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DISCUSSION PAPER ON STRATEGY FOR FAO'S WORK ON CLIMATE CHANGE

Executive Summary

This document is a proposal for a corporate Climate Change Strategy for FAO which the committee is invited to review and discuss from its specific technical perspective.

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**Discussion paper on
STRATEGY
FOR FAO'S WORK
ON CLIMATE CHANGE**

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Executive Summary

This Strategy has been formulated to 1) guide FAO's work on climate change; 2) outline strategic choices and action priorities informed by FAO's comparative advantages (at global, regional and national levels); and 3) strengthen the impact of FAO's work on climate change.

By highlighting key vulnerabilities and challenges faced by specific agricultural sectors¹ as well as opportunities for adaptation and mitigation, on the Strategy harnesses the global political momentum for climate action to position food and agricultural systems at the centre of the global response to climate change.

FAO envisages a world in which food and agricultural systems and its dependent livelihoods have become resilient to the impacts of climate change through adaptation measures and mitigation options. FAO's approach in pursuing this vision is country driven, engages with regional and global agendas, bridges short and long-term timeframes and works across sectors. The Strategy is grounded in eight principles relating to social inclusion, environmental sustainability and results-oriented action.

FAO aims to achieving three mutually reinforcing outcomes related to climate change, adaptation and mitigation:

- Outcome 1. Enhanced capacities of Member Countries on climate change through FAO leadership as a provider of technical knowledge and expertise. Outcome 2. Improved integration of food security, agriculture, forestry and fisheries with international governance on climate change through reinforced FAO engagement.
-
- Outcome 3. Strengthened coordination, learning and delivery of FAO's work on climate change.

The successful implementation of the Strategy relies on the contribution of all FAO units at all locations, and on the active engagement of Member Countries and partners. Implementation modalities will be further expanded in an Action Plan in order to: identify roles and responsibilities; explain how existing and revised organizational capacities and structures will be leveraged; and set out key functions of the Strategy such as communication, partnerships and resource mobilization.

¹ For the purposes of this document, 'agricultural sectors' are understood to comprise, crops, livestock, fisheries and aquaculture, and forestry.

A. Introduction

While FAO strives to eliminate hunger, food insecurity and malnutrition, make agriculture, forestry and fisheries more productive and sustainable, and reduce rural poverty, climate change threatens to thwart the attainment of these global goals.

By 2050, population growth and dietary changes will increase the global demand for food by 60 percent compared to 2005/⁷. At the same time, climate change threatens to undercut and possibly reverse the progress that has been made in the fight against hunger and malnutrition in recent years. Climate change impacts – which include slow onset environmental change processes, increasing climate variability and enhanced exposure to extreme weather events – pose multiple challenges: productivity growth rates are driven downward and pressure is added to already fragile food and ecological systems. Smallholder producers and the rural poor in developing countries are particularly vulnerable to the effects of climate change and climate variability largely due largely to limited resilience and diversity in their production systems – factors that also make it more difficult to adopt practices that support improved climate change adaptation and mitigation (CCAM).

The negative impacts of climate change are felt most severely in Least Developed Countries (LDCs), Small Island Developing States (SIDS) and areas with particularly fragile ecosystems (e.g. drylands, mountains, coastal areas); the same locations where attaining FAO's global goals is already most crucial and challenging. FAO's existing efforts must therefore be expanded to also address the incremental challenges posed by climate change. At the same time, not all areas are equally negatively affected by climate change. Some areas, such as the high-latitude regions, are expected to benefit positively from the impacts of climate change, for instance through increased crop yields.

Food and agricultural systems have great adaptation potential that can bring about greater resilience in the production and supply of food while also protecting and enhancing natural resources. They also offer huge climate change mitigation potential both in the form of emission reductions and carbon sequestration in soils and biomass.

The Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC) will be implemented through Nationally Determined Contributions (NDCs³) towards climate change mitigation and adaptation put forward by each Party to the Convention. Food and agricultural systems feature prominently and will play an important role in the implementation of these national climate action plans, particularly in developing countries where the agricultural sectors contribute significantly to Gross Domestic Product (GDP) as well as livelihoods. Food value chain actors, therefore, need to be supported in order to overcome adoption barriers to implementing improved practices within these systems.

As countries gear up to meet their mitigation contributions under the Paris Agreement while also seeking to ensure food security through the adoption of adaptation, risk reduction and resilience measures, FAO is well positioned to provide high quality support to its Members.

FAO has been providing advice and technical support on matters relating to climate change since the 1980s. The 2015 *Evaluation of FAO's contribution to climate change adaptation and mitigation* (hereafter referred to as “the Evaluation”), noted that FAO has unique strengths with which to address CCAM, and advised that results could be optimized through strategic changes in the way FAO

² FAO, 2012. www.fao.org/docrep/016/ap106e/ap106e.pdf

³ Nationally Determined Contributions (NDC) = when a country has ratified the Paris Agreement, their Intended Nationally Determined Contributions (INDC) becomes the NDC unless they explicitly submit a new NDC to replace the INDC.

INDC = intended, i.e. refers to future plans. Countries submitted INDCs toward the Paris agreement.

[I]NDC = when reference is made to both INDCs and NDCs in the document.

currently works on climate change. The Organization agreed with the Evaluation's recommendation to the development of a corporate Strategy to cover all aspects of FAO's CCAM work, including climate-related Disaster Risk Reduction (DRR), and to develop a stronger political and advocacy role.

Contributing to FAO's five FAO Strategic Objectives, the Strategy takes into account the 2030 Agenda commitments for Sustainable Development and the outcomes of the 21st Conference of the Parties of the UNFCCC (COP 21). It lays out what FAO aims to achieve and how it will do so in order to best support Member Countries in confronting the climate change adaptation needs of their food and agricultural systems and dependent livelihoods while also realizing the mitigation potential of these systems.

Following consultation with the Programme Committee, the Committees on Agriculture, Fisheries, Forestry and Commodity Problems are requested to review and provide comments on the draft Strategy within their areas of mandate.

B. Context

Facts and figures

Agriculture (comprising crops, livestock, fisheries and forestry) absorb approximately 22 percent of the economic impact caused by medium and large-scale natural hazards and disasters in developing countries⁴. At the same time, the agri-food chain (including agriculture as well as food processing, distribution, retail and utilisation) consumes about 30 percent of global energy, mainly in the form of fossil fuels⁵. The Agriculture, Forestry and Land Use (AFOLU) sector accounts for 24 percent of anthropogenic GHG emissions⁶. In addition, food loss and waste is responsible for about 8% of global GHG emissions.

In the **crop sector**, there is evidence that climate change has already negatively affected wheat and maize yields in many regions and also at the global level⁷. The Intergovernmental Panel on Climate Change (IPCC) warns that decreases in crop yields of 10 to 25 percent and more may be widespread by 2050⁸. The increased frequency of warmer nights in most regions is damaging for many crops, with observed impact on rice yields and quality. The number of crop varieties has decreased dramatically during the 20th century, raising concerns for adaptive capacity, genetic vulnerability and nutritional diversity. Ecological processes which are typical in diverse cropping systems, have been replaced or suppressed by the use of external inputs. Intensive mono-cropping systems have expanded across the globe, leading to lower resilience of agro-ecosystems and livelihoods. Climate change is also expected to have a significant impact on the frequency and intensity of plant pest and disease outbreaks. For example, an increase in extreme weather events (i.e. drought spells, intense short-lived widespread rainfall, including cyclones), in addition to causing severe disruption in their own right, can lead to more frequent and intense plant pest and disease outbreaks, as was the case during the Desert Locust outbreaks in Northwest Africa and in Yemen in late 2015 and early 2016⁹.

At the same time, **soils**, the basis for plant growth, degrade and are lost at high rates. Loss of soil fertility is mostly accompanied by soil carbon losses, making soil degradation a source for carbon dioxide (CO₂) emissions. Increases in soil carbon not only stabilize soils, improve its buffer and

⁴ FAO, 2015. <http://www.fao.org/3/a-i4434e.pdf>

⁵ FAO, 2011. <http://www.fao.org/docrep/014/i2454e/i2454e00.pdf>

⁶ IPCC, 2014. http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_chapter11.pdf

⁷ Lobell D.B., Schlenker W. and Costa-Roberts J. (2011). Climate trends and global crop production since 1980, *Science*, 333(6042), 616-20

⁸ IPCC, 2014. http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap7_FINAL.pdf

⁹ FAO, 2016. <http://www.fao.org/ag/locusts/common/ecg/2293/en/DL450e.pdf>

storage function for nutrients and soil water, thus helping farmers' resilience to climate change, it also mitigates increased atmospheric CO₂. Restoration of degraded lands has the important co-benefit of potentially sequestering carbon¹⁰. This potential is enormous: around 200 million hectares (ha) could be restored by 2030, which would also mean that organic soils restored on that amount of land under different scenarios could bring additional financial resources to today's degraded lands. For example, considering scenarios between 4.4 and 70.2 tonnes of CO₂ equivalent per hectare per year (tCO₂e/ha/year) for soil carbon sequestration, this could amount to more than 6.75 GtCO₂e/year sequestered by 2030, thus contributing to mitigating the current global emission level of 36 to 40 gigatonnes per year.

Livestock, including feed crops, contributes approximately a third of GHG emissions from the AFOLU sector¹¹. However, FAO estimates that a reduction of up to 30 percent can be achieved through improved feed and stock management¹². The livestock sector experiences important negative climate impacts in animal productivity, yields of forage and feed crops, animal health and biodiversity. For example, in various Sub-Saharan African countries, 20-60 percent losses in animal numbers were recorded during serious drought events in the past three decades. In South Africa, dairy yields were predicted to decrease by 10-25 percent under certain climate change scenarios¹³. Increased temperatures and reduced precipitation have direct negative impacts on yields, and records during drought events can reveal important drops in forage production. Increased animal pest, disease and epidemic outbreaks are another likely result of climate change.

Climate change is also a compounding threat to the sustainability of **capture fisheries and aquaculture** development in marine and freshwater environments as it exacerbates issues already faced by the sector such as overfishing, pollution and disease, as well as the natural variability within the aquatic systems, impacting both local access to food and globally traded fisheries products. Impacts occur as a result of both gradual atmospheric warming and associated physical and chemical changes of the aquatic environment¹⁴. Extreme events such as deep sea ocean swells, particularly high temperatures, and cyclones can affect the ability of ecosystems such as coral reefs and mangroves to provide services crucial for livelihoods and food security. Climate change and carbon absorption in the aquatic systems are and will continue to manifest changes in the aquatic systems through rising water temperatures, increased thermal stratification, changes in salinity and freshwater content, changes in oxygen concentrations, and ocean acidification. One scenario projects a decrease in landed fish value of 21 percent and a total annual loss of USD 311 million by 2050 over 2000 values, and a significant loss in fisheries-related jobs of almost 50 percent in 14 West African countries¹⁵. Overall, rising temperatures are predicted to reduce catches of main fish species by 40 percent by 2050¹⁶. The primary potential for GHG reduction in the fisheries and aquaculture sector has been associated with reducing fuel and energy use either through direct or indirect action.

Although **forest ecosystems** are inherently dynamic, the speed of predicted climate change is likely to far exceed the natural capacity of many forest species and ecosystems to adapt. Climate change constitutes a direct threat to forest ecosystems, forest-dependent peoples and society as a whole through reduced delivery of products and forest ecosystem services. Reduced forest productivity, forest dieback, increased pest and disease outbreaks, increased wildfire incidence or severity and loss of forest biodiversity in various global locations are evidence of climate change impacts. Forest

¹⁰ IPCC, 2014. www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_chapter11.pdf

¹¹ FAOSTAT and FAO, 2013. <http://www.fao.org/docrep/018/i3437e/i3437e.pdf>

¹² FAO, 2013. <http://www.fao.org/3/i3437e.pdf>

¹³ IPCC, 2014. http://ipcc-wg2.gov/AR5/images/uploads/WGIIAR5-PartB_FINAL.pdf

¹⁴ IPCC, 2013. www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf

¹⁵ Lam V.W.Y., Cheung W.W.L., Swartz W., and Sumaila U.R., 2012. Climate change impacts on fisheries in West Africa: implications for economic, food and nutritional security. *African Journal of Marine Science*, 34(1), 103-117

¹⁶ IPCC, 2014. http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap7_FINAL.pdf

degradation, reduced availability of forest products and impaired forest ecosystem services, such as regulation of water supply and erosion, affect the wellbeing of local forest-dependent communities as well as water supplies and food production in downstream areas. Climate impacts on forests affect food security by reducing forest foods, forest-employment and income, environmental sustainability and availability of fuelwood needed for food production. Adaptation measures in the forest sector are therefore crucial for food security as well as poverty alleviation. Forests as important carbon stocks, sinks and sources, are crucial to the global carbon balance. Deforestation and forest degradation contribute an estimated 10-11 percent of global greenhouse gas emissions. On the other hand, afforestation and reforestation, forest restoration and agroforestry development have significant mitigation potential, which can also provide adaptation benefits. Climate change actions in forestry will need to optimize mitigation and adaptation benefits and consider these options in light of forest management objectives.

Climate change is projected to significantly reduce renewable **surface water and groundwater resources** with particular intensity in most dry subtropical regions. For each degree increase in global surface temperature, approximately 7 percent of the global population is projected to be exposed to a minimum of 20 percent decrease of renewable water resources¹⁷. Agriculture is now responsible for approximately 70 percent of the global water withdrawals. With the impacts of climate change, many regions are likely to face substantial water scarcity. If not dealt with properly and in a timely manner, water shortages will result in increasing competition between water users, which may constrain agricultural production, affect food security, incomes and livelihoods. Adjusting the agricultural sector to less water availability is crucial to ensure food security into the future.

Post-harvest stages consume over 70 percent of the energy and emit about 30 percent of GHGs of total agri-food chains (excluding those from land use change)¹⁸. Food loss and waste also significantly contribute to GHG emissions¹⁹. Improved energy efficiency along the length of the agri-food chain and the deployment of renewable energy systems to displace fossil fuels and to provide access to modern energy, especially in post-harvest or post-capture activities can reduce emissions. Increased access to modern energy and technologies facilitates increased food productivity (on and off-farm), hence reducing the emission intensity per unit of food produced.

Climate change directly affects the food security and **nutrition** of millions of people, undermining current efforts to address undernutrition and hitting the poorest the hardest, especially women and children. It is seen as a significant “hunger-risk multiplier” for which some forecasts anticipate 24 million additional malnourished children by 2050 – almost half of them living in sub-Saharan Africa²⁰. Climate change impacts people’s livelihoods and lifestyles through different pathways. Farmers, pastoralists, forest dwellers and fisherfolk are already facing more challenges in producing and gathering food due to changing weather patterns, such as erratic rains. In the short term, the impacts can be linked to extreme weather events which contribute to casualties, household food insecurity, disease and handicap, increased population dislocation and insecurity. In the longer term, climate change affects natural resources and therefore food availability and access, but also environmental health and access to health care. A 2016 model projects that by 2050, climate change will reduce per capita food availability by over three percent, fruit and vegetable consumption will decline by four percent and the consumption of red meat will fall slightly²¹. In the most affected areas, these long-term impacts eventually can lead to transitory or permanent migration, which often leaves female-headed households behind.

¹⁷ IPCC, 2014. http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap3_FINAL.pdf

¹⁸ FAO, 2011. <http://www.fao.org/docrep/014/i2454e/i2454e00.pdf>

¹⁹ FAO, 2015. <http://www.fao.org/3/a-bb144e.pdf>

²⁰ IFPRI, 2009. Food policy report “Climate Change: Impact on agriculture and costs of adaptation.”

<http://www.ifpri.org/publication/climate-change-impact-agriculture-and-costs-adaptation>

²¹ Springmann M., Mason-D’Croz D., Robinson S., Garnett T., Godfray H.C. J., Gollin D.; Rayner M.; Ballon P., and Scarborough P., 2016. Global and regional health effects of future food production under climate change: A modelling study. *The Lancet*.

Political momentum

2015 marked a turning point for international decision-making on climate change and sustainable development. By launching and committing to the 2030 Agenda on Sustainable Development and the 17 Sustainable Development Goals (SDGs), and, the international community has paved a trajectory towards a hunger-free, more equitable and more sustainable world. In July 2015, the Addis Ababa Action Agenda was adopted at the Third International Conference on Financing for Development, outlining both financial and non-financial means of implementation for the achievement of Agenda 2030 and the SDGs. In December 2015, the landmark Paris Agreement was adopted by the 195 nations that are party to the UNFCCC, reinforcing the commitment to sustainable development with regard to climate action.

The Preamble to the COP21 Agreement recognizes "the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse effects of climate change". By embracing the more inclusive concept of "food security", the Paris Agreement strengthens the language under the Framework Convention itself, which refers only to the need to ensure that "food production is not threatened" by climate change.

The Intended Nationally Determined Contributions²² (INDCs) are an expression of national commitment towards the implementation of the Paris Agreement. Out of the 188 countries who had submitted INDCs as at 31 March 2016, 94 percent of all countries (130 countries) include agriculture as a sector in their mitigation and/or adaptation contributions²³. Agriculture and land use, land use change and forestry (LULUCF) are among the most referenced sectors in countries' mitigation contributions (as targets and/or actions). LULUCF is referenced in 77 percent of all countries' INDCs, and as such is second only to the energy sector. 94 percent of developing countries included an adaptation section. Of these 130 countries, 95 percent refer to crops and livestock, while 83 percent refer to forests and 46 percent refer to fisheries and aquaculture. 31 countries, including 40 percent of LDCs, specifically refer to climate-smart agriculture (CSA) in their INDCs. In short: international support for climate action in the agricultural sectors is clear.

Climate change has never been more prominent in the global agenda. However, considering the sensitivity of food and agricultural systems to climate change and its vital role in food security and livelihoods, the agricultural sectors still lack the high-level attention required to realize their full potential in providing food security, eliminating poverty and maintaining resilient ecosystems under a changing climate. Besides, the bulk of the available climate funds has been primarily earmarked to other sectors, translating into a loss of investments targeted at agriculture. In 2014, 8 percent of total spending (USD 28.345 billion) by Multilateral Development Banks on climate change adaptation and mitigation related investments went on agriculture and ecological resources²⁴. The profile of the agricultural sectors must be further raised in the climate change policy debate in order to ensure proper recognition of both their roles and potentials in addressing climate change as well as to secure appropriate resource mobilization.

²² INDC portal: <http://www4.unfccc.int/submissions/indc/Submission%20Pages/submissions.aspx>

²³ FAO, forthcoming. *The agriculture sectors in the Intended Nationally Determined Contributions: Summary*

²⁴ 2014 Joint Report on Multilateral Development Banks' Climate Finance:

<http://www.worldbank.org/content/dam/Worldbank/document/Climate/mdb-climate-finance-2014-joint-report-061615.pdf>

Climate change work at FAO

FAO's portfolio on climate change has grown exponentially since its beginnings in the 1980s. Sectorial work programmes or strategies addressing climate change perspectives were defined by forestry (2010)²⁵, crops (2011)²⁶, fisheries (2012)²⁷ and livestock (2013)²⁸. In 2010, FAO launched the concept of climate-smart agriculture (CSA), an approach designed to help develop the technical, policy and investment conditions to achieve sustainable agricultural development for food security under climate change²⁹. CSA was also conceived to address the lack of attention to agricultural sectors in the international climate agenda. In 2011, FAO provided a more extensive framework for climate change adaptation: FAO-Adapt³⁰. In the wake of the Rio+20 Conference in 2012, climate change featured as one of FAO's 14 themes framing the Organization's engagement in the Post-2015 Development Agenda negotiations.

Between 2009 and 2014, FAO had a portfolio of 301 projects and programmes which, according to their objectives, explicitly sought to support CCAM. In 2014, FAO developed a *Vision for Sustainable Food and Agriculture (SFA)*, supporting Strategic Objective 2 to "Make agriculture, forestry and fisheries more productive and more sustainable"³¹. CSA was identified as one of the 11 Corporate Areas for Resource Mobilization under FAO's Strategic Objectives.

In 2015, climate change was adopted as a cross cutting theme of FAO's Strategic Framework. The Climate Change Strategy will focus FAO's climate change work on its Strategic Objectives, also ensuring consistency and compliance with FAO's standards, guidance and best practices, as well as those of its strategic partners.

C. FAO's vision and approach to climate change

Vision

FAO's vision is that of 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.

In this context, FAO envisions a world in which food and agricultural systems and dependent livelihoods are resilient to the impacts of climate change through both adaptation measures and mitigation options. FAO will: 1) promote adequate consideration of food security and the roles of the agricultural sectors in global climate policy; and 2) assist countries to transition towards food and agricultural systems and livelihoods that are better adapted and more resilient to the impacts of climate change and that contribute to global efforts to keep warming within 1.5-2 degrees Celsius.

Approach

²⁵ FAO, 2010. <http://www.fao.org/docrep/017/i2906e/i2906e00.pdf>;
<http://www.fao.org/docrep/018/i3383e/i3383e00.htm>

²⁶ FAO, 2011. <http://www.fao.org/3/a-i2242e.pdf>

²⁷ FAO, 2012.

ftp://ftp.fao.org/fi/brochure/climate_change/stragegy_fi_aq_climate/2011/climate_change_2011.pdf

²⁸ FAO, 2014. <http://www.fao.org/3/i3437e.pdf>

²⁹ FAO, 2010. <http://www.fao.org/climate-smart-agriculture/en/>

³⁰ FAO, 2011. <http://www.fao.org/climatechange/27594-03ecd7bd225b93086e7dca3944de64307.pdf>

³¹ FAO, 2014. <http://www.fao.org/sustainability/en/>

Climate change links with the full spectrum of FAO's work on hunger and malnutrition, sustainability, poverty, agricultural and food systems, and resilience across all agricultural sectors and natural resources. FAO employs its core functions – norms and standard-setting, data and information, policy dialogue, capacity development, knowledge and technologies, partnerships, and advocacy and communication – in efforts to address climate challenges. Collaborations with partners that include Members, development partners, financing institutions, research and academic institutions, the private sector and civil society will be leveraged in order to implement the Strategy.

FAO's approach to climate work is country-driven, engages with regional and global agendas, bridges short and long-term timeframes, is climate-smart and works across sectors and stakeholder groups. It adheres to FAO's principles for Sustainable Food and Agriculture and serves to enhance the climate perspectives of FAO's existing social and environmental policies.

Country-driven

FAO's approach will be in line with development effectiveness principles anchored in country ownership, leadership, commitment and mutual accountability.

FAO supports countries in strengthening their institutional and technical capacities for climate change adaptation and mitigation in the agricultural sectors. National policies and strategies on climate change need to reflect and include the adaptation needs and mitigation potential of food and agricultural systems, and vice versa, planning in the agriculture, forestry and fisheries sectors need to take into account climate perspectives.

Implementation of food, agriculture and climate sensitive policies and strategies will be supported with guidance, data, tools and technologies based on demonstrated best practices and proven experience among Member Countries. FAO will also support national engagement with regional and international climate governance processes and climate finance opportunities.

In to the context of Country Programming Frameworks (CPFs), FAO's work on climate change will be guided by the countries own [Intended] Nationally Determined Contributions³², which define, at the highest political level, targets and strategies for responding to the consequences and addressing the causes of climate change, and by national policies and strategies in the agricultural sectors.

Productivity increases, adaptation and mitigation will be pursued to the extent possible, with context specific interventions (see 'climate-smart'). In some cases, policy and action, such as the mobilization of social safety nets, will be required in acknowledgement that the adverse impacts of climate change on communities and livelihoods may be irretrievable.

FAO's primary focus lies in supporting developing countries, in particular the most vulnerable, including Least Developed Countries (LDCs) and Small Island Developing States (SIDS). Nevertheless, FAO's normative and advocacy work is also of relevance to developed nations, for example as regards mitigation opportunities or consumer behaviour.

Regional

Country-level actions take place in the context of regional priorities and the global climate and sustainable development agenda. Many issues that affect food and agricultural systems are transboundary in nature. These include climate change itself, and issues affected by climate change such as water availability, pests and diseases and extreme climatic events. Addressing environmental factors such as agroecological conditions and social factors such as diet, benefit from a regional perspective. FAO will intensify its efforts to foster regional collaboration, facilitate the exchange of experiences and lessons, as well as the access to resources and technical capacity; and will thus realize economies of scale through undertaking regional activities.

³² NDC registry: http://unfccc.int/focus/ndc_registry/items/9433.php

Global

Climate change is a global issue requiring a global response. FAO advocates on behalf of food security and nutrition as well as environmental, social and economic sustainability for farmers, pastoralists, fishers, foresters and other rural dwellers at the global level. Within the broad, diverse and multi-sectorial international debate on climate change, FAO will intensify its work within the UN system, among Multilateral Financing Institutions, with development partners and partners in the private and civil society sectors to ensure that food and agricultural systems are featured as a global priority within the climate agenda.

Short- and long-term

Disaster Risk Reduction is significantly more cost effective than post disaster response. Addressing the root causes of risks and increasing the resilience of livelihoods and food systems to lessen the impacts of natural and man-made disasters can also introduce effective adaptation measures with co-benefits for climate change mitigation. FAO's work on climate therefore spans support for and lessons learned from disaster risk reduction and emergency response to current hazards and support for long-term climate change adaptation and mitigation efforts.

Climate-smart

The climate-smart agriculture (CSA) approach is designed to help develop the technical, policy and investment conditions to achieve sustainable agricultural development for food security under climate change. Climate-smart interventions pursue synergies across three main objectives, aiming to: (a) sustainably increase agricultural productivity and incomes; (b) adapt and build resilience to climate change; and (c) reduce and/or remove greenhouse gas emissions, where possible. CSA is not a set of practices that can be universally applied, but instead offers a range of options and considerations to help practitioners and decision-makers to identify context-appropriate solutions that maximize benefits across all three objectives.

Depending on the context and scale of the intervention, trade-offs between these objectives of CSA may be necessary and are managed explicitly. Climate-smart interventions also address barriers to adoption, by considering what kind of enabling environment would support the success of the intervention. For instance, well-designed incentives can help integrate diverse objectives from multiple stakeholders to work together towards mutually beneficial goals. Climate-smart solutions combine strategic, policy, investment, institutional and technical options to achieve the best outcome possible in a specific context.

Cross-sectorial and multi-stakeholder

FAO promotes and supports integrated landscape and value chain approaches, identifying the optimal interventions which address climate change adaptation and mitigation challenges while also taking into consideration other social, economic and environmental constraints and opportunities within the landscape and through entire value chains. At the same time, FAO works across agricultural and natural resources sectors and promotes cross-sectorial approaches with the understanding that different food and agricultural systems face different constraints, offer different opportunities and may impact upon each other. Engagement with other sectors, such as energy, health and transport can add value to CCAM action in all sectors. This requires working with multiple stakeholders from public and private sectors and civil society, at appropriate levels (local to global).

D. Guiding principles

The Strategy aims to facilitate the transition of food and agricultural systems and dependent livelihoods to become more resilient to climate change. It is founded on the following principles of social inclusion and environmental sustainability:

Give precedence to food security, poverty reduction and sustainability

Climate change undermines food security, nutrition, poverty reduction and sustainability in many contexts, and creates opportunities for improvement in others. Dealing with climate change does not replace actions building on FAO's core functions but is incremental to them, and is essential to ensure their sustainability.

Support policy integration and mainstreaming

FAO promotes both the integration of CCAM into policies and strategies relating to the food and agricultural sectors as well as the integration of food and agricultural sector considerations into climate-related policies. Such policy harmonization lays a strong foundation for cohesive action, and is proven to be more effective than stand-alone solutions.

Prioritize the most vulnerable

With limited resources, planning focuses on identifying and acting to protect and enhance support in particular to those livelihoods, communities and systems that are most vulnerable to the adverse impacts of climate change.

Leave no one behind

Through its long experience in people-centered work on agriculture, rural development and climate change, FAO recognizes that CCAM work requires participatory and inclusive modalities in order to ensure that everyone can benefit, and that no one is left behind. Consequently, FAO considers gender-specific vulnerabilities, needs and capabilities with regard to climate change; the vulnerabilities, needs and capabilities of indigenous people; as well as other vulnerable communities, including communities living in fragile environments such as drylands, mountain areas or coastal zones. FAO's Climate Change Strategy is implemented in the context of FAO's Policy on Gender (2013)³³ and FAO's Policy on Indigenous and Tribal Peoples (2010)³⁴.

Learn from experience

Knowledge management, strategic partnerships, South-South cooperation and other mechanisms are optimized to share experiences and learn lessons as well as to identify gaps that FAO and its partners can fill. The Strategy is guided by FAO's existing relevant Strategies, in particular on Capacity Development (2010)³⁵ and Partnerships (2012)³⁶.

Promote evidence-based, scientific approaches

Interventions supported by FAO are always built upon evidence-based science. Where uncertainties remain, scenarios to support informed decision-making are provided.

Promote ecosystem-based approaches

³³ FAO, 2013. <http://www.fao.org/docrep/017/i3205e/i3205e.pdf>

³⁴ FAO, 2010. http://www.fao.org/fileadmin/user_upload/newsroom/docs/FAO_policy.pdf

³⁵ FAO, 2010. <http://www.fao.org/docrep/meeting/019/k8908e.pdf>

³⁶ FAO, 2012. http://www.fao.org/fileadmin/user_upload/corp_partnership/docs/stratbrochure_en_web.pdf

Ecosystems provide valuable services that help to build resilience and reduce the vulnerability of people and their livelihoods to climate change impacts. Integrating the protection of biodiversity and ecosystem services into adaptation strategies increases the resilience of human and natural systems to climate and non-climate risks, providing benefits to society and the environment.

Lead by example

Interventions embody the principles they seek to convey. FAO demonstrates its commitment having integrated CCAM considerations into its programming and project cycle. In addition, the Organization is committed to a sustainable future by continuing to reduce the environmental impact of FAO's own operations under its Corporate Environmental Responsibility Policy, interlinked to the UN Greening the Blue initiative³⁷. Efficiency in construction projects and in FAO offices, smart travel, and sustainable procurement practices are important ways in which the Organization increasingly supports itself and its partners in the quest for green development.

E. Expected outcomes

The Strategy aims to achieve the following overarching outcomes:

- *Outcome 1. Enhanced capacities of Member Countries on climate change through FAO leadership as a provider of technical knowledge and expertise. Outcome 2. Improved integration of food security and nutrition, agriculture, forestry and fisheries considerations in international governance on climate change through reinforced FAO engagement.*
-
- *Outcome 3. Strengthened coordination, learning and delivery of FAO's work on climate change.*

Outcome 1. Enhanced capacities of Member Countries on climate change through FAO leadership as a provider of technical knowledge and expertise.

Each of FAO's core functions serves to assist Member Countries in facing the climate challenge. Support provided will be scaled up as follows.

In **norm establishment and standard-setting**, FAO will ensure that climate change perspectives are taken into account and emphasized so that countries can adopt common and integrated approaches while also maximizing the CCAM potential of all aspects of food production and use. Codes of practice, guidelines and other documents that support the effective implementation of agreed norms and standards will similarly include relevant aspects of CCAM.

FAO will support the strengthening of institutional capacities to generate, collect and use disaggregated **data and information** of relevance to CCAM, for example on weather, yields (levels and stability) and losses resulting from climate related events, as well as on greenhouse gas emissions (current levels and potentials under improved scenarios), soil carbon and water availability. FAO will also continue to collect and publish relevant data that support evidence based decision-making and planning. Tools and services that use national data, for example, for vulnerability assessments and climate information services, will continue to be provided and enhanced by FAO, with a greater emphasis on CCAM in food and agricultural systems.

In accordance with its mandate, FAO provides a neutral forum for **policy dialogue**, which offers opportunities to address emerging issues relating to climate change. FAO's corporate and regional

³⁷ <http://www.greeningtheblue.org/>

governing bodies and dedicated issue-based fora can help to advance understanding and adoption of best CCAM practices among Member Countries.

At national level, FAO will support countries in national processes that feed into political and strategic dialogues and investment strategies at regional and international level. National processes to develop implementation plans for NDCs are an important example. To this end, FAO will assist in improving communication and coordination among Ministries of Agriculture, Fisheries, Forestry and Food (that are often marginalized in national engagement with climate change dialogue and climate finance processes), with Ministries of Environment, Energy, Industry, Finance and other institutions that generally lead these processes. The relevance to food security and social, economic and environmental sustainability, as well as the important adaptation and mitigation potential of food and agricultural systems, will be emphasized.

The delivery of FAO's **knowledge and technologies** to Members is primarily achieved through implementation support coupled with **capacity development** activities. Technologies, practices and processes that support climate-smart approaches to food and agricultural production and utilization will continue to be developed, monitored and disseminated when shown to be successful. In collaboration with practitioners, research organizations, the private sector and civil society, FAO will maximize efforts in this area. For proven technologies and approaches, FAO will work with governments and financing partners to scale up delivery.

In particular, FAO will scale up its work to enhance countries' capacities to effectively integrate food security and agricultural considerations into national and regional policies, strategies, programmes on climate change adaptation and mitigation (in particular [I]NDCs, National Adaptation Plans (NAPs), Nationally Appropriate Mitigation Actions (NAMAs) and the implementation of the Sendai Framework for Disaster Risk Reduction. In turn, FAO will increase its assistance to countries in integrating climate change considerations into national and regional agriculture, forestry and fisheries policies, strategies and programmes. Equally, national climate priorities will inform FAO's Country Programme Frameworks to target resources and action most effectively. Collaboration and capacity development with key partners will help ensure effective and more sustainable implementation.

FAO will also provide systematic support to facilitate country access to financing for the food and agricultural sectors by improving access to international and climate finance, providing assistance for drafting investment programmes and supporting countries in making their domestic investments more climate-smart. The upscale of sustainable climate change and energy technology markets are paramount in making the food and agricultural sectors more sustainable, enabling the production of more with less, while maximizing co-benefits. FAO aims to mobilize investments in these markets, providing technical support to governments and International Financial Institutions (IFIs), and sharing best practices on successful delivery and business models. Linking investment strategies and policy processes will enable the large-scale transformational changes that effective CCAM requires.

Ensuring comprehensive CCAM throughout all food and agricultural systems, in the context of supporting food and nutrition security, sustainable intensification of production, social equity, economic viability and resilience, is a task beyond the capacity of FAO alone. Therefore, FAO will forge appropriate partnerships to synergize, complement and leverage the financial, human, natural and technical resources needed to achieve the task.

Advocacy and communication are core components of the work on climate change, building awareness and engagement among all stakeholders, from political leaders to consumers and food and agricultural workers, all of whom make important contributions to CCAM efforts.

There is an imminent need to promote and upscale good practices in order to build local resilience and support countries in strengthening coherence between climate change adaptation (both to slow onset and extreme events) and Disaster Risk Reduction (DRR) approaches, as well as exploring opportunities for mitigation, in line with countries' policy goals and national commitments. The

promotion upstream of adaptive and preventive approaches as a cost effective way to deal with the significant impacts of climate-triggered extreme events will also be crucial.

Outcome 2. Improved integration of food security and nutrition, agriculture, forestry and fisheries considerations in international governance on climate change through reinforced FAO engagement.

FAO's core functions of evidence-based advocacy and communication, policy dialogue and partnerships will be mobilized to the profile of the agricultural sectors in international climate governance.

Advocacy and communication

FAO's engagement in the international fora addressing climate change has increased in recent years and will be further scaled up to promote the perspectives of food security and nutrition, agriculture, forestry and fisheries, rural livelihoods and natural resource management and conservation. These fora include the UNFCCC, the SDGs and the Addis Ababa Action Agenda in the context of Agenda 2030; the UNFCCC's sibling conventions, the UNCCD and CBD; the Sendai Framework for Disaster Risk Reduction; and the World Humanitarian Summit process, among others.

At the global scale, FAO will also advocate for the urgent need to tackle climate change and strengthen social protection systems in order to reduce vulnerability to climate change and alleviate poverty. The role of climate change in triggering or exacerbating conflict, migration and social instability through pressures on food and agricultural systems and rural communities will be explored. FAO will extend its engagement to fora that do not traditionally deal with the agricultural sectors.

In this regard, it will be vital to widely communicate the **data and information** resources and **knowledge and technologies** on CCAM that FAO has to offer, including global goods such as data on food insecurity around the world, or global GHG databases on agriculture and land use.

Policy dialogue

Contributing to these global processes, FAO will act through its networks of decentralized offices to assist national and regional engagement with climate related governance processes with a view to highlighting the important adaptation needs and mitigating potential of the agricultural sectors. In doing so, at national, regional and global levels, FAO will work to link the food and agricultural sectors with those that are primarily dealing with climate change, including environment, energy, industry, transport, economic development/planning and investment, as well as those with consequential interests such as health, social, labor, education, defense and others.

Partnerships

Partnerships extend and augment FAO's own knowledge and expertise and its capacity to deliver these in countries and regions. The realization of this Strategy will be strengthened through partnerships with and between key actors in the international climate and development process including UN System, public, private, research and civil society organizations.

In particular, directing climate finance to food and agricultural systems will help to meet their adaptation needs and realize their mitigation potential. At the international level, FAO partners with funding bodies, including with the Green Climate Fund (GCF), Global Environment Facility (GEF), regional development banks, multilateral and bilateral development partners, the private sector, as well as other innovative financing opportunities, to promote a higher profiling of food and the agricultural sectors in financing decisions.

Outcome 3. Strengthened coordination, learning and delivery of FAO's work on climate change.

To support the successful delivery of Outcomes 1 and 2, FAO will enhance and streamline its own delivery on climate change, contributing to achieving FAO's Strategic Objectives.

FAO will clarify the roles of internal mechanisms for coordination, knowledge development and management, technical innovation and delivery, and will strengthen these where necessary. The Strategy will be backed by an extensive and continuing learning programme to ensure good understanding of what FAO can offer to countries on CCAM in food and agricultural systems and how this support can be delivered most effectively. The learning will be targeted particularly to those working directly with national counterparts.

The Implementation Section of this Strategy positions FAO to achieve Outcome 3, thereby enabling it to deliver the support described under Outcomes 1 and 2.

F. Implementation of the Climate Change Strategy

The successful implementation of the Strategy for FAO's work on climate change relies on the contribution of all FAO units at all locations to its Strategic Programmes, and on the active engagement of Member Countries and partners. Implementation modalities will be further expanded in an Action Plan, in order to identify roles and responsibilities, explain how organizational capacities and structures will be leveraged, and set out key functions of the Strategy.

Programming for climate change

At organization-wide level, the Strategic Framework serves to enable structured and inclusive planning, from country to global level. As a cross-cutting theme under the Strategic Framework, the appropriate reflection of climate implications and opportunities will be reflected in each Strategic Programme at the regional and country level.

At country level, FAO works in partnership with its host country through jointly agreed Country Programming Frameworks (CPF). In the next cycle of CPF preparation, FAO will encourage national partners to seek coherence with NDCs and ensure that their climate priorities on climate are well-reflected and integrated into sectorial policies and strategies.

Sharing knowledge and fostering learning

In a field as rapidly developing and diverse as climate change, access to the latest data and knowledge as well as opportunities for continuous learning are vital. FAO will scale up learning on CCAM. Strengthening the capacities of FAO's country, subregional, and regional and liaison offices will enable them to effectively engage with relevant climate change processes and stakeholders. Strengthened coordination and increased learning within FAO will ensure the delivery of high-quality support to Member Countries. The Technical Network on Climate Change will serve to share knowledge and the delivery of learning for individuals, units and the institution as a whole.

Communicating our objectives and achievements

Raising awareness about the objectives of FAO's Climate Change Strategy will be important both within and outside of FAO. Internal communications will support the FAO staff actively engaged in implementing the Strategy, and will promote understanding of the Organization's enhanced role on climate change and its operational implications. External communication regarding FAO's vision for climate change and achievements in climate work in the context of FAO's Strategic Objectives will

become an integral part of the Organization's corporate communication activities with Member Countries, the international community and the general public.

Maximizing our impact through strategic partnerships

FAO will establish and strengthen strategic partnerships with the public and private sectors to extend and complement its delivery capacity and further enhance the quality of work conducted. Civil Society Organizations and Producer Organizations provide valuable ground-level perspectives and enhance representativeness and legitimacy of processes and initiatives related to peoples' livelihoods. Partnerships with investment institutions will be mutually beneficial, allowing FAO to bring its tools, data and technical expertise to bear in a wider network of programmes, as well as enhancing opportunities for resource mobilization. Partnerships with academia and research institutions mobilize knowledge, innovations and expertise and share FAO knowledge, information and on the ground experience. Collaboration with the private sector – including local smallholders, producers and processors – will bring expertise in enhancing value chains and potential investment to augment public finance.

Measuring our progress

FAO's results-based Strategic Framework provides the means for structured and inclusive planning, monitoring and measuring the impact of climate change work, contributing to agreed outcomes as measured by targets and indicators. FAO's climate change activities are critical to achieving specific results in the Medium Term Plan that contribute directly and indirectly to fighting poverty and defeating hunger. Relevant indicators both from FAO Strategic Framework as well as the 17 Sustainable Development Goals will be tracked and analysed to help measure the achievement of this Strategy's objectives.

Action Plan

Implementation modalities will be further expanded in an Action Plan, in order to identify roles and responsibilities, explain how existing and revised organizational capacities and structures will be leveraged, and set out key functions of the Strategy such as communication, partnerships and resource mobilization.

List of abbreviations

AFOLU: Agriculture, Forestry and Land Use

Agenda 2030: 2030 Agenda for Sustainable Development

CBD: Convention on Biological Diversity

CCAM: Climate Change Adaptation and Mitigation

CO₂: Carbon Dioxide

COP21: 21st Conference of the Parties of the UNFCCC

CPFs: Country Programming Frameworks

CSA: Climate-Smart Agriculture

DRR: Disaster Risk Reduction

FAO: Food and Agriculture Organization of the United Nations

GCF: Green Climate Fund

GDP: Gross Domestic Product

GEF: Global Environment Facility

GHG: Greenhouse Gas

ha: Hectares

IDWG CC: Inter Departmental Working Group on Climate Change

IFIs: International Financial Institutions

[I]NDCs: [Intended] Nationally Determined Contributions

IPCC: Intergovernmental Panel on Climate Change

LDCs: Least Developed Countries

LLDCs: Landlocked Developing Countries

LULUCF: Land Use, Land Use Change and Forestry

NAMAs: Nationally Appropriate Mitigation Actions

NAPs: National Adaptation Plans

NDC: Nationally Determined Contributions

NRC: FAO's Climate and Environment Division

PWB: Programme of Work and Budget

SDGs: Sustainable Development Goals

SFM: Sustainable Forest Management

SIDS: Small Island Developing States

TNCC: Technical Network on Climate Change

tCo2e/ha/year: Tonnes of carbon dioxide equivalent per hectare per year

UN: United Nations

UNCCD: United Nations Convention to Combat Desertification

UNFCCC: United Nations Framework Convention on Climate Change