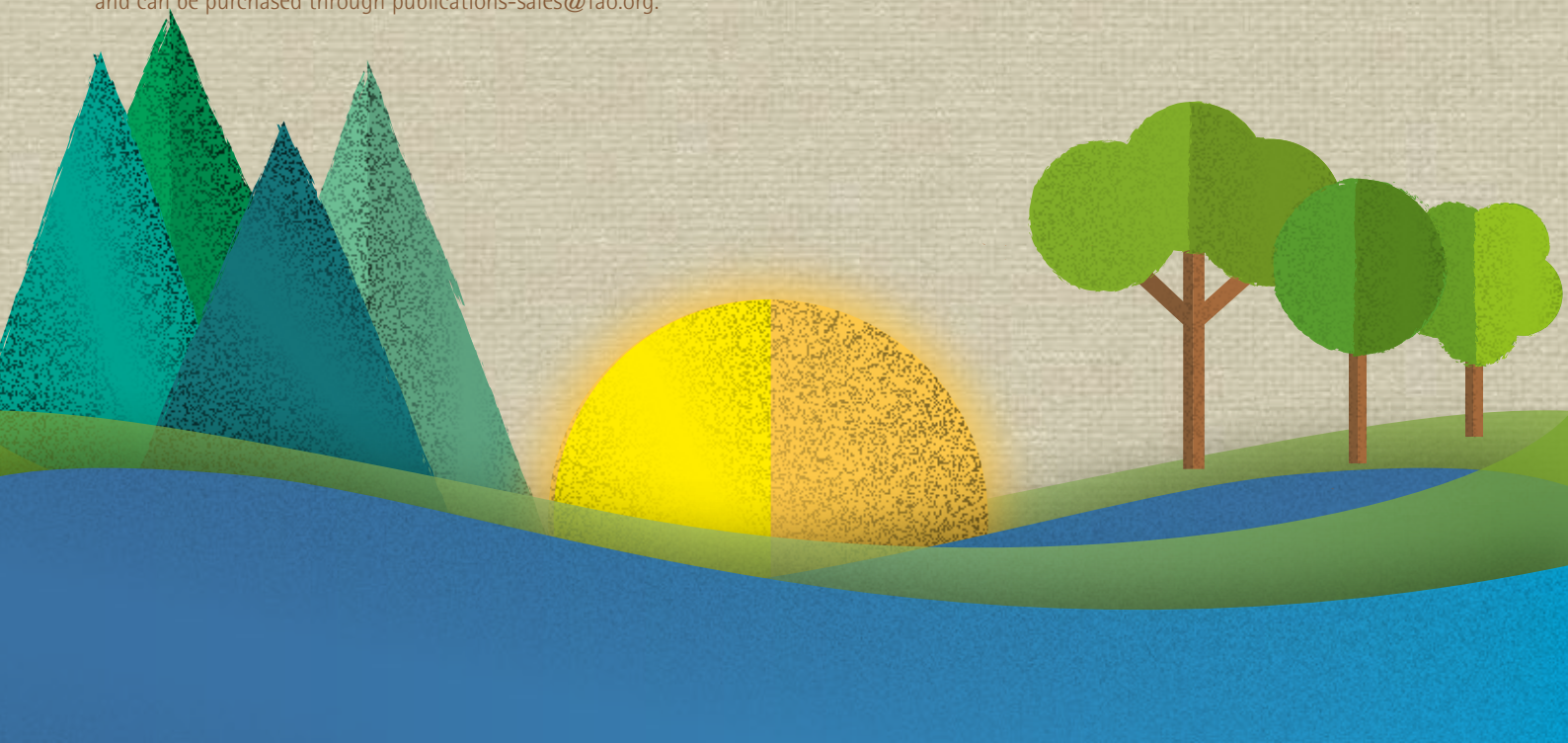
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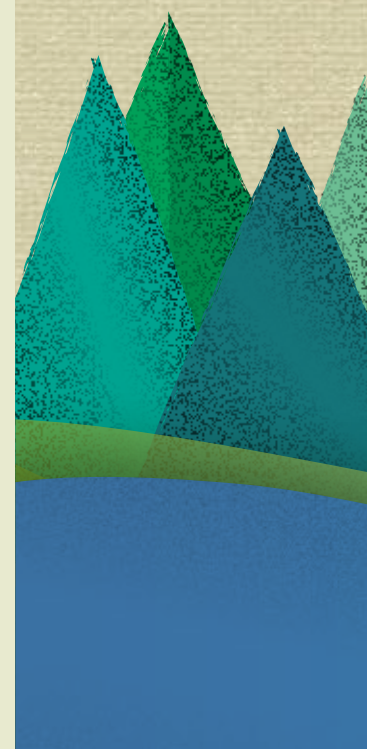


The phenomena associated with climate change, such as higher temperatures, rising sea levels and the increased frequency of floods and droughts all have negative impacts on the agriculture sectors (crop and livestock production, forestry, fisheries and aquaculture). These impacts threaten food security severely. Already today, about 815 million people suffer from hunger, and as the global population grows, the need for food will increase (FAO, IFAD, UNICEF, WFP and WHO, 2017). To ensure sufficient and healthy diets for all, today and tomorrow, the world needs to scale up climate action in the agriculture sectors.

To meet the challenge of climate change, the international community reached a landmark deal at the 21st Conference of the Parties (COP21) of the United Nations Framework Convention on Climate Change (UNFCCC) in Paris 2015. In adopting the Paris Agreement, which was a result of a country-led process that built on national commitments, countries have assumed a lead role in combating climate change. Different countries have different capacities to respond to changes, and some will need more support than others to turn their commitments into action. As the specialized UN agency leading the global promotion of sustainable development in the agricultural sectors, FAO is offering support to countries during every stage of the process – planning, implementing, monitoring, reporting and revising – to fulfil national commitments. FAO is augmenting this work as a member of the NDC Partnership, a new global initiative to help countries achieve their climate commitments.

The main aim of the Paris Agreement is to curb the effects of climate change by limiting the increase in global temperatures to well below two degrees Celsius and, if possible, substantially lower. To reach this ambitious goal, countries have made individual climate commitments, referred to as Intended Nationally Determined Contributions (INDCs). These proposed actions were communicated ahead of the Paris Agreement and served as a basis for the negotiations. As countries ratify the Paris Agreement, the INDCs are converted into Nationally Determined Contributions (NDCs), unless they choose to submit new more ambitious commitments. Countries are then required to submit revised NDCs every five years. So far, the targets countries have set to limit emissions are not enough to keep global warming below the two degrees Celsius threshold (Rockström *et al.*, 2017). To achieve the aims of the Agreement, it is crucial that countries become consistently more ambitious in their proposed targets when revising their NDCs.

The agriculture sectors stand out as a priority in the INDCs, as demonstrated in *FAO's analysis of the Agriculture Sectors in the Intended Nationally Determined Contributions*. This study shows that the agriculture sectors are expected to play a significant role in national responses to climate change. This is particularly true for developing countries where agriculture sectors are vital for safeguarding livelihoods, food security and nutrition. The priorities outlined in the NDCs provide the framework for climate change collaboration between FAO and countries, and are reflected in the Organization's new climate change strategy.





Many countries have recognized that responding to climate change and achieving sustainable development go hand-in-hand. This connection is emphasised in the strong links with the Paris Agreement and the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs). FAO, as a custodian agency for over twenty SDG indicators, also supports countries in their efforts to achieve the SDGs.

This brief summarizes FAO's analysis of NDCs and provides an overview of how the Organization, through policy processes, capacity development and technical interventions on the ground, supports the implementation of NDCs in the agriculture sectors.

## Prioritizing agriculture sectors

Global warming has a profound impact on all agriculture sectors. At the same time, these sectors make significant contributions to greenhouse gas (GHG) emissions. Both mitigation and adaptation actions are crucial for protecting and enhancing global food security and nutrition, and achieving sustainable development. In their commitments to combat climate change, countries have recognized agriculture's double significance. Thirty-nine percent of all developing countries have identified food insecurity and malnutrition as among the major risks they face as a result of climate change.

The agriculture sectors are among the main priorities in countries' mitigation contributions and adaptation objectives. For more than half of all countries, 61 percent, agriculture has a clear role to play in achieving mitigation and adaptation goals.

The agriculture sectors have significant potential to reduce GHG emissions. This fact is also reflected in many countries' commitments. Nearly 90 percent of all countries and 86 percent of all developing countries refer to crop and livestock production and/or land use, land-use change and forestry when outlining their mitigation contributions. Among the developing countries that specified adaptation commitments or actions in their INDCs, more than 90 percent of them linked these commitments to the agriculture sectors.

The changes that food producers can make to adapt to climate change can also bring about emission reductions and removals. Many countries have acknowledged the potential adaptation-mitigation synergies that exist in the various agriculture sectors and have recognized that tapping into these synergies can deliver valuable economic, environmental and social co-benefits. Climate-Smart Agriculture (CSA) has been highlighted as an approach that contributes to both adaptation and mitigation. Thirty-two countries, including 40 percent of the least developed countries, refer to CSA in their INDCs.

# Climate Change Strategy

In April 2017, FAO endorsed its corporate climate change strategy. It articulates a vision of food and agricultural systems and livelihoods that are made more resilient to the impacts of climate change through measures that both facilitate adaptation to change and realize their mitigation potential. FAO's support to the implementation of NDCs is at the heart of its corporate climate change strategy.

The climate change strategy guides FAO actions toward achieving three mutually reinforcing outcomes:

1. **Enhanced capacities of countries on climate change through FAO leadership as a provider of technical knowledge and expertise.**
2. **Improved integration of food security and nutrition, agriculture, forestry and fisheries considerations within the international agenda on climate change through reinforced FAO engagement.**
3. **Strengthened coordination and delivery of FAO work on climate change.**



The NDCs present a framework for the Organization's work on climate change. They define, at the highest political level, the targets and strategies for responding to the impacts of climate change and addressing its root causes. FAO programmes must respond to the challenge of climate change in the broadest possible context by engaging with regional and global agendas, bridging short- and long-term timeframes, being climate-smart and working across sectors and with all stakeholder groups. This composite approach to climate change is fully consistent with the objectives of the SDGs, adheres to the FAO principles for sustainable food and agriculture (FAO, 2014) and serves to sharpen the climate perspectives of existing FAO social and environmental policies.

## Areas of support on the ground

FAO has analysed the common challenges and needs that many developing countries may experience in implementing their NDCs. The FAO publication, *The agriculture sectors in nationally determined contributions (NDCs): Priority areas for international support*, identified five interrelated areas of intervention:



As the leading source of technical expertise on sustainable, climate-smart agricultural development, FAO has the tools, experience and expertise needed to support countries in all five of these areas. Many of these areas of intervention can be supported through specific activities on the ground.

### 1: Compliance with the enhanced transparency framework under the Paris Agreement

One of the key elements of the Paris Agreement is the Enhanced Transparency Framework (ETF), which requires countries to provide national inventory reports of their GHG emissions and information on the progress made in implementing their NDCs. These reporting measures are important, as they will show whether countries are actually meeting their commitments. Done correctly, these measures can build confidence among governments, investors and other stakeholders, and spur a scaling up of global climate actions. The ETF will probably build on the already existing Measurement, Reporting and Verification (MRV) framework under the United Nations Framework Convention on Climate Change (UNFCCC), which requires developing countries to submit National Communications every four years and Biennial Update Reports. Developing countries are also required to set up MRV activities for their Nationally Appropriate Mitigation Actions (NAMAs) and undertake voluntarily MRV of their activities related to reducing emissions from deforestation and forest degradation (REDD+). FAO continues to support countries in meeting these reporting requirements through the REDD+ and the National Forest Monitoring teams and different programmes such as the Mitigation of Climate Change in Agriculture



(MICCA) and the UN-REDD Programme. In 2018, under the Capacity Building Initiative for Transparency (CBIT) of the Global Environment Facility, FAO is launching a global project to support developing countries to comply with the ETF requirements in the agriculture, forestry and other land use (AFOLU) sector.

**National GHG inventories:** Building a national GHG inventory can be particularly challenging, as emissions in the agriculture sectors are more difficult to assess and monitor than in other sectors, mainly due to unavailable data and low technical capacities.

FAO addresses this issue by building capacities to collect the data needed and estimate emissions from the AFOLU sector. A concrete action on the ground was the contribution to establish a national forest monitoring system, which provides data for estimating forest-related emissions and removals. To complement data collection, capacity development activities are carried out to strengthen technical national capacities to report GHG data to the UNFCCC.

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FAO, in collaboration with UNFCCC, developed an e-learning curriculum entitled "Building a sustainable national greenhouse gas inventory for Agriculture, Forestry and Other Land Use".

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**Tracking adaptation:** Unlike GHG reporting, tracking and reporting adaptation progress is not a formal requirement under the ETF. Nevertheless, developing countries may consider providing this information. Adaptation tracking can be complicated, as the international community has not agreed on priority indicators. Consequently, countries may need support in identifying appropriate indicators and reporting progress. FAO is undertaking a comprehensive overview of adaptation needs and the progress that has been achieved in all agriculture sectors and in rural areas. Enhanced capacities to measure adaptation can also support evidence-based decision-making and unlock additional investment for agriculture adaptation.

**Reporting on international support and needs:** Under the Paris Agreement, developed countries have committed themselves to providing financial support, technology transfer and capacity building to developing countries. In turn, developing countries, when reporting under the ETF, are requested to indicate the climate-related support they have received and the support they still need. Many developing countries will require capacity building to track inflows of bilateral and multilateral resources and support, and identify gaps and needs. As a member of the Global Donor Platform for Rural Development, FAO is well positioned to support countries in cataloguing and tracking external support, and identifying pending needs in all agriculture sectors.

**Resources and tools:** Open Foris, Sustainable Forest Management toolbox, FAOSTAT emissions database, FAO Global Forest Resources Assessments, The Global Livestock and Environment Assessment Model (GLEAM), e-learning course on national greenhouse gas (GHG) inventory for agriculture sectors, Knowledge Tank for agriculture sectors' adaptation to climate change.



## 2: Coherent policy frameworks for climate action in the agriculture sectors



FAO has a strong track record of supporting countries in integrating climate change and sustainable development considerations in agricultural planning, and ensuring that all agriculture sectors are reflected in national climate change policies. FAO provides capacity development and technical support to countries seeking advice on how to develop and implement National Adaptation Plans (NAPs) and NAMAs for the agriculture sectors.

**Inclusive national planning:** In formulating a strategy for implementing the NDC, it is important that representatives from all relevant sectors are involved in the planning process. Otherwise different stakeholders may take actions that work at cross purposes, undermining the effectiveness of climate-related agricultural policy measures.

FAO is working with countries to bridge the divide between agricultural and environmental planning processes. A prominent example is the joint FAO-UNDP programme, Integrating Agriculture in National Adaptation Plans (NAP-Ag), which supports 11 countries in addressing adaptation concerns in national planning and budgeting processes. The NAP-Ag Programme has organized a number of training events to enhance the capacities of different ministries to evaluate the economic impacts of climate change on the agriculture sectors, measure the costs and benefits of adaptation options and mainstream gender into climate change plans and budgets. In Kenya, the NAP-Ag Programme has provided support to the development of a new CSA Framework, and two studies are being conducted on the institutional needs and challenges for adaptation planning in the country.

To develop NAMAs in the agriculture and land use sector, countries need specific guidance. FAO has developed a tool, Nationally Appropriate Mitigation Actions in the agriculture, forestry and other land use sectors, which helps countries initiate NAMA identification and planning. FAO also provides technical inputs to countries for designing sectorial NAMAs, an example of which is a NAMA on dairy production in Kenya.

**Resources and tool:** Learning tool on Nationally Appropriate Mitigation Actions (NAMAs) in the agriculture, forestry and other land use sectors.

**Policy coherence:** Many developing countries will require support to develop and implement policy frameworks and set up incentive structures that can provide coherent support for climate action in the agriculture sectors. Efforts to improve policy coherence should aim to fulfil the potential of all agriculture sectors to deliver not



only climate change benefits, but also advance sustainable development. FAO has a long history of working with countries to improve policy coherence in order to achieve national agricultural objectives. The establishment of interministerial working groups to support bioenergy development or review national bioenergy strategies and programmes is an example of this type of support. In collaboration with countries, international agencies, and the UNFCCC's Least Developed Countries Expert Group, FAO has prepared the Supplementary Guidelines for addressing Agriculture, Forestry and Fisheries in National Adaptation Plans (NAP-Ag Guidelines). The guidelines can also be of use to agricultural authorities and experts who are already contributing to climate change adaptation and NAP formulation.

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The NAP-Ag Guidelines are specifically intended to provide national planners and decision-makers working on climate change in developing countries with a better understanding of the need and opportunities for adaptation in the agriculture sectors.

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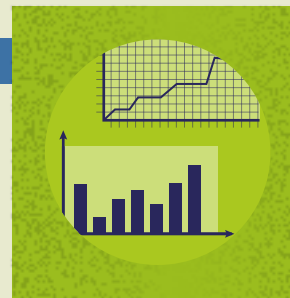
**Targeted policy support:** In many countries, the proposed NDC targets exceed what can be achieved through existing policy frameworks. Government ministries will have to undertake new policy initiatives and measures to reach their mitigation and adaptation targets. FAO provides guidance on integrating climate considerations into policies, strategies, programmes and projects in a way that is coherent with national priorities and the actions of other ministries.

- Through the *Forest and Landscape Restoration Mechanism*, FAO is a leading supporter of forest and landscape restoration policies, strategies and action plans.
- Through activities such as the *Blue Growth Initiative*, FAO is at the forefront of international efforts to promote more sustainable policies and practices in the fisheries and aquaculture sector.
- In the livestock sector, FAO is providing policy support for the implementation of NDCs by providing support for improved livestock management in emergency situations, better disease control, actions to *reduce methane emission from enteric fermentation*, and more effective management of manure and pastures.

FAO will work with countries to develop national visions for productive, resilient and sustainable agricultural development that can thrive in a changing climate. These visions will guide the Organization in its own policy and planning decisions. This process will involve adopting integrated approaches to landscape and water management that take into account the needs of crop and livestock production, forestry, fisheries, aquaculture and other sectors that use natural resources.

### 3: Research, analysis and tools

FAO is the leading source of technical expertise on sustainable agricultural development in a changing climate. The Organization has generated a large body of research, analysis, tools and guidelines that can assist countries and development partners in identifying and carrying out the climate actions in the agriculture sectors that are crucial for implementing NDCs. In accordance with its climate change strategy, FAO is developing new tools and disseminating exiting tools to assist countries in analysing the impacts of climate change, planning appropriate responses to these impacts and meeting new national reporting requirements.



**Strengthening the evidence base for adaptation:** Because of constraints related to resources and capacities, research and analysis on climate vulnerabilities and adaptive capacities has often been limited to specific sectors or regions. Given that the world's most impoverished people earn their living from agricultural work, the widespread knowledge gaps in this area for all the agriculture sectors are particularly problematic.

FAO's expertise on sustainable agricultural and rural development makes it well equipped to support countries in identifying vulnerabilities and adaptation options. FAO's Modelling System for Agricultural Impacts of Climate Change (MOSAICC) provides a solid basis for scaling up support for building the evidence base for adaptation. FAO also plays a key role in building bridges between climate science and fisheries and aquaculture planning by reviewing available scientific knowledge, for example through its contributions to the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report.

**Enhancing the evidence base for mitigation:** In regards to ETF compliance, there are areas where calculation methods can be particularly complex, and many developing countries need support to collect the data needed to calculate GHG emissions and sinks in the agriculture sectors. FAO's Global Livestock Environmental Assessment Model (GLEAM) and the free on-line version GLEAM-i are tools that can be used by governments, scientists and the private sector to calculate emissions from livestock and assess the impacts of project interventions on production and emission levels.

**Facilitating South-South cooperation:** Some developing countries dealing with the impacts of climate change have adopted approaches to adaptation and mitigation that can be of value to other countries. FAO, through its network of 135 decentralized offices, has a strong international presence, which makes it well positioned to facilitate South-South cooperation and exchange. An example of this is the Action Against Desertification initiative. Among its activities, this initiative is helping Fiji to combat land degradation by drawing on lessons learnt



from Africa's Great Green Wall initiative. This project addresses the major issues involved in building the resilience of the forest landscapes in Fiji and improving the livelihoods of the local population. One of its major objectives is to improve the resilience of communities to climate change, climate variability and drought.

**Developing and sharing tools and guidelines:** Planning, implementing, monitoring and reporting on climate action in the agriculture sectors involves a complex set of tasks. User-friendly tools and guidelines can help developing countries to undertake these processes successfully. FAO has a wealth of tools and guidelines to support countries and a range of stakeholders to scale up climate action in the agriculture sectors. Many of them are listed in the publication *FAO's work on climate change and on FAO's climate change website*. Examples include: Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists (SHARP); Global Information and Early Warning System (GIEWS); Breed Distribution Model; Smallholder dairy methodology: Methodology for Quantification of GHG Emission Reductions from Improved Management; LEAP guidelines on Greenhouse Gases from livestock supply chains; Bioenergy and Food Security Rapid Appraisal; Bioenergy Decision Support Tool.

## 4: Capacity development for implementation and action in the agriculture sectors

A lack of capacity can prevent many developing countries from scaling up climate action in the agriculture sectors. Some stakeholders may have the technical capacities and expertise to support sustainable and climate-smart agriculture development, but lack the functional capacities to put this expertise into practice.

Guided by its Corporate Strategy on Capacity Development, FAO is committed to building the technical and functional capacities of countries so that they can fulfil their NDC commitments and make progress toward achieving sustainable, climate-smart agricultural development.

**Strengthening capacities for climate action:** FAO has considerable experience and expertise on building capacities to scale up climate action on the ground. Through the Economics and Policy Innovations for Climate-Smart Agriculture (EPIC) programme, FAO has trained extension agents in a number of areas. EPIC is working on a project to strengthen the capacities in three partner countries (Malawi, Viet Nam and Zambia) to address the constraints to adopting CSA and promote CSA practices that can deliver local benefits in terms of food security and improved livelihoods, as well as global public goods in the form of avoided GHG emissions. This project is also strengthening the capacities of ministries of agriculture to engage in UNFCCC negotiations. In Viet Nam the project focuses on sustainable land management practices for maize systems and the diversification of production into other crops, such as coffee and tea.



The Ecosystem Approach to Fisheries (EAF) and Aquaculture (EAA) also provide frameworks for integrating climate change actions into fisheries and aquaculture management by adhering to inclusive and cross-sectoral principles that can foster climate change adaptation.

**Resources and tools:** EAF toolbox, Ex-ante Carbon-balance Tool (EX-ACT), GLEWS, EMPRES.

## 5: Mobilizing investment for the development of the agriculture sectors



FAO is working with funding bodies and organizations to raise the profile of the food and agriculture sectors in fora where decisions are made on financing climate change actions. FAO also has a long history of working with governments in an advisory capacity on public agricultural investment, and with national and international financial institutions to develop and deliver bankable agricultural projects.

**Supporting access to public international climate finance:** Current flows of public international climate finance do not coincide with the priorities developing countries have specified in their INDCs. Developing countries give adaptation the highest priority, but existing flows of climate finance overwhelmingly favour mitigation. Furthermore, the agriculture sectors continue to receive only a modest share of international climate finance, estimated at around USD 4 billion in 2014 (FAO, 2016). Financing flows need to reflect the importance that developing countries assign to adaptation and agriculture.

FAO helps countries to mobilize financing from the Global Environment Facility (GEF), the designated financial mechanism assisting developing countries in implementing their obligations under a number of multilateral environmental agreements and conventions. GEF provides financing for six focal areas, with two additional funds dedicated to climate change adaptation. Through two financing mechanisms operated by GEF, the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF), FAO has built a portfolio of programmes and projects that have directed over USD 600 million in support to a number of countries.

GEF has agreed to support a FAO project in Laos on two wetland sites, where the environment is threatened by the increasing demands on natural resources from local communities and the impacts of climate change. The aim of this 4-year, USD 5 million, project is to enable wetland users to adapt to climate change by adopting more sustainable management practices.

FAO is also accredited to the Green Climate Fund (GCF) to manage medium-sized projects (USD 50-250 million) and is assisting countries in utilizing the resources available through the GCF Readiness and Preparatory Support Programme.



The GCF has defined priority result areas that are in line with the mandate and work of FAO, including reducing emissions from deforestation and land use, and enhancing the resilience of people's livelihoods and food security. FAO is now scaling up country support to work with the GCF to drive transformational change in the agriculture sectors.

These multilateral funds can help countries make transformational investments in the agriculture sectors. FAO can also access funds under the Capacity Building Initiative for Transparency, a new fund dedicated to building national capacities to report against NDC targets in a manner that is consistent with the evolving rules of the Paris Agreement Enhanced Transparency Framework.

**Unlocking private sector investment:** FAO support can be vital to overcoming the barriers that inhibit private investment in sustainable, climate-smart agricultural development. The Organization's technical expertise and insights can serve to create an enabling environment that provides incentives for investment, particularly by smallholder producers. The FAO Investment Centre supports international financial institutions in shaping their investment portfolios, with much of this investment being harnessed to drive agricultural development in direct collaboration with smallholders producers. Under the Global Agenda for Sustainable Livestock, a multistakeholder partnership, FAO is collaborating on the development of investment guidance that can be used to tap into donor funding and multilateral lending schemes, such as those offered by the World Bank. For instance, the European Bank for Reconstruction and Development has supported FAO in formulating an approach for assessing the current status of sustainable climate technologies in agriculture and their future prospects.

Building on its experience working with Forest Law Enforcement, Governance and Trade (FLEGT), the Forest and Farm Facility and forest industries, FAO also is ready to support countries in encouraging the private sector – large and medium enterprises as well as smallholder producers – to engage with and invest in REDD+ activities.

**Guiding national public sector investment:** National public investment plays an important role in driving sustainable, climate-smart agricultural development. In fact, what the public sector spends on the agriculture sectors is far greater than international financial support. Consequently, national investments shape the patterns of agricultural development in most developing countries. To ensure the best possible use of existing resources, the international community should enhance developing countries' capacities to track precisely how much of their national budgets are being allocated to respond to climate change, where and how these resources are being allocated, and how effective they are in achieving their objectives.

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**The FAO publication, *Incorporating Climate Change Considerations into Agricultural Investment Programmes. A Guidance Document, and the corresponding e-learning course provide guidance to policy and decision-makers***

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Building on its vast experience in investment planning in the agriculture sectors, FAO is supporting countries to use domestic expenditures more effectively to scale up climate actions.

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