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Enabling poor rural people
to overcome poverty

IFAD and climate change

Consultation on the Eighth Replenishment of IFAD's
Resources — Fourth Session
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For: **Review**

Note to Consultation members

This document is submitted for review by the Consultation on the Eighth Replenishment of IFAD Resources.

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Abbreviations and acronyms

CO ₂	carbon dioxide
CDM	Clean Development Mechanism
CEB	Chief Executives Board for Coordination (United Nations system)
CGIAR	Consultative Group on International Agricultural Research
COP	Conference of the Parties (UNFCCC)
COSOP	country strategic opportunities programme
GEF	Global Environment Facility
FAO	Food and Agriculture Organization of the United Nations
HLCP	High-level Committee on Programmes (CEB)
LDC	least developed country
MDG	Millennium Development Goal
NAPA	national adaptation programmes of action
PES	payment for environmental services
SCCF	Special Climate Change Fund
SPA	Special Programme for Sub-Saharan African Countries Affected by Drought and Desertification
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change

Executive summary

Climate change and its effects

1. The 2007 reports of the Intergovernmental Panel on Climate Change made it clear that the warming of the climate system is unequivocal and accelerating. The average global temperature rose 0.74 degrees Celsius over the last century and could increase by 3 degrees Celsius during this century. Developing countries, and above all the least developed countries, are most at risk from the effects of climate change: sub-Saharan African countries dominate the list of the most drought-affected and consequently also suffer the largest negative impacts on agricultural production; South and South-East Asia are disproportionately flood-affected, and the Pacific and Indian Oceans are the areas most exposed to hurricanes. Within these countries, the rural poor – those who are the least responsible for causing climate change – are particularly vulnerable to its effects; and women are often the most vulnerable of all. Climate change represents an additional threat to the already precarious livelihoods of the rural poor. Almost 50 million extra people will be at greater risk of hunger by 2020; and many more will be if the linked effects of high global food prices are factored in. It is now clear that a prerequisite for achieving the first Millennium Development Goal must be to strengthen the capacity of poor rural people to adapt to the effects climate change.

The global response to climate change

2. The framework for a global response to climate change is provided by the United Nations Framework Convention on Climate Change (UNFCCC), which addresses both the reduction of greenhouse gas emissions (“mitigation”), and adaptation to the expected impacts of climate change (“adaptation”). Mitigation is addressed mainly through the Kyoto Protocol, which came into force in 2005. This committed signatory developed countries to a 5 per cent reduction in greenhouse gas emissions below 1990 levels, to be achieved by 2012. It established three mechanisms for reducing emissions, one of which is the Clean Development Mechanism – which allows developed countries to invest in projects that reduce emissions in developing countries, as an alternative to reducing their own emissions. The UNFCCC also provides a framework for adaptation, most significantly through the least developed countries’ national adaptation programmes of action; and it also provides various financing sources for assisting developing countries in adapting to climate change, all administered by the Global Environment Facility (GEF). Additional funding for adaptation and mitigation is also provided by multilateral financial institutions and bilateral donors, and through the so-called voluntary carbon market. In 2009, UNFCCC parties will meet in Copenhagen, where the goal will be to agree on a new global treaty for the post-Kyoto Protocol period beyond 2012.

IFAD experience and lessons learned

3. Over the past 30 years, IFAD has worked to assist poor rural people living in marginal or unfavourable agroecological conditions in managing their natural resources more sustainably, increasing their agricultural productivity, and reducing their vulnerability to climatic shocks. Much of this work has been conducted under conditions of change – rising population densities, deteriorating natural resources, and increasingly uncertain and unpredictable climatic conditions. Promoting adaptation to change by small farmers is thus part of IFAD’s core business. In recent years, the focus on climate change issues has become more explicit, and, increasingly, related initiatives have been carried out in partnership with other agencies. Projects typically support four types of adaptation activity: improving agricultural techniques and technologies; promoting community-based natural resource management; strengthening coping mechanisms and risk-preparedness to mitigate disaster impacts; and diversifying livelihoods to reduce risk. IFAD’s

experiences with mitigation are limited, but activities that focus on promoting renewable energy sources and biofuels, reforestation and improvement of land use and management practices indirectly contribute to mitigation. In addition, IFAD is involved in various research activities exploring the opportunities for small farmers to contribute to climate change mitigation and to be paid for the environmental services that they provide.

IFAD's evolving approach to climate change

4. The Fund's approach to climate change is rooted in the IFAD Strategic Framework 2007-2010. It is focused exclusively on climate change issues as they affect poor rural people in developing countries and on strengthening their long-term resilience to climate change.
5. While an increasing number of IFAD-supported projects address climate change adaptation issues, the challenge is to ensure that all IFAD activities at the country level are consistently built on an understanding of the potential effects of climate change and that they take these effects into account as necessary. IFAD's operating model provides for a range of new instruments and processes that are increasingly being used to ensure that in country strategies, and project design and implementation, attention is given to climate change issues. IFAD's policy engagement to date has been mainly through the UNFCCC, and it has focused particularly on drawing attention to poor rural communities' needs in adapting to climate change and on providing opportunities for communities to contribute to mitigating its effects. Partnerships with other United Nations and international development agencies, private companies, NGOs and civil society organizations are all critical for enabling IFAD to learn more about climate change and poor rural people, share its knowledge, strengthen its operations, leverage additional funding in support of poor rural people, and influence the global policy agenda. Some of IFAD's key partners include the GEF; the UNFCCC Nairobi work programme on impacts, vulnerability and adaptation to climate change; the Global Mechanism of the United Nations Convention to Combat Desertification; the other Rome-based United Nations agencies (the Food and Agriculture Organization of the United Nations – FAO – and the World Food Programme); and the Consultative Group on International Agricultural Research (CGIAR) and the CGIAR-supported research centres.
6. IFAD has set three priorities to strengthen its engagement in climate change issues. First and most immediately, it must build on the achievements realized so far and fully integrate climate change adaptation into its operations. Second, it will develop a strategy on climate change, to be presented to the Executive Board for approval not later than December 2009, that will guide the full integration of climate change issues into its operations and prompt a major increase in its engagement. Key focus areas are likely to include: approaches for promoting adaptation and for enabling the rural poor to participate in mitigation efforts; mainstreaming of adaptation measures in IFAD operations; and strengthening of IFAD's capacity and knowledge base on adaptation and climate risks. They would also include risk analysis and a results framework. Third, while IFAD will continue to draw on its core resources to pursue a climate change agenda, it will also seek additional funding that would enable it to scale up its engagement in climate change issues substantially. Additional resources would make it possible for IFAD to direct a stronger focus on climate change issues during the project cycle; assist Member States in developing, financing and implementing adaptation and mitigation projects aimed at poor rural people, and in accessing additional resources; better generate, manage and share knowledge on climate change and how it affects poor rural people; and build skills and capacity within IFAD further.

IFAD and climate change

I. Introduction

1. At the first Consultation on the Eighth Replenishment of IFAD's Resources, in February 2008, members requested that IFAD prepare a paper outlining its role in tackling climate change.¹ This paper responds to that request. It provides an overview of some of the major features of climate change and its effects on developing countries and on poor rural people (section II), and it summarizes the global response to climate change (section III). It then describes how IFAD-supported projects have helped poor rural people adapt to conditions of climatic variability (section IV), and finally it outlines IFAD's evolving and proposed approach to tackling climate change (section V).²

II. Climate change and its effects

2. The 2007 reports of the Intergovernmental Panel on Climate Change showed that the warming of the climate system is unequivocal and accelerating. The average global temperature rose 0.74 degrees Celsius over the last century. The largest and fastest warming trend in the history of the earth, it has already affected all continents and oceans. Projections show that the trend will continue and that the earth could warm by 3 degrees Celsius during the twenty-first century – but also that sea levels and temperatures will rise, rainfall patterns will change, and the number of extreme weather events will increase further.

The causes of climate change

3. It is now certain that climate change is mostly the result of human activities that emit greenhouse gases. Greenhouse gases, of which carbon dioxide (CO₂) is the most important,³ trap heat in the earth's atmosphere, causing global temperatures to rise and disrupting natural climate patterns. Over the past 30 years, emissions of greenhouse gases have increased by an average of 1.6 per cent per year. Fossil fuel use for energy supply and consumption and road transport contributes to over 60 per cent of all emissions, most of this in industrialized countries and a limited number of large middle-income countries. Agriculture and deforestation are also important – particularly in developing countries – and together contribute to over one quarter of all emissions.⁴ More than half of this comes from deforestation; other significant sources are the livestock sector and rice production, which result in methane emissions, and excessive fertilizer use, which produces nitrous oxide.

The effects of climate change

4. The primary direct effects of climate change are an increase in temperature and slightly increased, but shifting and more erratic, rainfall patterns. This combination leads to an increase in droughts and floods, to more seasonal peaks in river flows and to stronger tropical storms. In South Asia, for example, melting glaciers in the Hindu Kush-Himalayas will affect the water supply for large segments of India's population. Coastal areas are vulnerable to rising sea levels: flooding will threaten the viability of some islands and major deltas, such as the Nile and the Mekong Deltas, and parts of Bangladesh. Climate change will also lead to a loss of biodiversity: between 15 and 37 per cent of land plants and animal species could become extinct by 2050. Ocean acidification, a direct result of rising CO₂ levels, will

¹ Climate change is defined by the United Nations Framework Convention on Climate Change as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate change variability observed over comparable time periods."

² This paper does not discuss IFAD's actions to lessen the impact of its own activities on the environment. These are summarized in the information paper entitled "IFAD Action to limit its carbon imprint" (EB 2007/92/INF.7), presented to the Executive Board in December 2007.

³ Other major greenhouse gases include methane and nitrous oxide.

⁴ Since forests act as a carbon sink, deforestation results in increased levels of CO₂ in the atmosphere.

have major effects on marine ecosystems and, possibly, fish stocks. At the same time, many wetlands are threatened by changes in water flows through river systems and by coastal storm surges, while forests are at increased risk of wildfire as a result of hot, dry conditions. The impacts on humankind will be far-reaching: patterns of diseases are likely to change, making control more difficult; infrastructure will be threatened, at ever-greater cost; and, ultimately, climate change will have a direct and major negative impact on global and national economies.

What climate change means for developing countries

- The countries most at risk from climate change-related threats – drought, floods, storms, rising sea levels and changes in agricultural production – are virtually all developing countries, and the vast majority are least developed countries (see table 1). Sub-Saharan African countries dominate the list of the most drought-affected and consequently also suffer the largest negative impacts on agricultural production; South and South-East Asia are disproportionately flood-affected; and the Pacific and Indian Oceans are the areas most exposed to hurricanes.

Table 1

Countries most at risk from climate change-related threats

<i>Drought</i>	<i>Flood</i>	<i>Storm</i>	<i>1 m.a.s.l.*</i>	<i>5 m.a.s.l.</i>	<i>Agriculture</i>
Malawi	Bangladesh	Philippines	All low-lying island states		Sudan
Ethiopia	China	Bangladesh	Viet Nam	Netherlands	Senegal
Zimbabwe	India	Madagascar	Egypt	Japan	Zimbabwe
India	Cambodia	Viet Nam	Tunisia	Bangladesh	Mali
Mozambique	Mozambique	Moldova	Indonesia	Philippines	Zambia
Niger	Lao People's Democratic Republic	Mongolia	Mauritania	Egypt	Morocco
Mauritania	Pakistan	Haiti	China	Brazil	Niger
Eritrea	Sri Lanka	Samoa	Mexico	Venezuela (Bolivarian Republic of)	India
Sudan	Thailand	Tonga	Myanmar	Senegal	Malawi
Chad	Viet Nam	China	Bangladesh	Fiji	Algeria
Kenya	Benin	Honduras	Senegal	Viet Nam	Ethiopia
Iran (Islamic Republic of)	Rwanda	Fiji	Libyan Arab Jamahiriya	Denmark	Pakistan

* m.a.s.l. = metres above sea level

Source: International Development Association (2007), *IDA and Climate Change: Making Climate Action Work for Development*. Washington, D.C.: IDA.

- The impacts of climate change on developing countries are already evident. The number of recorded floods increased by over 200 per cent between 1980-1984 and 2000-2004; increases in wind storms, droughts and extreme temperatures were also recorded. During the 1990s, the number of people in developing countries affected each year by climate-related disasters reached 200 million – compared with 1 million in developed countries.
- Developing countries are particularly vulnerable not only because of the climatic conditions they face, but also because of their very lack of economic development. The majority are predominantly rural and have a high dependence on agriculture and natural resources. Low incomes and poverty mean that their populations have a lower capacity to adapt to the effects of climate change; and weak capacity also constrains the ability of their Governments to provide policies and investments in support of adaptation. The Stern Review⁵ suggests that climate change may reduce

⁵ Stern, N. (2007), *The Stern Review: Economics of Climate Change*. Cambridge: Cambridge University Press.

global incomes per head by between 5 and 20 per cent – and that developing countries will experience the largest losses. Thus poverty exacerbates vulnerability to climate change, while climate change can exacerbate poverty and undermine sustainable development, especially in the least developed countries. Yet conversely, and critically, sustainable development can reduce vulnerability to climate change. For sustainable development to be achieved, climate change adaptation and mitigation must be mainstreamed in policymaking. This is increasingly recognized by developing countries themselves: many are already contributing to global climate action in the context of their poverty reduction strategy papers or their own sustainable development strategies.

Climate change and the rural poor

8. Within developing countries, it is poor rural people – those who are the least responsible for climate change – who are most at risk from its effects. Climate change represents an additional threat to their already precarious livelihoods and coping strategies, and reinforces their existing vulnerabilities. There is broad agreement that agricultural production is likely to decline in most of the developing world as a result of reduced water availability, increased temperatures, uncertain or shorter growing seasons, less arable land, new pest and disease patterns, and limited knowledge among farmers about how to respond to the changing weather patterns. Africa is expected to fare worst because of both declining yields and reduced arable areas. Analysis by Lobell et al.⁶ suggests that Southern Africa and South Asia are particular “hunger hotspots”.
9. By 2020 almost 50 million additional people may be at greater risk of hunger as a direct consequence of climate change. Rising global food prices are likely to push this number much higher. In such conditions, conflict over scarce land and water resources – within and between rural communities, and even between nations – is likely to become ever more frequent. Many poor rural people will migrate in search of resources or opportunities – to new lands, to the urban areas, and even to the developed world; yet migration may itself fuel new conflicts between different population groups with competing claims to the same resource. In post-conflict and other fragile states, the impact of climate change brings an additional threat to peace and stability.
10. Women, as the majority of the world’s poor, are the most vulnerable of all to climate change. Poor women are more likely to become direct victims of climate change disasters. Climate change also affects the day-to-day livelihoods of rural women. Because in many developing countries women do most of the agricultural work, any increased workload is likely to fall on them; and reduced agricultural production means that they have to work that much harder to secure their family’s food security. In addition, erratic rainfall, drought and deforestation mean that women and girls also need to spend more time collecting water and fuelwood. In such situations, they have less time to earn an income, get an education or participate in local institutions. Climate change thus risks magnifying existing inequalities and reinforces the disparity between women and men and their capacity to cope.
11. Effectively, climate change is making the challenge of reaching the first Millennium Development Goal (MDG 1) even greater and even more costly. It is now clear that a prerequisite for achieving MDG 1 must be to strengthen the capacity of poor rural people to adapt to the effects of climate change.

III. The global response to climate change

12. The overall framework for a global response to climate change is provided by the United Nations Framework Convention on Climate Change (UNFCCC), which came into force in 1994. Signatory parties launched non-binding national strategies both

⁶ David Lobell, Marshall Burke, Claudia Tebaldi, Michael Mastrandrea, Walter Falcon, Rosamond Naylor, “Prioritizing climate change adaptation needs for food security by 2030”. In *Science*, Vol. 319, 1 February 2008.

for reducing greenhouse gas emissions (“mitigation”), and for adapting to the expected impacts of climate change (“adaptation”). Countries that are parties to the UNFCCC meet in Conferences of the Parties (COPs); the most recent, COP 13, was held in Bali in December 2007.

Mitigation and the Kyoto Protocol

13. Mitigation is addressed under the UNFCCC mainly through the Kyoto Protocol, which came into force in 2005. The Protocol committed signatory developed countries to a 5 per cent reduction in greenhouse gas emissions below 1990 levels, to be achieved by 2012. It established three mechanisms for reducing emissions; the most relevant to IFAD’s work is the Clean Development Mechanism (CDM), which allows developed countries to invest in projects that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries.
14. To date there are over 1,100 CDM projects registered in the developing world. Yet many developing countries face serious problems in identifying and implementing CDM projects (68 developing countries still have no experience in the CDM), and a number of initiatives have been established to increase their level of participation. The most important of these is the Nairobi Framework, initiated by the United Nations Development Programme, United Nations Environment Programme, World Bank Group, African Development Bank, and the secretariat of the UNFCCC; another is the World Bank’s Africa-Assist: A Special Effort in Africa initiative, launched in 2006.
15. Projects cover a broad range of sectors where emission reductions are possible. Over half are in the energy industry; a little under one third in re-forestation and agriculture – mainly methane capture in improved animal manure management systems and bioenergy production from biomass waste. These have been of little relevance to the rural poor. Indeed, the opportunities for the rural poor to benefit from the CDM are currently limited since the sort of projects from which they could profit typically have high transaction costs relative to mitigation benefits and present major difficulties in certifying CO₂ reductions.

The UNFCCC as a framework for adaptation

16. Recognizing the high vulnerability of least developed countries (LDCs) to climate change, the UNFCCC COP 7 established an LDC work programme in 2001. This included guidelines to assist LDCs in preparing national adaptation programmes of action (NAPAs), supported where necessary by an LDC expert group. NAPAs are expected to address LDCs’ urgent and immediate needs and concerns related to adaptation, and to prioritize a small list of activities, including short project profiles. A growing number of LDCs – currently 38 – have so far prepared NAPAs and are moving to implement priority activities. Also, in 2005 the UNFCCC launched the Nairobi work programme on impacts, vulnerability and adaptation to climate change, with the objective of helping all countries improve their understanding and assessment of the impacts of climate change and to make informed decisions on practical adaptation actions and measures.
17. There are currently four international financing sources for assisting developing countries in adapting to climate change, all administered by the Global Environment Facility (GEF): the Least Developed Countries Fund (LDCF), which supports the preparation and implementation of NAPAs; the Special Climate Change Fund (SCCF); the GEF Trust Fund Strategic Priority on Adaptation entitled “Piloting an Operational Approach to Adaptation”; and the new Kyoto Protocol Adaptation Fund, which will support adaptation projects in developing countries that are parties to the Protocol. Through the LDCF, the SCCF and the Strategic Priority on Adaptation, the GEF had provided some US\$290 million for adaptation activities by 2007. The Kyoto Adaptation Fund will be funded through a 2 per cent levy on CDM projects, which is expected to generate from US\$100 million to US\$500 million by 2012, thus

becoming the major source for financing adaptation activities in developing countries.

Other funding for adaptation and mitigation

18. All of the major multilateral financial institutions have climate change programmes, financed in large part through supplementary or trust funds from bilateral donors. The World Bank, for example, administers a series of mitigation funds and facilities, worth over US\$2 billion; the African and Asian Development Banks also have specific initiatives in support of mitigation. All are looking to incorporate adaptation issues into their lending. Bilateral funding agencies have also provided funding for adaptation activities: by 2007, this totalled about US\$110 million for more than 50 projects in 29 countries. Financing for mitigation activities is also available through the so-called voluntary carbon market, which has emerged outside the UNFCCC framework. Independent of government targets and policies, it provides an opportunity for businesses, NGOs and individuals to contribute to offsetting by purchasing carbon credits, for reasons ranging from meeting their own self-imposed emissions reduction targets, to helping to address climate change, or to helping reduce the impact of their own carbon footprints.

Towards post-Kyoto

19. In December 2007, the parties to the UNFCCC agreed in Bali on the Bali Road Map, outlining the steps “essential to reaching a secure climate future.” One of its main outcomes is the Bali Action Plan, which seeks both to enhance UNFCCC implementation and to provide a framework for negotiating further actions for the post-Kyoto period beyond 2012. The Action Plan calls for a series of actions by developed and developing countries, in the four areas of mitigation, adaptation, technology development and transfer, and the provision of financial resources and investment. In 2009, UNFCCC parties will meet in Copenhagen, where the goal will be to agree on a new global treaty for the period beyond 2012. However, many issues remain to be resolved before an agreement can be reached.

The role of the United Nations system

20. In his capacity as Chairman of the United Nations System Chief Executives Board for Coordination (CEB), the Secretary-General has placed climate change at the top of the inter-agency agenda. Guided by the CEB, the United Nations system has embarked on an ambitious effort to develop and present a coordinated contribution to the UNFCCC process, starting with the COP 13 meeting in Bali. The CEB’s High-level Committee on Programmes (HLCP); which IFAD President Lennart Båge chairs, has identified priority sectors and specific areas for United Nations system support, namely: adaptation; technology transfer; capacity-building; reduction of emissions from deforestation and forest degradation; and mitigation finance. Immediate priorities are to ensure that the United Nations system provides coordinated operational support and contributes to achieving an effective outcome at the upcoming COP in Poznan, Poland, in December 2008, and in Copenhagen in December 2009.⁷

IV. IFAD experience and lessons learned to date

21. Over the past 30 years, IFAD has consistently worked in support of poor rural people living and working in marginal or unfavourable agroecological conditions – in arid and semi-arid areas, prone to drought; in areas where soils are of low and declining fertility; in areas where the land is degraded through overuse; in coastal areas, prone to flooding; and in watersheds where cultivation on steep gradients leaves the

⁷ The Secretary-General has also undertaken an initiative to “green” United Nations premises and operations so that the United Nations can lead by example. The CEB has set end-2009 as the target date for agencies to: estimate their greenhouse gas emissions consistent with accepted international standards; take steps to reduce emissions to the extent possible; analyse the cost implications and explore budgetary modalities – including consulting with governing bodies as needed – of purchasing carbon offsets with the aim of eventually reaching climate neutrality. IFAD is seriously pursuing this agenda (see document EB 2007/92/INF.7).

hillsides subject to erosion. Fully 70 per cent of IFAD-supported projects are located in such environments. Key elements of this support have been to help poor rural people manage their natural resources (water and land, common property and individually held land) more sustainably, increase their agricultural productivity, and reduce their vulnerability to climatic shocks. Much of this work has been conducted under conditions of change – rising population densities, deteriorating natural resources, and increasingly uncertain and unpredictable climatic conditions.

A focus on adaptation

22. Helping poor rural people adapt to erratic climatic conditions is thus part of IFAD's core business, and has been an aim of a substantial proportion of IFAD-supported projects over the past 30 years. In recent years, the focus on these issues has become more explicit, and, increasingly, it has led to partnerships with other agencies, such as GEF. An internal review of IFAD-supported projects defined four types of adaptation-related activity: (a) improving agricultural techniques and technologies; (b) promoting community-based natural resource management; (c) strengthening coping mechanisms and risk-preparedness to mitigate disaster impact; and (d) diversifying livelihoods to reduce risk.
23. **Improvement of agricultural technologies and techniques.** IFAD projects have typically focused on increasing crop productivity, reducing the risk of production failure and promoting crop diversification.
24. Projects in arid zones have assisted small farmers in managing scarce water resources better, improving soil fertility and structure, reversing environmental degradation and coping with growing levels of soil salinity. IFAD's Special Programme for Sub-Saharan African Countries Affected by Drought and Desertification (SPA); which ran between 1985 and 1995, provided a strong platform for responding to climatic issues in the region. Aimed specifically at mitigating the impact of drought, increasing food security and reversing the process of desertification, SPA interventions covered small-scale irrigation, soil conservation, research on traditional food crops, marketing arrangements and non-farm income-generating activities. The lessons learned from the SPA have fed into more recent initiatives across the region. Thus the Sustainable Rural Development Programme in Burkina Faso has supported the adoption of new agricultural technologies to promote soil and water conservation; the Gash Barka Livestock and Development Project in drought-prone Eritrea supported improved crop and animal husbandry, conservation farming and small-scale irrigation; while in Senegal, where desertification is increasing, IFAD promoted the uptake of drip irrigation through its Agricultural Development Project in Matam.
25. In the humid zones, by contrast, projects have given attention to the consequences of cyclones, floods and rising sea levels. In Bangladesh, for instance, the Smallholder Agricultural Improvement Project aimed at transferring technologies, such as small embankments and drainage schemes, that strengthened the capacity of small farmers to cope with increased flooding, early and late floods, or early flood recession.
26. IFAD has a long and well-established partnership with the Consultative Group on International Agricultural Research (CGIAR). The grants it has provided to its member research centres have typically focused on developing and testing locally specific, stress-tolerant crop varieties that respond to the resource base and to the capacities and production priorities of small farmers. Examples have included IFAD's support to the International Centre for Maize and Wheat Improvement to create and deliver drought-tolerant maize varieties to poor farmers in sub-Saharan Africa, and to the International Rice Research Institute to promote the adaptation and sharing between South Asia and South-East Asia of rice technologies for farmers in flood-prone rice agroecosystems.

27. **Natural resource management.** Common property resources such as rangelands, forests and fishing resources are crucial to the livelihoods of poor rural people. Yet in much of the developing world, environmental degradation, exacerbated by the effects of climate change, threatens rural poor people's access to these resources. Close to one third of IFAD's lending is for natural resource management, much of it community-based approaches for managing common property resources.
28. Rangelands are a key resource in many regions: in Morocco, the Livestock and Rangelands Development Project in the Eastern Region rehabilitated more than 460,000 hectares of pasture lands, while helping farmers to use and conserve this key resource in a sustainable way. Under a second phase, proposals have been developed to promote climate change adaptation activities; these will be further consolidated with additional GEF grant financing. In Mongolia, the Livestock Sector Adaptation Project, to be financed through the GEF Special Climate Change Fund, aims to increase the resilience of the Mongolian livestock system to changing climatic conditions by strengthening natural resources management, climate-proofing the pasture water supply and building the capacity of herders' groups to address climate change. In recent years, IFAD has also sought to prevent conflict between different users of the same resource (for example, arable farmers and pastoralists) by promoting negotiated solutions for resource management – an approach the South Kordofan Rural Development Programme in the Sudan is pursuing through the establishment of migratory stock routes.
29. Deforestation is a direct contributor to climate change and environmental degradation, and in many cases it further impoverishes poor rural households. The Hills Leasehold Forestry and Forage Development Project in Nepal addressed the issue of open forest access and associated degradation by giving 1,800 very poor household groups 40-year leases on small plots of degraded forest land. An evaluation concluded that this approach not only reduced poverty among group members, but also succeeded in ensuring environmental recovery and forest regrowth. In Kenya, the Mount Kenya East Pilot Project for Natural Resource Management seeks to halt the environmental degradation, flooding and drought that result from deforestation and inappropriate agricultural practices, while ensuring sustainable livelihoods for rural poor households. Activities focus on promoting community-based watershed management and development within protected areas; conserving and managing ecosystems, including forest rehabilitation; and reducing conflict between humans and wildlife, a priority for farmers in an area adjacent to the Mount Kenya National Park.
30. Various projects aim at promoting sustainable land management in marginal lands. One example is the Sustainable Rural Development Project for the Semi-arid Zones of Falcon and Lara States in the Bolivarian Republic of Venezuela, which works in 28 microwatersheds to recover degraded and degrading areas, and to promote the sustainable use of natural resources. In flood-prone areas, improved coastal management is critical for adaptation. Under the Post-Tsunami Coastal Rehabilitation and Resource Management Programme in Sri Lanka, a grant proposal has been submitted to GEF (under the SPA) for using a community-based approach to rehabilitate three coastal ecosystems along the tsunami-devastated east coast – mangroves, coastal lagoons and sand dunes – so as to enhance their resilience to climate variability and reduce the population's vulnerability.
31. **Risk-preparedness and coping with disaster impacts.** IFAD support has focused on two broad areas. First, it has been used to help rural people prepare for future risks more effectively through the development of early warning systems and preparedness plans for both floods and droughts. In Bangladesh, for example, the Smallholder Agricultural Improvement Project helped poor rural households hit by the 1991 cyclone to protect their houses against floods, and constructed ten cyclone shelter centres. The Western Sudan Resource Management Programme in the Sudan and the Pastoral Community Development Project in Ethiopia both established

environment warning systems that enable rural populations to adjust their livelihoods to the expected effects of drought. The Kidal Integrated Rural Development Programme in Mali will establish an environmental monitoring system for risks such as droughts, locusts and livestock diseases, and enable measures to be taken to mitigate their effects.

32. The second broad area of IFAD support involves managing weather-induced risk and hedging farmers against vulnerability. In China, where farmers are exposed to regular crop failures induced by erratic weather patterns, IFAD has co-funded an initiative to develop and implement an index-based weather insurance system.⁸ Funded both publicly and privately, this activity will insure rural poor people's incomes against weather hazards, breaking the pattern of the frequent risk of "short-term shock – long-term impact". A similar initiative, aimed specifically at the need to address climate change-induced risks, is planned under the GEF/SCCF-financed Livestock Sector Adaptation Project in Mongolia
33. **Diversifying livelihoods to reduce vulnerability.** The promotion of income sources beyond agriculture aims to reduce the vulnerability of poor rural households to climate-induced crop and livestock failure. One approach is to support rural communities to enable them to exploit their broader natural resource base sustainably. Projects such as the Sustainable Development Project for Rural and Indigenous Communities of the Semi-Arid North-West, in Mexico, and the Livelihoods Improvement Project in the Himalayas, in India, have promoted ecotourism. Targeted at indigenous peoples, the projects are reducing dependence on agriculture-based activities by promoting a shift to off-farm activities; they are also encouraging improved natural resource management. PhytoTrade Africa, an IFAD-supported, private sector-driven, regional trade association, is building global value chains (principally in the cosmetics, nutritional supplement and health care markets) for natural products derived from indigenous tree and plant species, while also encouraging their sustainable exploitation. The raw materials for the natural products supplied by PhytoTrade Africa members are all harvested from the wild by poor rural producers, 90 per cent of whom are women.
34. IFAD also assists poor rural people in broadening their income sources in other ways. The Sunamganj Community-Based Resource Management Project, in a flood-prone district of Bangladesh, is working to diversify the livelihood options of landless, marginal and small-farmer households, with a particular focus on women. The project helps them to increase their off-farm incomes by providing access to village-level savings and credit services, and by supporting agroprocessing and marketing activities. It also promotes labour-intensive infrastructure development such as village erosion-protection works and storage facilities – which provides employment opportunities as well as reducing threats of erosion and flooding.

Mitigation activities

35. IFAD's experiences with mitigation are limited, but some of its activities focusing on the promotion of renewable energy sources and biofuels, and on reforestation and improvement of land use and management practices, indirectly contribute to mitigation.
36. Two IFAD-supported projects in China are promoting renewable energy as a tool for poverty reduction and climate change mitigation. The West Guangxi Poverty-Alleviation Project is promoting household biomass units, which turn human and animal waste into a mixture of methane and CO₂ that can be used for lighting and cooking. By 2006, almost 30,000 households had built biogas tanks, saving 7,500 hectares of forest each year. For women in these households, it meant 60 days a year saved by not having to collect wood and tend cooking fires. The Xinjiang Uygur Autonomous Region Modular Rural Development Programme will help poor

⁸ IFAD funding is provided under its Innovation Mainstreaming Initiative, financed by the United Kingdom's Department for International Development.

rural people living in areas not covered by energy grids to install solar systems to meet their power needs, an activity that will also contribute to reduced carbon emissions. IFAD is also supporting pro-poor global research initiatives on biofuels to bring cleaner burning fuels to the market using feedstocks that do not compromise food security and yet meet local and national energy needs.

37. Small farmers can be important contributors to climate change mitigation. They are potential providers of a wide range of environmental services that contribute to carbon sequestration and limit carbon emissions. These include planting and maintaining forests, managing rangelands and rice lands, and implementing watershed protection initiatives that limit deforestation, soil erosion and flooding risks. However, small farmers are rarely compensated for these services. Payment for environmental services (PES) and other rewards systems can provide an approach for pricing these incentives, and can be a powerful pro-poor mechanism for mitigation. IFAD-supported research in this area includes:
- Two action research programmes – the World Agroforestry Centre’s Programme for Developing Mechanisms to Reward the Upland Poor in Asia for Environmental Services They Provide; and the Programme for Pro-Poor Rewards for Environmental Services in Africa – designed to develop and pilot mechanisms for rewarding rural poor people in Asia and Africa for their environmental services;
 - Green water credits, a mechanism – piloted in the Tana river basin in Kenya and now being further developed in collaboration with the Swiss Agency for Development and Cooperation and other partners – to transfer cash or other benefits to rural people in return for water management activities;
 - Financing to enable Forest Trends, a Washington, D.C.-based non-profit organization, and the Katoomba Group, an international network of individuals promoting PES activities, to develop a knowledge centre on PES markets in Africa, build the capacity of stakeholders implementing PES projects in poor rural communities in Africa, share lessons learned, and plan a strategy for investment in pro-poor PES initiatives in Africa.
 - Proposed collaboration with the International Food Policy Research Institute to identify policy options enabling poor rural people to engage in climate change mitigation and benefit from climate markets. The work will focus particularly on land use, land-use change and forestry activities, and will analyse possible methods for mainstreaming carbon mitigation in IFAD-supported projects.

V. IFAD’s evolving approach to climate change

38. The IFAD Strategic Framework 2007-2010 defines the Fund’s strategic objectives and the thematic areas of its work. It also recognizes that, across much of the developing world, climate change is resulting in increasingly erratic weather conditions, which, combined with human-made environmental degradation, is making the poorest rural households even more vulnerable. IFAD’s approach to climate change is rooted in its Strategic Framework; it is focused exclusively on climate change issues as they affect poor rural people in developing countries.
39. Taking this as the starting point, IFAD’s approach to climate change builds on its core strengths:
- An understanding of climate change issues that recognizes the wide variation in the climate risks faced by different countries and individual rural communities;
 - An approach that enables poor rural people themselves to define their problems and priorities relative to climate change, that builds on their local

knowledge, and that recognizes that the experiences and needs of women and men are likely to differ;

- A focus on strengthening poor rural people's long-term resilience to climate change and building their capacity to recover after climate-related shocks, rather than on providing emergency support in the immediate aftermath of such shocks;
- A broad approach to supporting the livelihoods of poor rural people, which incorporates agricultural production, natural resource management, risk preparedness and coping with disasters, and diversifying livelihoods to reduce risk;
- The use of field experimentation and adaptive research to develop new technologies, innovative approaches and adaptive practices to strengthen resilience, and to identify new mitigation opportunities;
- The use of IFAD financial resources to leverage incremental climate change-related financing; and
- The building of partnerships in support of initiatives addressing the effects of climate change on poor rural people.

Operations

40. While many IFAD-supported projects address climate change adaptation issues, the immediate challenge facing the Fund is to ensure that all IFAD activities at the country level are consistently built on an understanding of the potential effects of climate change; and that they take these into account as necessary and appropriate. IFAD's operating model provides for a range of new instruments and processes that are increasingly used to ensure that, in country strategies and in project design and implementation, attention is consistently given to issues of climate change.
41. To an increasing extent, results-based country strategic opportunities programmes (COSOPs) make explicit reference to climate change among those factors impacting on the agricultural sector and rural poverty in the country in question. Indeed, 12 of the 15 COSOPs presented at the Executive Board sessions of September and December 2007 and April 2008, and all eight COSOPs presented at the last two of these sessions, address issues of climate change in the country-specific context.⁹
42. Where climate change issues are identified in a COSOP as a major and growing determinant of rural poverty, this will influence project design. Furthermore, since the project design process is built, above all, on an analysis of the livelihoods of the targeted communities, increasingly this includes an analysis of the climate change issues that have an impact on these communities, and their current responses to these issues. Where the issues are critical to the livelihoods of the target group, they are addressed within the project design, typically in the ways described in section IV above.
43. To strengthen the focus on environmental issues in IFAD operations – including climate change-related issues – new procedures for environmental and social assessment are currently being developed.¹⁰ These procedures build on the evolving approaches of the international community to these issues and aim to ensure that:
 - (a) IFAD activities incorporate principles of environmental sustainability, maximize opportunities and enhance the livelihoods of poor rural people; and
 - (b) environmental and social considerations are integrated in a timely fashion where necessary. The procedures require that strategic environmental assessments be mainstreamed into COSOPs, and that environmental and social review notes be prepared for all projects entering the pipeline. Environmental and social impact

⁹ These were the COSOPs for Afghanistan, Bolivia, Cambodia, Jordan, Mali, Mexico, Moldova and Yemen.

¹⁰ These guidelines, which are expected to be issued during the second half of 2008, will replace IFAD's current Administrative Procedures for Environmental Assessment in the Project Cycle (1994).

assessments must be carried out for all projects that may have significant environmental and social implications.

44. Climate change issues are fully incorporated into the quality enhancement and quality assessment processes for project design. Both processes explicitly seek to ensure: (a) that the project risk assessment pays adequate attention to reducing the vulnerability of smallholder farmers to increased climatic uncertainty, including climate change; and (b) that the risk mitigation measures are credible, able to be carried out and adequately responsive to the findings of environmental screening and scoping exercises or assessment exercises. These processes ensure that all projects presented to the Executive Board adequately address climate change issues.
45. As IFAD takes over the direct supervision of a growing proportion of the projects that it finances, it will increasingly be able to ensure that projects respond to the constraints preventing the targeted rural populations from increasing their incomes and improving their food security. To the extent that climate change determines these constraints, the supervision process can be used to assist project managers in ensuring and maintaining this focus. In Swaziland, for example, as a result of direct supervision, the Lower Usuthu Smallholder Irrigation Project has been reshaped to take account of climate change issues.

Policy advocacy

46. IFAD's policy engagement to date is derived from its mandate. It has focused particularly on: (a) ensuring that global measures for adaptation and mitigation are not divorced from the international development community's efforts to reduce poverty and achieve the MDGs; (b) drawing attention to the needs of poor rural communities in adapting to climate change and the opportunities that they may have to contribute to mitigating its effects; and (c) improving poor rural communities' access to funding opportunities for adaptation and mitigation.
47. The Fund's engagement has been principally through the UNFCCC: for example, it actively participated in COP 13 in Bali; and it is currently participating in a series of workshops organized under the convention, which will feed additional information and proposals, relative to the Bali Action Plan, into the forthcoming COPs in Poznam and Copenhagen. Its influence on UNFCCC-related processes has also been through the United Nations system's coordination mechanisms – particularly the HLCP. One example is a presentation made by the United Nations Secretary-General in Bali, giving an overview of the coordination efforts of the United Nations system, which was based on the work undertaken by the HLCP and its Working Group on Climate Change.

Organizational responsibilities and capacity-building

48. Responsibility for climate change issues is organization-wide. Addressing climate change issues in the country and project cycle is principally the responsibility of the Programme Management Department (PMD), and in particular its five regional divisions. These are supported by the newly created Global Environment and Climate Change Unit,¹¹ which serves as PMD's technical arm on climate change issues, and supports the COSOP and project design processes. Responsibility for quality enhancement lies with the Technical Advisory Division of PMD, while quality assurance is managed by the Vice-President's Office. The Policy Division in the External Affairs Department leads IFAD engagement in global policy discussions and heads a policy review group on climate change, supported in both areas by PMD.
49. A crucial concern for IFAD has been to build in-house capacity relative to climate change issues. Two ongoing initiatives supported under the Innovation Mainstreaming Initiative are doing just that. The first, entitled "Strengthening IFAD's capacity to mainstream climate change adaptation in its operations", focuses on:

¹¹ Formerly the GEF Unit, this was established in 2004 to enhance IFAD's role as a GEF executing agency.

(a) reviewing other development agencies' experiences in mainstreaming climate change adaptation into their operations;¹² (b) conducting a portfolio review to learn more about how projects have dealt with climate change issues; and (c) developing design guidelines, methodologies and learning notes for mainstreaming adaptation measures. The second initiative, known as CLIMTRAIN, is a tailor-made staff training programme being implemented by the Global Environment and Climate Change Unit. The ongoing programme consists of three workshops and one seminar focused on climate change and agriculture, adaptation and mitigation. The first workshop took place in July 2008, with resource persons from the UNFCCC and GEF secretariats, the World Meteorological Organization, the European Commission, the United Nations Institute for Training and Research, and the University of Florence.

Partnerships

50. Partnerships are a critical way for IFAD to learn more about climate change and poor rural people, share its knowledge, strengthen the operations it supports, leverage additional funding in support of poor rural people, and influence the global policy agenda on climate change. IFAD is working with a growing number of partners: other United Nations agencies (above all the Rome-based agencies, but also the wider United Nations system, including the HLCP); other international financial institutions, research organizations and bilateral development agencies; private companies; and NGOs and civil society organizations (particularly those of farmers and indigenous peoples). Some of its key institutional partnerships to date are described below.
51. As one of the main financial mechanisms for climate change, the Global Environment Facility represents a key partner for IFAD. The IFAD/GEF engagement strategy aims particularly at nurturing linkages between poverty reduction, sustainable land management and climate change issues. Activities currently focus on adaptation (as, for example, the cofinanced projects described in section IV above), although the recent inclusion of land-use, land-use change and forestry activities in the GEF climate change focal area opens up major opportunities for IFAD to engage in climate change mitigation, in particular by working with local communities to develop activities to reduce emissions and sequester carbon.
52. IFAD also works with GEF on two regional umbrella initiatives. First, in sub-Saharan Africa, IFAD is a member of TerrAfrica – a regional partnership on sustainable land management that brings together all GEF agencies, the New Partnership for Africa's Development and the African Union, under World Bank leadership, in support of effective, efficient and sustainable country-driven land management practices across the region. IFAD has been allocated US\$23 million to support adaptation activities in Comoros, Eritrea, Ethiopia, Mauritania, the Niger and Swaziland. Second, IFAD is taking a lead in developing the programme for Integrated NRM in the Middle East and North Africa Region (MENARID), and in bringing together all GEF agencies in support of it. Like TerrAfrica, MENARID aims to advance the mainstreaming of sustainable land management so as to improve ecosystem resilience to climate change and drought.
53. In addition, as a GEF executing agency, IFAD helps its Member States access funding within the GEF adaptation programme. In particular, IFAD is assisting LDC governments in preparing concept notes for agricultural projects identified within

¹² A number of agencies have developed frameworks and methodologies for mainstreaming adaptation at country level, from which IFAD can learn. Examples include the African Development Bank's "Come Rain or Shine: Integrating Climate Risk Management into African Development Bank Operations"; the Asian Development Bank's Climate Change Adaptation through Integrated Risk Reduction (CCAIRR); the World Bank's Assessment and Design for Adaptation to Climate Change: A Prototype Tool (ADAPT); the Swiss Agency for Development and Cooperation's Community Risk Screening Tool – Adaptation and Livelihoods" (CRISTAL); the United Kingdom's Department for International Development's Opportunities and Risks from Climate Change and Disasters (ORCHID); the United Nations Development Programme's Strategic Environmental Assessment (SEA) approach; and the United States Agency for International Development's "Adapting to climate variability and change: A Guidance Manual for Development Planning."

their NAPAs, for onward submission to the GEF. The most advanced are the proposals for Comoros and Sierra Leone.

54. Reflecting its longstanding concern for natural resource management issues, IFAD has since 1997 hosted the Global Mechanism of the United Nations Convention to Combat Desertification (UNCCD). The Global Mechanism's role is to work with countries to mobilize financial resources in support of UNCCD implementation; IFAD has worked with the Global Mechanism on many occasions to mainstream UNCCD national action programmes into COSOPs, and to link IFAD-supported projects to Global Mechanism initiatives and UNCCD objectives. Increasingly, the Fund is doing so in the context of climate change. As part of the process of developing the new COSOP for Viet Nam, IFAD and the Global Mechanism analysed the impact of climate change and land degradation on local communities and the national economy, and identified responses. This work shaped the COSOP, and it is expected that future IFAD investments will assist the Government both in putting in place effective adaptation and mitigation measures, and in mobilizing resources from climate change financing mechanisms for pro-poor sustainable land management activities.
55. IFAD is also working closely with the other United Nations Rome-based agencies, FAO and the World Food Programme. The three agencies made a joint statement at COP 13 in Bali; and IFAD contributed to the preparation for FAO's High-Level Conference on World Food Security: the Challenges of Climate Change and Bioenergy, and participated in the conference itself. There have also been regular exchanges at a technical level: key examples include FAO participation both in an IFAD policy forum on climate change and in the roundtable on climate change, held during IFAD's 2008 Governing Council.
56. At the request of the UNFCCC secretariat, IFAD has joined the Nairobi work programme on impacts, vulnerability and adaptation to climate change. The programme, which currently brings together over 100 partners, aims to assist all UNFCCC parties, in particular developing countries, in (a) improving their understanding and assessment of impacts, vulnerability and adaptation and (b) making informed decisions, ones based on sound scientific, technical and socio-economic considerations, on practical adaptation actions and measures to respond to current and future climate change. IFAD's other key institutional partners include the CGIAR and the CGIAR-supported research centres (see paragraphs 26 and 37).

VI. The way forward: key actions

57. To strengthen further its engagement in climate change issues, IFAD will now:
 - Build on the achievements realized so far, and ensure that all IFAD activities at the country level are consistently built upon an awareness of the potential effects of climate change and take these into account as necessary. To achieve this, IFAD will vigorously pursue the agenda described in paragraphs 40-45 above.
 - Develop a corporate strategy on climate change, to be presented to the Executive Board for approval by December 2009. The strategy will draw on IFAD's current and past experience and on the practices and strategies of other development organizations,¹³ and it will serve to ensure a common understanding on key climate change issues and guide their full integration into both IFAD operations and its advocacy work.
 - Complement its core resources by being open to, and actively seeking, additional funding, including from new sources that are becoming available. This would

¹³ These include those of the World Bank (which is currently preparing a new paper: "Development and Climate Change: A Strategic Framework for the World Bank Group"), the African and Asian Development Banks, the Canadian International Development Agency, the Danish International Development Assistance, the Department for International Development, the German Agency for Technical Cooperation, the Norwegian Agency for Development Cooperation and the Organisation for Economic Co-operation and Development.

enable IFAD more rapidly and effectively to scale up its engagement in climate change issues, and to meet the additional costs that climate-related challenges impose on investments in development.

- Collaborate with partners (a) to support the development of a post-Kyoto regime that takes account of the concerns of poor rural communities – including indigenous peoples and their organizations – and ensure that they have a voice in its design, and (b) to work with these communities so that they can benefit from the new regime once it is in place.

