



## **FAO and Climate**

### **Introduction**

The involvement of FAO in climate-related work covers both the short-term fluctuations (**climate variability**) and the longer-term aspects (**climate change**). The first issue has a number of immediate operational implications, while the second is more closely related to environmental and policy issues. For this reason, this section presents an overview of FAO activities in the broad field of climate by providing an account of the Organization's early and current interest in climate-related matters.

### **Role of FAO**

Climate change will directly affect future food availability, access, stability, and utilization. FAO therefore attaches increasing importance to the impacts of climate change on agriculture, forestry and fisheries, and on mitigation and adaptation measures.

In the area of climate change, FAO contributes to the debate by assessing the available scientific evidence, participating in observing and monitoring systems, collecting unique global datasets and by providing a neutral forum for negotiations and technical discussions.

FAO's role is to assist Members, in particular developing countries, which are vulnerable to climate change, to enhance their capacities to confront the negative impacts of climate change on agriculture, forests and fishery products. In order to make best use of synergies, FAO collaborates on technical matters with the secretariat and subsidiary bodies of the United Nations Framework Convention on Climate Change (UNFCCC), the Intergovernmental Panel on Climate Change (IPCC), sister agencies such as the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP), the Secretariats and subsidiary bodies of the Convention on Biodiversity (CBD) and the Convention to Combat Desertification (CCD), as well as regional organizations.

The approach taken by FAO emphasizes that variation in climate is one of the main determinants of agricultural production in developing and developed countries and uncertainty makes planning for climate change difficult and FAO has adopted a "no regrets" approach, emphasizing measures that should be taken in any case - even in the absence of climate change - because they improve the efficiency of present farming. At the same time, they put farmers in a better position to adapt to or mitigate climate change, should it occur.

Biomass energy has been recognized as an important alternative to fossil fuels, giving agriculture and forestry a double role to play: as an energy consumer (food chain requirements) and as an energy producer. Their role in carbon sequestration is very substantial.

FAO's role in relation to climate change has gradually advanced from that of advising countries on possible climate change impacts, to an active performance in mobilizing the double role of forestry and agriculture mentioned above as a way of reducing climate change itself. FAO main role is:

- (i) to help its member countries reduce their vulnerability to climate change;
- (ii) to improve their capacity for reducing greenhouse gas emissions related to agriculture;
- (iii) to promote the use of more efficient energy technologies and a move towards renewable energy sources, especially biomass;
- (iv) to ensure the reliability of climate change impact scenarios and to disseminate information on climate change-related risks;
- (v) to assist members countries in fulfilling their international obligations under climate-related conventions and protocols and in utilizing the investment mechanisms arising from them.

### **FAO involvement in climate activities**

FAO has a long history of involvement with climate related problems; in 1960, through the first formal agreement with WMO, the **Interagency Agro-climatology Project** was created to promote agro-climatological studies in areas where large agricultural developments were anticipated. Several detailed regional studies on climate-agriculture interactions resulted from this joint project.

In 1968, FAO, WMO and UNESCO (United Nations Educational, Scientific and Cultural Organization) established the **Interagency Group on Agricultural Biometeorology**, joined in 1972 by UNEP. The FAO component of this group was then absorbed into the Organization's Normative Programme to constitute the current Agro-meteorology Group within the Environment and Natural Resources Service (SDRN).

After the 1972 Stockholm Conference on the Human Environment and the 1974 World Food Conference, FAO launched two activities with a major climate component: the **Agro-Ecological Zones Project** (AEZ) coordinated by the Land and Water Development Division to estimate the food production potential of developing countries, and the **Global Information and Early Warning System on Food and Agriculture** to continuously monitor the crop prospects and food situation throughout the world and alert the international community of impending serious food shortages. Both have led to the development of climate databases and methods for assessing the impact of climate on agriculture (SDRN), for planning (Land and Water Development Division, AGL), and for monitoring purposes (Commodities and Trade Division, ESC).

In February 1979, the First World Climate Conference recognized climate change as a major challenge and led to the establishment, within WMO, of the World Climate Programme (WCP) to support research on climate change.

Since then, collaboration with other agencies has been a constant in FAO's participation in climate-related activities, such as the WCP and the IPCC which was established in 1988. FAO has participated regularly in the activities of the WMO **Commission for Agricultural**

**Meteorology** (CAgM). FAO has also organized and participated in international fora, conferences, reports with climate change and sustainable development as core issues.

In February 1988, a technical group was established, the *ad hoc* **Interdepartmental Working Group (IDWG) on Climate Change and Variability in Relation to Food Security**, which constituted the first direct involvement of FAO with climate change to review the available evidence, provide an assessment of possible impacts on world agriculture and food production and to develop the position of the Organization and to participate in the international discussions, particularly after the adoption of UNFCCC in 1992 and the Kyoto Protocol in 1997. The FAO IDWG on Climate Change and Variability in Relation to Food Security ensured the cross-sectoral coordination and implementation of the FAO climate programme through an effective collaboration between the Agriculture, Fisheries, Forestry, Economics and Sustainable Development Departments.

In November 1991, the 26th Session of the FAO Conference, reflecting the increased emphasis on sustainable agriculture, decided to increase the budget allocation for cross-sectoral activities, including climate change and other related fields such as combating desertification and biological diversity.

The first **FAO position paper on climate change** was jointly prepared, in October 1988, by the members of the *ad hoc* Group on Climate Change. The paper was submitted to the UN General Assembly. A second, revised version was prepared to incorporate the wealth of new data and information which has become available over the previous two years, in particular, as a result of the IPCC working groups. The FAO position paper is one of FAO's inputs to the **Second World Climate Conference** (1990). The conference was co-sponsored by FAO.

Shortly before the UNCED (United Nations Conference on Environment and Development) meeting in Rio de Janeiro, June 1992, a flyer was prepared on "Climate Change: World Agriculture and the Rural Environment", giving, in a synoptic way, the facts, the model projections and the consequences, as well as FAO's strategies and actions, the latter summarized as follows:

- development of monitoring and early warning systems for extreme events affecting food and agriculture, such as droughts and pest and disease outbreaks;
- disaster preparedness plans and food security assistance schemes;
- stimulation of research to increase reliability of seasonal weather forecasts to reduce risk in rainfed farming;
- promotion of improved geo-referenced databases on natural resources and current land uses that influence sources and sinks of greenhouse gases;
- improved management of existing forests; afforestation and reforestation programmes;
- conservation schemes for plant and animal genetic resources, including traditional land races now under threat;
- stimulation of research and application of methods to improve nutrition, health and genetic characteristics of livestock, increasing its productivity and reducing greenhouse gas emissions per unit product;
- promotion of the development of resilient agricultural systems and adapted management practices, including crop diversification and the breeding of stress-tolerant crops;
- conservation and rehabilitation of degraded lands, more judicious use of nitrogen fertilizers, and improvement of rural water use efficiency;

- stimulation of further research on the effects of increased CO<sub>2</sub>, alone and combined with increased UV-B radiation and ozone, on plant growth and on soil conditions, especially in tropical environments;
- stimulation of improved modelling of climatic change at regional and national levels, and subsequent reassessment of national human population supporting capacities.

In 1991, WMO had proposed to several UN agencies to join their efforts in the **coordination of the World Climate Programme** (WCP) in the wake of UNCED, and to develop the “climate wing” of Agenda 21. FAO joined the Coordinating Committee of the World Climate Programme in 1992, together with WMO, UNEP, UNESCO and its IOC (International Oceanographic Commission) and ICSU (International Commission of Scientific Unions) while WHO (World Health Organization) has been participating since 1996. FAO was one of the organizers of the Intergovernmental Meeting on the World Climate Programme (IGM-WCP) held in April 1993. It was convened by WMO on behalf of the seven sponsoring organizations: WMO, UNEP, UNESCO and its IOC, FAO, UNDP (United Nations Development Programme) and ICSU. This eventually resulted in a Proposal for an Integrating Framework of the International Climate Related Programmes - also known as the **Climate Agenda** - which was conceived to stress the links of climate-related programmes with sustainable development.

The document "The Climate Agenda - International Climate Related Programmes. A Proposal for an Integrating Framework" was endorsed by the Twelfth World Meteorological Congress in 1995. The Climate Agenda aimed at a better utilization of the resources available within the UN system by harmonizing their climate-related activities, which cover mainly the reduction of the impact of climate variability, especially extreme events such as drought, and increasing the resilience of climate-sensitive sectors against climate variability, including man-made climate change.

The *Integrated Proposal* identifies four main thrusts for the future activities under the WCP:

- (i) New frontiers in Climate Science and Prediction, covering especially the need for better seasonal forecasts, under the lead of WMO;
- (ii) Climate services for sustainable development, among others the developments of products which will enable nations to respond to climate extremes and climate-related calamities, especially drought and desertification. WMO would be the lead agency for this thrust too;
- (iii) under the lead of UNEP, Studies of Climate impact assessments and response strategies to reduce vulnerability, mainly the identification of options for national response strategies to reduce vulnerability to climate variability and change;
- (iv) Dedicated observations of the climate system, under the lead of WMO.

The Climate Agenda proposes actions to be taken by both Agencies and Governments. Agencies are mainly requested to align their climate-related activities according to the priorities of the Agenda and to establish a formal **Inter-Agency Committee on the Climate Change** (IACCA) to identify priorities, resource requirements and carry out the monitoring of international activities.

The participation of FAO in the Climate Agenda was unanimously decided by the 111th session of the Council in 1996 to assist countries in responding to climate fluctuations and extremes and in view of the usefulness of the Climate Agenda for FAO's own climate programme.

A fact sheet on “Climate and Food Security” was jointly prepared with WMO for the **World Food Summit** (WFS) in November 1996, followed in 1997 by notes on “Climate Change” and on “Energy” for the Special Session in June 1997 of the General Assembly to review the progress of implementation of Agenda 21. The WFS recognized that the resource base for food, agriculture, fisheries and forestry was under stress and threatened by problems such as desertification, deforestation, over fishing, loss of biodiversity, inefficient use of water and climate change. Mainly under commitment three, the WFS makes a number of explicit references to the dominant role of climate fluctuations in food supply as one of the factors interfering with sustainable increases in food production.

In December 1998, FAO was for the first time officially represented at the 4th Session of the Conference of the Parties (**COP-4**) to the UNFCCC held in Buenos Aires. Since then, FAO has always been very active in participating with official statements and side-events at the different sessions of the COPs and of the Subsidiary Bodies for Implementation (SBI) and for Scientific and Technological Advice (SBSTA) of the UNFCCC.

In June 2001, the 120th Session of the FAO Council, reflecting the increased emphasis on sustainable agriculture, supported the proposal made by the Committees on Agriculture (COAG) and on Forestry (COFO) to develop an integrated climate change programme based on current activities, within Regular Budget provisions, and consistent with the legal and political framework of the UNFCCC and the technical work of the IPCC. In order to make best use of synergies, the Council stressed the need for FAO to collaborate on technical matters with the secretariat and subsidiary bodies of the UNFCCC, the IPCC, sister agencies such as WMO, UNEP, the Secretariats and Subsidiary Bodies of the Convention on Biodiversity (CBD) and the Convention to Combat Desertification (CCD), as well as regional organizations.

The formalization of the *ad hoc* IDWG on Climate Change and Variability in Relation to Food Security was supported, thereby strengthening the cross-sectoral coordination and implementation of the FAO climate programme. In this way, a stronger collaboration between the Agriculture, Fisheries, Forestry, and Sustainable Development Departments should also be reflected by the respective Departments addressing climate issues in a harmonized way.

A major dimension of the Medium Term Plan 2004-2009 preparation process was in the first instance to foster the comprehensive application of the new programming approach endorsed by FAO Governing Bodies, and the activities of the concerned technical units and associated regional teams. At the same time, it was imperative to give due attention to needed cooperation across departments, in order to respond adequately to the call in the Strategic Framework for enhanced multi-disciplinary approaches.

For this purpose, a two-pronged effort was launched to identify **Priority Areas for Inter-disciplinary Action** (PAIAs) over the medium-term, with the assistance of: a) the *ad hoc* working groups which had been active in the 1998-99 biennium in developing the five Corporate Strategies to address Members' needs, eventually included in the Strategic Framework 2000-2015; and b) existing interdepartmental working groups dealing with substantive areas of common interest.

Among the 18 PAIAs, the one on Climate Change Issues on Agriculture has been very active to produce outputs contributing to the objectives of the PAIAs of interest.

In 2001, an integrated climate change programme based on current activities has been approved. This includes the promotion of practices for climate change mitigation, the adaptation of agricultural systems to climate change, the reduction of emissions from the agricultural sector as far as it is carefully considered within the major objective of ensuring food security, the development of practices aimed at increasing the resilience of agricultural production systems to the vagaries of weather and climate change, national and regional observing systems, as well as data and information collection and dissemination.

In September 2003, to ensure continued and effective development and coordination of an organization-wide programme and following endorsement by the 120th Session of the FAO Council, the Director-General decided to formalize the establishment of the **IDWG on Climate Change**.

In October 2003, the Organization was represented at the **World Climate Change Conference** in Moscow by the Director-General, Mr Jacques Diouf.

In December 2004, the Organization was represented at the High Level Segment of the 10th Conference of the Parties (**COP-10**) to the UNFCCC in Buenos Aires through the Deputy Director-General, Mr David A. Harcharik.

In December 2005, at the 11th Session of the Conference of Parties (**COP-11**) to the UNFCCC, held in Montreal, it was requested to invited parties and accredited observers to submit views on issues related to reducing emissions from deforestation in developing countries. As a response to this invitation, FAO submitted information and experiences related to this subject and highlight the main issues that need to be considered in the further process.

In November 2006, the 131st Session of the Council approved the establishment of a new department of Natural Resource Management and Environment, as a successor to the previous Sustainable Development Department, which would house a new division for **Environment, Climate Change and Bioenergy**.

FAO has been very active with and technical contributions to IPCC as lead authorship on the Fourth Assessment Report, on the Special Report on Land Use and Land Use Change, on guidelines for forest carbon inventories and, furthermore, with technical contributions to major pending and emerging issues in implementing UNFCCC and Kyoto Protocol in forests during the first and subsequent Commitment Periods; with technical advice, data and methods to support the UNFCCC Secretariat in its work related to forests; with the development of carbon inventory methods and parameters for forest-, agroforest-, and urban forest ecosystems in developed and developing countries; with the promotion of wood fuels as a carbon neutral substitute to fossil fuels in negotiations.

The main meetings on climate-related issues were the followings:

- Expert Consultation on Forestry and Climate Change was held in 1990.
- Expert Meeting to assess the potential of biofuels as a sustainable substitute for fossil fuels and to assess land requirements in the light of agricultural land needs was held in 1993 organized by the Energy Group, the Forestry Department and SDRN.
- Expert Meeting on “Global climatic change and agricultural production: direct effects of hydrological and plant physiological processes” was held in December 1993 in Rome, with the support of UNEP.
- Expert Meeting on “Relationships between Land Degradation, Carbon Sequestration and Biodiversity” was held in 1999 jointly with IFAD (International Fund for Agricultural Development).
- Expert Meeting on “Verification of Country Level Carbon Stocks and Exchanges in Non-annex I Countries” to debate issues related to the verification of carbon stocks and exchanges at the national level was held in Rome in September 2000 jointly with GTZ (German Technical Cooperation).
- Expert Workshop on “Carbon Sequestration, Sustainable Agriculture and Poverty Alleviation” was held in Geneva in August 2000 jointly with WMO.
- First Expert Meeting on “Harmonizing Forest-related Definitions for Use by Various Stakeholders”, organized by FAO and IPCC, in collaboration with the Centre for International Forestry Research (CIFOR), the International Union of Forest Research Organizations (IUFRO) and UNEP was held in Rome in January 2002, which recommended, *inter alia*, establishing a Task Group; preparing a comprehensive analytical framework; and organizing another expert meeting to review the framework and decide on further action.
- Second Expert Meeting on “Harmonizing Forest-related Definitions for Use by Various Stakeholders” was jointly organized by FAO and IPCC, in collaboration with the Centre for International Forestry Research (CIFOR), the International Union of Forest Research Organizations (IUFRO) and UNEP was held in Rome in September 2002.
- Expert Workshop of the "Mediterranean" component of the Italian funded CLIMAGRI project on “Climate Change and Agriculture” was held in Rome in September 2002.
- Side event organized during the 31<sup>st</sup> session of the Committee on Food Security on the interrelationship between climate change, food security and the Millennium Development Goals was held in Rome in May 2005.
- In August 2006, an UNFCCC workshop on “Reducing Greenhouse Gas Emissions from Deforestation in Developing Countries” was hosted in Rome.