

Climate change: a development challenge



Enabling poor rural people
to overcome poverty



Climate change is one of the most serious threats the world faces. It will affect all of us, but will have a disproportionate impact on millions of poor rural people. Climate change is a challenge to everyone working in development and will make it more difficult to achieve the Millennium Development Goals, particularly the first goal of halving the proportion of people living in extreme poverty by 2015. To meet this goal, we must not only help poor rural people cope with climate change, we must enable them to be part of the solution.

For IFAD, climate change has a special significance. Our mission is to enable poor rural people to overcome poverty. Agriculture is the main source of livelihood for most poor rural people, and it is also the human activity most directly affected by climate change.

More than 3 billion people live in rural areas of developing countries. Most live on less than US\$2 a day. Poor rural people are the most vulnerable to the effects of climate change. Many live on ecologically fragile land and depend on agriculture, livestock, fisheries and forestry. Poor rural people lack the institutional and financial capacity to withstand the impact of climate change. Climate change has particular

implications for women, who are often responsible for gathering fuel and water and for tending fields.

We are already seeing the effects of climate change on agriculture in developing countries. Crop failures and livestock deaths are causing higher economic losses, contributing to higher food prices and undermining food security with ever-greater frequency, especially in parts of sub-Saharan Africa. Some rainfed crop yields could drop by 50 per cent by 2020 in some countries.

The World Bank estimates that agriculture and deforestation account for 26 to 35 per cent of greenhouse gas emissions. Yet agriculture and forestry can play a key role in tackling climate change. Afforestation and reforestation, better land management practices such as conservation tillage and agroforestry, rehabilitation of degraded crop and pasture land and better livestock management practices can all contribute significantly to reducing carbon emissions.

Poor rural people manage vast areas of land and forest, and can be important players in natural resource management and carbon sequestration. They are often the custodians of the natural resource base and can provide important environmental services. Carbon trading schemes need to include a way to compensate poor rural people for carbon sequestration. Support for soil conservation, incentives for sustainable production practices and payment for carbon sequestration and avoided deforestation are all part of the solution.

In response to the growing magnitude of climate change, IFAD is increasingly integrating adaptation into its operations and contributing to mitigation programmes to make them beneficial to poor rural people. By listening to the voices of poor rural people when planning adaptation and mitigation processes, we can reduce the risks of climate change, while accelerating progress towards a world without poverty.

Poor rural people can be part of the solution

The international community has agreed on four building blocks of response to climate change: adaptation, mitigation, technology and finance.

Adaptation includes all activities that help people and ecosystems adjust and reduce their vulnerability to the impact of climate change. There is no universal way to adapt; specific measures need to be tailored to specific contexts. Traditionally, agriculture was an adaptive activity to climate variations. Today, unsustainable land practices are no longer viable. Good adaptation strategies should build on sustainable development strategies.

Mitigation aims at reducing greenhouse gases or enhancing the ability of nature, in particular forests, to absorb them. Rich developed countries have been the main producers of greenhouse gases and must now take the lead in reducing emissions.

In developing countries, poor rural people use a large proportion of the land surface. As a result, they have the potential to be key players in designing and implementing mitigation measures. These include carbon sequestration, forest protection, renewable energy production, conservation tillage, agroforestry and rehabilitation of degraded crop and pasture land.

Governments need to put in place policies and the right incentives to make this happen. Subsidies for soil conservation, taxes on unsustainable production practices, and payment for environmental services are part of the solution.

Technology has a significant role to play in tackling the causes of climate change and helping people adapt to its impact. We can develop new, cleaner technologies and we can breed plants that are more resilient to climate variability. A major push on research and development is needed for cleaner and more efficient technologies. This includes carbon capture and storage technologies, and early warning systems for extreme weather events. It also includes mobilizing financing and strengthening international technology agreements to enable the transfer of cleaner technologies such as wind turbines, solar panels and drip irrigation.

Financing the response to climate change will cost billions of dollars and involve massive shifts in investment patterns across a huge range of sectors, from power generation to agriculture and forestry. The carbon market, which is already playing an important role in shifting private investment flows, will have to be significantly expanded to address needs for additional investment and financial flows. National policies can help by encouraging private and public investors to invest in more climate-friendly alternative technologies, and by spreading the risk across private and public sectors.

Multilateral financial institutions, bilateral and multilateral aid agencies and, of course, the United Nations, all have important roles to play. The Clean Development Mechanism, the Clean Energy Investment Framework, the Nairobi Framework, the Nairobi Work Programme and the Global Environment Facility (GEF) funds are all examples of partnerships that will become increasingly important. These mechanisms must better respond to the needs of poor rural people to help them address the challenges of climate change.



FACTS

- More than 2 billion people live on less than US\$2 a day.
- Almost 1 billion people live on less than US\$1 a day.
- The world's population is expected to rise from 6.5 billion people to 9.1 billion by 2050, with most of the growth in developing countries.
- To meet projected demand, cereal production will have to increase by nearly 50 per cent and meat production by 85 per cent from 2000 to 2030.
- Climate change is expected to put 49 million extra people at risk of hunger by 2020, and 132 million by 2050.
- About 95 per cent of African agriculture depends on rainfall.
- Since the 1960s, the Sahel region of Africa has experienced a 25 per cent decline in rainfall.
- In Africa alone, between 75 million and 250 million people will be exposed to increased water stress due to climate change by 2020.

IFAD's experience in the field

The decision to create IFAD was taken in 1974 in the wake of the great droughts and famines that struck Africa and Asia in the preceding years. We work mainly in marginal, rainfed areas that are at risk from water shortage, land degradation and desertification. This is why adaptation to climate variability and strengthening resilience to environmental stress have always been part of IFAD's work. The following are just a few examples of how IFAD's work addresses the four building blocks of response to climate change.

Adaptation

In Sri Lanka, IFAD and the GEF are supporting a programme to rehabilitate three key coastal ecosystems – mangroves, coastal lagoons and sand dunes – along the tsunami-devastated east coast. Mangroves along the coast will provide important shoreline protection. The project aims to enhance the resilience of these three ecosystems to climate variability and to reduce the population's vulnerability to extreme weather events.

In China, IFAD is supporting a weather-based index insurance project to help poor farmers. This is a private-public funded activity. Weather-based index insurance links an insurance payout to objective, measurable events such as rainfall or temperature. This means that farmers are better able to manage risk and may be more comfortable investing in agricultural activities that require a higher initial investment.

In Cameroon, the Democratic Republic of the Congo, Equatorial Guinea and Nigeria, IFAD supports the World Agroforestry Centre's tree domestication programme, which has helped thousands of farmers benefit from the domestication, cultivation and sale of fruit and medicinal trees. Tree planting can also help the environment by

stabilizing fragile ecosystems such as hillsides, and by enhancing soil fertility.

Warming oceans are a threat to corals and some fisheries. On the islands of Mauritius and Rodrigues, an IFAD-funded programme is training members of communities in fishing methods that do not damage coral reefs or deplete fish stock. The programme has also helped participants diversify their activities into agriculture and microenterprises, so that they are not solely dependent on fishing for their livelihoods.

In eastern Morocco, drought and overgrazing had degraded vast areas of the rangelands. An IFAD-sponsored rehabilitation programme has led to improved rangeland productivity, soil cover, regeneration of medicinal and aromatic plants and improved soil water infiltration. The programme entails a GEF component that supported the preparation of a study providing relevant information for climate change adaptation and offering ways to climate-proof the GEF component.

Mitigation

Poor rural people can play an important role in climate change mitigation by using better agricultural practices and by promoting forestry activities that will contribute to carbon dioxide absorption.

IFAD currently supports reforestation projects in the Himalayas and Yemen. An IFAD-supported programme in China is setting up solar power systems to help poor households get energy from the abundant sunlight in the area. A biogas project in China is turning human and animal waste into a mixture of methane and carbon dioxide gases that can be used for lighting and cooking.

Finance

IFAD is expanding its grant and loan portfolio for projects that reward poor people for ecosystem services. Since 2001, IFAD has supported a grant programme in South East Asia that has had a significant impact on secure access to land, watershed protection and biodiversity conservation. A grant programme focusing on Africa will address carbon emissions and avoided deforestation.

Technology

IFAD supports research institutes and other bodies to test, adapt and disseminate technology to help climate-proof agriculture. For example, an IFAD grant to the International Institute of Tropical Agriculture is funding research into improved soil fertility for yam production in Benin, Cameroon, Côte d'Ivoire, Ghana, Nigeria and Togo. IFAD and the International Centre for Maize and Wheat Improvement have established a partnership to create and deliver stress-tolerant maize varieties to poor farmers in sub-Saharan Africa. IFAD has also supported the development of NERICA, a new rice variety that combines the hardiness of local African rice species with the high productivity of Asian rice. IFAD recognizes the importance of blending traditional knowledge with scientific research, and the need to develop stronger alliances for sharing knowledge about responses to climate variability.



CONTACTS

Atiqur Rahman
Lead Strategist and Policy Coordinator
Policy Division
IFAD
Tel: +39 06 5459 2390
E-mail: at.rahman@ifad.org

Sheila Mwanundu
Senior Technical Adviser
Environment and Natural Resource
Management
Technical Advisory Division
IFAD
Tel: +39 06 5459 2031
E-mail: s.mwanundu@ifad.org

Khalida Bouzar
Global Environment and Climate
Change (GECC) Coordinator
IFAD
Tel: +39 06 5459 2151
E-mail: k.bouzar@ifad.org
IFAD/GECC Registry:
GECCregistry@ifad.org

LINKS

IFAD
www.ifad.org

IFAD and Desertification
www.ruralpovertyportal.org/english/topics/desertification/ifad/index.htm

Global Environment Facility
www.thegef.org

Global Mechanism
www.gm-uncdd.org

United Nations Framework Convention on
Climate Change
www.unfccc.int

FAO
www.fao.org

Intergovernmental Panel on Climate
Change
www.ipcc.ch

United Nations Environment Programme
www.unep.org

The Nobel Peace Prize, 2007
nobelprize.org/nobel_prizes/peace/laureates/2007/index.html

New York Times
topics.nytimes.com/top/news/science

BBC – Climate Change Around the World
news.bbc.co.uk/2/hi/in_depth/629/629/6528979.stm

World Development Report 2008
www.worldbank.org/wdr2008

Collecting rainwater yields fruit trees and income

IFAD-supported soil and water conservation activities in the south of Jordan show how poor rural people can adapt to erratic rainfall, improve their incomes and nutrition, and in the process contribute to mitigating the effects of global warming by growing trees that can absorb carbon dioxide.



“Before the project, this land was waste – barren and full of stones and thorny shrubs, nothing else,” says Maliha Maita, who owns about 2.5 hectares of land in Raba village near Karak in Jordan.

The project helped poor farmers like Maliha build stone walls and terraces to stop erosion and water run-off. They built more than 1,000 cisterns to collect winter rainfall to irrigate their farms during the drier seasons. These cisterns use gravity to drive water through the farm irrigation systems instead of using fuel-powered water pumps.

The project's engineers planned where Maliha should build stone terraces and where the water cisterns should be excavated. Maliha received

credit to dig three cisterns, and additional small loans for planting trees. Now she is able to collect rainwater for her farm in the cisterns. Precious topsoil and water remain trapped in the strategically built terraces. Her land has become more fertile, and she has been able to plant olive and pistachio trees, grapes and barley.

As a result of the project, incomes of more than 40,000 people have risen by 12 per cent and family nutrition has improved. The second phase, which began in 2005, promotes water harvesting techniques, such as *wadi* bank (stone barrier) protection, instead of relying on groundwater for irrigation. It has helped establish associations of water users and supports research on using treated domestic wastewater to irrigate trees. Initiatives such as this have helped Jordan diversify its agriculture and increase the replenishment of groundwater.

Working in partnership

Responding to climate change requires collective action. IFAD works closely with developing country governments, non-governmental organizations and the private sector, along with partners in the international development community. IFAD has a close relationship with the other UN agencies in Rome: the Food and Agriculture Organization (FAO) and the World Food Programme (WFP).

IFAD's particular strength is in working directly with poor rural people and their organizations. Community-based approaches and community-driven development are particularly effective in helping poor rural communities become more resilient so they are better able to cope with climate change.

IFAD is an active member of the Multilateral Financial Institutions Working Group on Environment, which meets regularly to share experiences of environmental issues. IFAD is an executing agency of the GEF. The GEF is one of the main financial mechanisms for addressing climate change and represents a strategic partner for IFAD.

Together, the GEF and IFAD are addressing the intertwined issues of poverty alleviation, sustainable land management and climate change. IFAD helps countries access funding opportunities with the GEF for climate change adaptation and mitigation.

Since 1997, IFAD has hosted the Global Mechanism of the United Nations Convention to Combat Desertification, which is mandated to increase the effectiveness and efficiency of existing financial mechanisms. As host, IFAD is in a good position to coordinate with other partners, seek technical support when needed and look for partnership with other institutions to address climate change in arid and sub-arid areas.



IFAD is an international financial institution and a specialized United Nations agency dedicated to eradicating poverty and hunger in rural areas of developing countries.

International Fund for Agricultural Development
Via Paolo di Dono 44, 00142 Rome, Italy
Tel: +39 06 54591
Fax: +39 06 5043463
E-mail: ifad@ifad.org
www.ifad.org, www.ruralpovertyportal.org

June 2008