Environment and natural resource management POLICY

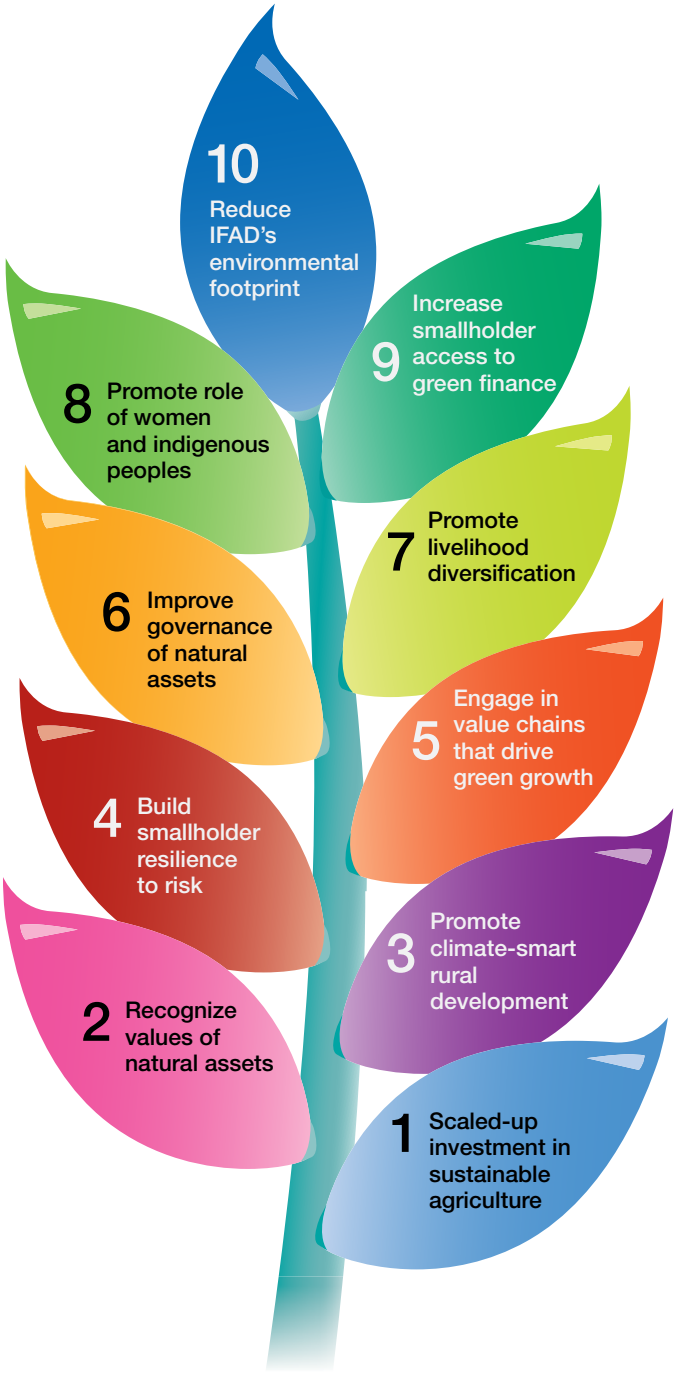
Resilient livelihoods through the sustainable use of natural assets

Enabling poor rural people to overcome poverty

IFAD

IFAD ENRM core principles

Productive and resilient livelihoods and ecosystems



1. Scaled-up investment in multiple-benefit approaches for **sustainable agricultural intensification**
2. Recognition and greater awareness of the economic, social and cultural **value of natural assets**
3. **'Climate-smart'** approaches to rural development
4. Greater attention to **risk and resilience** in order to manage environment- and natural-resource-related shocks
5. Engagement in **value chains** to drive green growth
6. Improved **governance** of natural assets for poor rural people by strengthening land tenure and community-led empowerment
7. **Livelihood diversification** to reduce vulnerability and build resilience for sustainable natural resource management
8. **Equality and empowerment for women and indigenous peoples** in managing natural resources
9. Increased access by poor rural communities to **environment and climate finance**
10. **Environmental commitment** through changing its own behaviour

A full description of the core principles begins on page 28.

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Policy

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Minor amendments have been included in this document to reflect comments received during Board deliberations and to incorporate the latest data available. IFAD does not guarantee the accuracy of the data included in this work. The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of IFAD concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries. The designations 'developed' and 'developing' countries are intended for statistical convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process.

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Contents

Abbreviations and acronyms

ARRI	Annual Report on Results and Impact of IFAD Operations
CCAFS	Climate Change Agriculture and Food Security (CGIAR)
CBD	Convention on Biological Diversity
CGIAR	Consultative Group on International Agricultural Research
COP	Conference of the Parties (UNCCD)
ECD	Environment and Climate Division
ENRM	environment and natural resource management
ESAP	Environmental and Social Assessment Procedures
FAO	Food and Agriculture Organization of the United Nations
GEF	Global Environment Facility
GHG	greenhouse gas
IBRD	International Bank for Reconstruction and Development (World Bank Group)
ICRAF	World Agroforestry Centre
IFAD	International Fund for Agricultural Development
IFI	international financial institution
IFPRI	International Food Policy Research Institute
ILC	International Land Coalition
IPM	integrated pest management
LDCF	Least Developed Countries Fund
LEED	Leadership in Energy and Environmental Design
NRM	natural resource management
PES	payment for environmental services
QE	quality enhancement
RB-COSOP	results-based country strategic opportunities programme
REDD+	Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
RES	reward for environmental services
RIMS	Results and Impact Management System
SCCF	Special Climate Change Fund
TEEB	The Economics of Ecosystems and Biodiversity
UNCCD	United Nations Convention to Combat Desertification
UNCSD	United Nations Conference on Sustainable Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WFP	World Food Programme

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Executive summary

Accelerating environmental degradation is eroding the natural asset base of poor rural people. About one billion extremely poor people, out of 1.4 billion, live in rural areas and about three quarters of them are dependent on agriculture and its related activities for their livelihoods. Sustainable environment and natural resource management (ENRM) lies at the heart of delivering poverty reduction for these people. Poor rural people face a series of interconnected natural resource management challenges. They are in the front line of climate change impacts; the ecosystems and biodiversity on which they rely are increasingly degraded; their access to suitable agricultural land is declining in both quantity and quality; their forest resources are increasingly restricted and degraded; they produce on typically marginal rainfed land, with increased water scarcity; energy and agricultural input prices are on a rising long-term trend; and declining fish and marine resources threaten essential sources of income and nutrition.

Environmentally damaging agricultural practices are a major driver of these challenges. Major gains in food production have been achieved through widespread adoption of technology packages and policies associated with the green revolution. But there is growing concern over inappropriate approaches that drive excessive use of fertilizers and pesticides, pollution of waterways and aquifers, build-up of salt in the soil, water scarcity in major river basins, declining levels of groundwater and loss of crop biodiversity. Large parts of Africa face a different problem, relying on rainfed agriculture with little or non-existent use of organic or inorganic fertilizers, soil erosion and poor access to seed varieties. Weak governance, damaging policies and changing consumption patterns lie at the heart of this environmental degradation: poor rural people, including smallholders, are often disempowered and thus unable to sustainably manage natural resources; a lack of clear land access and tenure rights removes incentives to maintain natural assets; distorting trade policies and fossil-fuel and other subsidies are key drivers; and the global population is growing rapidly. Further, there is increasing pressure on land, with a switch to meat diets (less efficient per calorie) and increasing use of land for biofuel rather than food production.

The knowledge and technology exist to tackle these challenges. The response requires an 'evergreen revolution', powered by sustainable agriculture that balances crop/livestock, fisheries and agroforestry systems, so that surplus inputs are avoided and soil fertility and ecosystem services are not compromised, while production and income are increased. Building on a growing body of evidence of the success of sustainable agriculture investments, there is a huge opportunity to further scale up 'multiple-benefit'[1] landscape approaches that reduce poverty, build resilience, increase food security, mitigate greenhouse gas emissions and promote sustainable agricultural intensification. Climate change provides the imperative for urgent action.

IFAD has years of experience helping poor rural communities manage their natural resources, but it has the potential to do a lot more. While some projects specifically target ENRM, it is fundamental to all IFAD projects. ENRM is at the core of delivering IFAD's poverty reduction and sustainable agriculture mandate because its target groups rely directly and indirectly on the environment and natural resources

1 Multiple-benefit approaches to sustainable agriculture seek to reduce risk and build climate resilience through more diversified landscapes, while at the same time reducing poverty, enhancing ecosystems and biodiversity, increasing yields and reducing greenhouse gas emissions.

for their livelihoods, and client demand for support for ENRM is increasing. Yet there is significant scope for further systematic integration of ENRM and climate change into IFAD's portfolio. There is also scope for further refinements to procedures and greater attention to ENRM issues in country strategies and project design. IFAD has made limited use of earmarked environmental cofinancing, and has the potential to have a bigger impact on ensuring that climate adaptation and ecosystem/biodiversity finance reach poor rural people. In almost half the loan projects presented to the Executive Board in 2009, value chains were either a separate component or the main focus. Thus IFAD has an opportunity to maximize the positive environmental impact of value chains and assess the downside risks. It can build on its comparative advantage of working through community-based approaches. Implementation of ENRM is knowledge intensive and requires additional efforts by IFAD in ENRM knowledge management, partnerships and advocacy.

Section II outlines the goal, purpose and 10 core principles:

The goal of this ENRM policy is:

To enable poor rural people to escape from and remain out of poverty through more-productive and resilient livelihoods and ecosystems.

The purpose is:

To integrate the sustainable management of natural assets across the activities of IFAD and its partners.

The policy sets out *10 core principles* to guide IFAD's support for clients in ENRM. The principles include both the core issues to be addressed and suggested approaches. In summary, **IFAD will promote:**

1. Scaled-up investment in multiple-benefit approaches for **sustainable agricultural intensification**;
2. Recognition and greater awareness of the economic, social and cultural **value of natural assets**;
3. **'Climate-smart'** approaches to rural development;
4. Greater attention to **risk and resilience** in order to manage environment- and natural-resource-related shocks;
5. Engagement in **value chains** to drive green growth;
6. Improved **governance** of natural assets for poor rural people by strengthening land tenure and community-led empowerment;
7. **Livelihood diversification** to reduce vulnerability and build resilience for sustainable natural resource management;
8. **Equality and empowerment for women and indigenous peoples** in managing natural resources;
9. Increased access by poor rural communities to **environment and climate finance**; and
10. **Environmental commitment** through changing its own behaviour.

Section III of the ENRM policy provides a detailed implementation strategy. The objective is the scaling up of ENRM and its systematic integration into IFAD's portfolio:

(a) **In operations**, the strategic objective is to scale up ENRM and systematically integrate it throughout the project cycle. Building on wider improvements in IFAD programme management, this will be achieved through respecting the 10 ENRM core principles, working towards the ENRM policy's best-practice statements (annex I), the participation of relevant climate and environment experts in country programme management teams, additional cofinancing incentives, significantly enhanced knowledge management and training, updating of IFAD's Environmental and Social Assessment Procedures, strengthened Results and Impact Management System measures for ENRM, and new tools for both project design and implementation.

(b) **In promoting knowledge, advocacy and partnerships** – because environmental, climatic and social conditions across countries and communities are so varied, implementation of the policy needs to be knowledge intensive. Key deliverables include: increasing global support for sustainable intensification techniques, greater climate change advocacy for poor rural people, new training and tools for IFAD staff on ENRM, increased IFAD engagement in environment networks, improving ENRM knowledge-sharing and learning mechanisms and greater attention to systematic measurement of environmental and social impacts. IFAD cannot achieve this policy by acting alone, and (as with the 2010 IFAD Climate Change Strategy) the theme of partnerships runs throughout the document. The policy aims to promote knowledge integration across communities of practice, including through South-South exchanges and farmer-to-farmer learning.

(c) **In resource mobilization**, the strategic objective is to support the integration of environmentally sound and 'climate-smart' practices across IFAD's lending portfolio. The use of additional supplementary funding to bolster systematic integration of ENRM into IFAD-supported programmes will be key to increasing incentives for its integration into upstream project design and implementation. IFAD faces a major opportunity to help smallholders benefit from increasing international public and private finance earmarked for environmental objectives – in particular on smallholder adaptation to climate change. In this sense, resources from international funds, such as the Global Environment Facility and the Adaptation Fund, will continue to be sought. In addition, IFAD will aim to leverage climate finance, including fast-track climate funding.

(d) **In internal organization**, staff skills and capacity and internal procedures must create incentives for ENRM integration into the portfolio. IFAD has the structure and most of the capacity it needs to step up its work on ENRM issues. Policy implementation will be a shared responsibility across the organization, including demonstrating the values of environmental awareness internally – a plan of action for greening IFAD will be developed in 2011 and will build on existing achievements.

(e) **In measuring success,** a time-bound results and implementation framework for the ENRM policy is presented in annex II. It embeds ENRM-related issues appropriately across IFAD's results-based measurement system. As a theme that runs throughout our work, the success of the strategy will be assessed through a number of proxy measurements largely related to portfolio performance and activity implementation.

Best-practice statements are presented on a range of issues. These illustrate application of the 10 ENRM core principles to areas of common engagement for rural development investments.

CASE STUDY

Participatory rangeland management in the Syrian Arab Republic

In the Syrian steppe (or Badia), IFAD is working on participatory rangeland management with local communities to reduce herders' vulnerability to climate change and restore the long-term productivity of rangelands. After years of severe drought and intensive grazing, rangelands in the Badia were severely degraded. By reintroducing native plants that help meet fodder requirements, fix the soil and stop sand encroachment, ecosystems were restored and the local population's vulnerability to the effects of climatic instability was reduced. After two years of resting, reseeding and planting, birds, insects and animals returned to the area. The rehabilitated ecosystems offered further potential for income generation, as truffles grow in some areas of the Badia, and women could gather them to boost their family incomes. In 2010, a community with a 100,000-ha grazing area could earn up to US$1 million through the sale of truffles.

Higher household incomes provided a basis for the project to diversify income-earning opportunities for women through literacy classes and training courses in new skills such as first aid, food processing and sewing. With households better off, there is less pressure on young girls to marry early, and as women gain more economic autonomy, they are finding that gender relations are shifting.

Background

At the Consultation on the Eighth Replenishment of IFAD's Resources in 2008, the Executive Board requested that a policy on environment and natural resource management be presented for approval.

The present policy is based on extensive in-house and targeted external consultations. It is the work of an internal IFAD policy reference group on environment and natural resource management, in which all key IFAD divisions played an active role. It builds on the broad range of existing IFAD policy and strategy papers[2] – especially the 2010 IFAD Climate Change Strategy – and IFAD's Environmental and Social Assessment Procedures (2009), numerous recent IFAD evaluation papers, over nine months of consultations by Environment and Climate Division staff, internally and externally, and thematic studies and portfolio reviews.

Annex I presents the best-practice statements that illustrate application of the 10 ENRM policy principles to areas of common engagement for rural development investments. Annex II provides a results and implementation framework for the policy.

2 A list of IFAD policy documents is available at www.ifad.org/operations/policy/policydocs.htm. A list of IFAD strategy documents is available at http://www.ifad.org/pub/strategy/index.htm. Consultations were conducted in Nairobi (September 2010); China (October 2010); partner agencies in Washington, DC (Multilateral Financial Institutions/Working Group on Environment, November 2010); Rome (FAO, WFP, United Nations Permanent Forum on Indigenous Issues, February 2011); and Vienna (Poverty Environment Partnership, February 2011).

I. The context: accelerating environmental degradation is eroding the natural asset base of poor rural people

Poor rural people and natural resources

About one billion of the world's 1.4 billion extremely poor people live in rural areas and depend on agriculture and related activities for their livelihoods. As the most vulnerable and marginalized people in rural societies, IFAD's target group – poor rural people, including smallholder farmers, fishers, pastoralists, agroforesters and indigenous peoples – are central to both the causes of and solutions for sustainable environment and natural resource management (ENRM).[3] Agriculture and other rural livelihood activities are in essence a series of complex interactions with the natural environment and are inherently natural resource dependent, shaping the rural economy and thus IFAD's focus on tackling rural poverty. Poor rural people are directly and indirectly dependent on natural resources for their livelihoods, relying on a suite of key natural assets from ecosystem and biodiversity goods and services to provide food, fuel and fibre.

Food insecurity and malnutrition remain among the world's most serious health problems. In low- and middle-income countries, nearly one third of children are underweight or stunted. Environmental degradation and especially climate change are increasingly affecting nutrition through their impact on food security, sanitation, water and food safety, health, maternal and child health-care practices and socio-economic factors. A recent study by the International Food Policy Research Institute (IFPRI) indicates that in low-income countries, under an optimistic scenario, climate change could increase the number of malnourished children by 9.8 per cent by 2050.[4]

The world's poor rural people and especially farmers of the 500 million smallholdings[5] are both victims and drivers of environmental degradation, and account for a major share of the world's poor. They account for one third of the global population and constitute the largest share of the developing world's undernourished. They also provide up to 80 per cent of the food consumed in a large part of the developing world. Smallholder farmers manage vast areas of land and natural resources – representing more than 80 per cent of farms in Africa and Asia. They are the backbone of the rural economy and are in the front line of managing natural resources and climate impacts, relying directly on climate-affected natural resources for their livelihoods and being especially vulnerable to health and nutrition challenges.

Poor rural people – including poor smallholders – are facing a series of interconnected natural-resource management challenges, which risk reversing impressive gains made over the past century in reducing poverty:

(a) **Poor rural people are in the forefront of climate change impacts.** They rely directly on climate-impacted natural resources for their livelihoods. These impacts are already occurring,[6] and future projections for climate change indicate enormous potential disruption. In the absence of a profound step-change in

3 For the purposes of this policy, the term 'environment and natural resource management' (ENRM) focuses on the use and management of the natural environment, including natural resources defined as raw materials used for socio-economic and cultural purposes, and ecosystems and biodiversity – together with the goods and services they provide.

4 IFPRI, *Food Security, Farming, and Climate Change to 2050: Scenarios, results, policy options* (Washington, DC: International Food Policy Research Institute, 2010), chap. 2, p. 47.

5 For the purposes of this policy, 'smallholding' is used in a broad sense to include not only farms of less than 2 hectares – primarily dependent on household labour and rainfed – but also pastoralists, agroforesters and artisanal fishers.

6 IPCC, "Impacts, Adaptation and Vulnerability," in *Fourth Assessment Report: Climate change 2007*, eds. M. Parry et al., Intergovernmental Panel on Climate Change, contribution of Working Group II (Cambridge, UK: Cambridge University Press, 2007), www.ipcc-wg2.gov/publications/AR4/index.html.

The problem today is that no matter how hard you work, it's never enough to feed the family... For about a year, perhaps more, there have been no rains... The men have left to work outside the village. The main labour force here is women... The biggest problem is that of water... We work day and night on irrigation... Those that are landless...are the poorest... We are not using the forests in an adequate and proper way; we cut down trees and burn our woods every day, we are destroying nature.

Summary of the voices of poor rural people, *Rural Poverty Report 2011*[7]

local and global action on climate change, it is increasingly likely that poor rural people would need to contend with an average global warming of 4 degrees above pre-industrial levels by 2100, if not sooner.[8] Such substantial climatic change will further increase uncertainty and exacerbate weather-related disasters, drought, biodiversity loss, and land and water scarcity. Perhaps most significantly for farmers, they can no longer rely on historical averages, making it harder for them to plan and manage production when planting seasons and weather patterns are shifting.

(b) **Typically producing on marginal rainfed land, poor rural people are facing increased water scarcity.** Water scarcity is compounded by population growth, increasing demand for agricultural products and climate change. About 40 per cent of the world's population lives in moderately to highly water-stressed countries.[9] According to the Global Environment Outlook – Environment for Development (GEO-4), water withdrawals are predicted to increase by 50 per cent by 2025 in developing countries, and by 18 per cent in developed countries. Over 1.4 billion people currently live in river basins where the use of water exceeds minimum recharge levels – leading to the shrinking of rivers and a reduction of groundwater resources.[10] Agriculture accounts for 70 per cent of global freshwater use,[11] and some 15 to 35 per cent of agricultural water use is considered unsustainable.[12] Many poor rural people face severe constraints on accessing good quality and quantities of potable water for domestic and agricultural use.

(c) **Ecosystems, biodiversity and the associated goods and services on which poor rural people rely are under increasing pressure.** The Millennium Ecosystem Assessment[13] reports that approximately 60 per cent (15 of 24) of key ecosystem services are degraded and used unsustainably, with the natural resources critical to agricultural production and livelihood security for the world's poorest people in rapid decline. Global agriculture is the most significant driver of biodiversity loss, through land conversion, monoculture and excessive use of pesticides. Twenty-two per cent of all plant species face extinction, with 75 per cent of crop diversity lost from 1900 to 2000.[14] Today, just some 15 crop plants provide 90 per cent of the world's food energy intake, rendering the global food system highly vulnerable to shocks. Rapid biodiversity loss, coupled with impacts on ecosystem functions and on the goods and services they provide, are undermining poor rural people's resilience and their ability to escape from and remain out of poverty.

(d) **The availability of suitable agricultural land accessible to poor rural people is declining in both quantity and quality**. About 1.2 billion ha (almost 11 per cent of the Earth's vegetated surface) has been degraded by human activity over the past

7 IFAD, *Rural Poverty Report 2011* (Rome: International Fund for Agricultural Development, 2010), www.ifad.org/rpr2011/index.htm.

8 Richard A. Betts et al., "When could global warming reach 4°C?" in *Four degrees and beyond: the potential for a global temperature increase of four degrees and its implications*, eds. M. New et al. (London: The Royal Society, A: Mathematical, Physical & Engineering Sciences, 2011), http://rsta.royalsocietypublishing.org/content/369/1934/67.full.

9 'Water stress' is defined as less than 1,700 cubic metres available per person per year, and 'water scarcity' is less than 1,000 cubic metres.

10 UNDP, *Human Development Report 2006: Beyond scarcity – power, poverty and the global water crisis* (New York: United Nations Development Programme, 2006).

11 Cosgrove, W.J. & Rijsberman, F.R., *World Water Vision: Making Water Everybody's Business* (London, UK: Earthscan, 2000), http://www.worldwatercouncil.org/fileadmin/wwc/Library/Publications_and_reports/Visions/CommissionReport.pdf.

12 Ibid.

13 United Nations Millennium Assessment Board, *Millennium Ecosystem Assessment: Ecosystems and human well-being – current state and trends assessment* (Washington, DC: Island Press, 2005), vol. 1, www.maweb.org/en/Condition.aspx.

14 FAO, *The State of the World's Plant Genetic Resources for Food and Agriculture*, second report (Rome: Food and Agriculture Organization of the United Nations, 2010).

45 years. An estimated 5 to 12 million ha are lost annually to severe degradation in developing countries.[15] The United Nations Environment Programme (UNEP) estimates that erosion and chemical and physical damage have degraded about 65 per cent of agricultural lands in Africa.[16] Demand for land for food, fuel, fibre, mining, carbon sequestration and tourism is sharply increasing. This is leading to increased incidence of large-scale land investments. The World Bank reports[17] that 56.6 million ha of land in 2008-2009 were under negotiation for large-scale investment, prompting concern for the risks and opportunities for smallholder agriculture. Without adequate governance, these rapid changes may impact negatively on poor rural livelihoods by reducing security of tenure and access to natural resources.

(e) **Access of poor rural people to forest resources is being undermined by continued forest degradation.** Some 1.6 billion people – and especially the poorest and indigenous peoples – rely directly on forest products for their livelihoods.[18] Forest resources provide a range of natural assets critical to livelihoods, for example food, fuel, timber, medical and pollination services and other non-timber forest products. These should be managed sustainably, as their overexploitation can lead to local extinction of certain products.[19] In addition, forests provide important ecosystem services, such as regulating water quality and flow, and acting as carbon sinks. While there have been encouraging recent improvements in reducing forest loss, rates of deforestation and forest degradation remain high, with an average annual decline in forest area of 5.2 million ha between 2000 and 2010.[20] Over the past two decades, agricultural expansion combined with timber extraction and expansion of infrastructure have been the main proximate causes of deforestation in tropical areas.[22] Unsustainable farming methods continue to be the greatest threat to forests, and climate change will increase pressure to convert forests to agricultural land. Inequitable land distribution and insecure land tenure are also underlying causes of deforestation. Swidden agriculture has sustained human life in most rainforest areas for thousands of years, with no obvious adverse impact on forests. However, in recent times, a combination of growing populations, shrinking forest areas and production for markets has resulted in unsustainable cycles, with insufficient time for regrowth of the native vegetation.

Many systems of food production are unsustainable. Without change, the global food system will continue to degrade the environment and compromise the world's capacity to produce food in the future, as well as contributing to climate change and the destruction of biodiversity.

The Future of Food and Farming[21]

(f) **Energy and agriculture input prices are on a rising long-term trend.** This is raising agricultural production costs, especially for fertilizer and transport. While increased energy demand can create new market opportunities (and risks) – especially for production of biofuels – overall, the trend is increasingly constraining agricultural production and livelihood security. Higher prices for key agricultural inputs such as fertilizer, seed and energy make it harder for many farmers to increase production. Particularly hard hit are poor subsistence producers, who are confronted with higher input prices, without the security of a marketable surplus that could earn them higher revenues as food prices increase.

15 IFPRI, *Soil Degradation: A threat to developing-country food security by 2020?*, Food, Agriculture and the Environment Discussion Paper 27 (Washington, DC: International Food Policy Research Institute, 1999).

16 UNEP, *Africa: Atlas of our changing environment* (Nairobi: United Nations Environment Programme, 2008).

17 World Bank, *Rising Global Interest in Farmland: Can it yield sustainable and equitable benefits?* (Washington, DC, 2009), p. 51, http://siteresources.worldbank.org/INTARD/Resources/ESW_Sept7_final_final.pdf.

18 www.unep.org/billiontreecampaign/FactsFigures/QandA/index.asp.

19 www.iucn.org/about/work/programmes/forest/fp_our_work/fp_our_work_thematic/fp_our_work_fpr/fp_forests_poverty_our_work/fp_forests_poverty_our_work_non_timber/.

20 FAO, *Global Forest Resources Assessment 2010*, Forestry Paper 163 (Rome: Food and Agriculture Organization of the United Nations, 2010).

21 Foresight, *The Future of Food and Farming,* final project report (London: Government Office for Science) www.bis.gov.uk/assets/foresight/docs/food-and-farming/11-546-future-of-food-and-farming-report.pdf.

22 UNEP, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication,* (Nairobi: United Nations Environment Programme, 2011), p. 163, www.unep.org/greeneconomy/Portals/88/documents/ger/ger_final_dec_2011/Green%20EconomyReport_Final_Dec2011.pdf.

CASE STUDY

Sustainable forest management in Mexico

IFAD is beginning implementation of a sustainable forest management project in Mexico that will benefit 18,000 rural families dependent on forest resources. The Community-based Forestry Development Project in Southern States (Campeche, Chiapas and Oaxaca) will strengthen the capacity of indigenous peoples, who represent 76 per cent of the target population, and other local foresters in these states to better manage their natural resources, enhancing conservation practices and providing sustainable income options for the most disadvantaged groups. The project is based on *ejidos* and *comunidades*, two communal forms of land ownership, and will help consolidate the organizational and planning capacities of the beneficiary population for participatory management of their common natural resources.

With support from the GEF, the project will also pilot ways for the government and communities to contribute to climate change mitigation through better land and forest use, and to access carbon finance as part of the new Mexican Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD+) strategy. The project will reduce GHG emissions and increase carbon sequestration through improved forest management and production techniques, while generating subsistence alternatives and other benefits. Sustainable forest management pilot activities are expected to generate nearly 18 tons $C0_2$ (e.g. through carbon sequestration of emissions avoided). The project will also assist the government in testing communal measurement, reporting and verification activities, contributing in this way to strengthening national capacities on climate change at the local level.

(g) **Declining fish and marine resources threaten an essential source of nutrition for over one billion people.** Over 500 million people in developing countries depend directly on marine and freshwater fisheries and aquaculture for their livelihoods; women make up 50 per cent of those working in small-scale and inland fisheries.[23] Developing countries account for some 80 per cent of global fish production and about half of the global fish trade,[24] thus making fish essential to food security as a source of both food and income. However, over 80 per cent of fish stocks are now fully exploited or worse,[25] and most are at risk from pollution, invasive species, biodiversity loss and increasing temperatures caused by global warming. Despite this, just 1 per cent of the world's oceans are protected, compared with over 12 per cent of the earth's land surface.[26] Inland freshwater fisheries represent up to 11 per cent of all fish trade and help maintain biodiversity, while providing essential and irreplaceable elements in the diets of both urban and rural people – especially in developing countries.[27] Aquaculture now provides over 50 per cent of all fish consumed and is the world's fastest growing form of animal food production. It will become increasingly important for food security and as a source of income and employment in developing countries, which already account for more than 90 per cent of aquaculture production by volume.[28] However, this growth must be managed responsibly to avoid negative social and environmental impacts, including pollution, damage to aquatic biodiversity and conflict over resource rights. Coastal communities are in the front line of climate change and are vulnerable to sea-level rise, extreme weather, changing fish stock distribution, eroding coastlines, loss in biodiversity, tourism amenity values, and the impact of ocean acidification on food security and coastal defence. The world's oceans provide essential but deteriorating global environmental services, including nutrient cycling, gas exchange, biodegradation of pollutants, a hydrological cycle and carbon sinks.

Environmentally damaging agricultural practices are a major driver of the above challenges:

(a) **Major gains in food production over the past half-century have been achieved through widespread adoption of technology packages and policies associated with the green revolution.** These included the introduction of semi-dwarf high-yielding varieties of wheat and rice, associated with irrigation and higher levels of inputs such as inorganic fertilizers and pesticides. Governments put in place supportive policies and investments that provided small farmers with a secure, remunerative and low-risk environment. They invested in infrastructure and ensured that farm credit got to farmers, and they subsidized and, in some cases, distributed inputs (i.e. fertilizer and water). They also invested substantially in agricultural research, provided farmer extension services and intervened in markets to stabilize farm-gate prices.

(b) **But concern is increasing over inappropriate agricultural intensification using green-revolution approaches.** Excessive and inappropriate use of fertilizers and pesticides and the pollution of waterways and aquifers has led to beneficial insects and other forms of wildlife being killed along with pests. There have also been negative consequences for human health, such as pesticide poisoning[29] and rising rates of cancer. Poor irrigation management has resulted in the build-up of salt in the soil (salinization). Excessive irrigation has also resulted in water scarcity in major river basins and in declining levels of groundwater, as a result of more water being pumped than

23 FAO, *The State of World Fisheries and Aquaculture 2010 (SOFIA)* (Rome: Food and Agriculture Organization of the United Nations, 2010).

24 World Bank, *Turning the Tide: Saving fish and fishers – building sustainable and equitable fisheries governance* (Washington, DC: International Bank for Reconstruction and Development (IBRD)/World Bank, 2005).

25 FAO, *SOFIA 2010*.

26 www.iucn.org/about/work/programmes/pa/pa_what/?4646/Marine-Protected-Areas--Why-have-them.

27 FAO, *The State of World Fisheries and Aquaculture 2008* (Rome: Food and Agriculture Organization of the United Nations, 2009), p. 8.

28 FAO, *SOFIA 2010*.

29 Unintentional pesticide poisoning kills 355,000 people per year, two thirds of them in developing countries (*World Development Report*, 2008).

can be naturally replenished. The rate at which global groundwater stocks are shrinking has more than doubled from 1960 to 2000, increasing the amount lost from 126 to 283 cubic kilometres (30 to 68 cubic miles) of water per year.[30] The planting of new crop varieties in the place of traditional ones has resulted in a loss of crop biodiversity where there is no system to conserve germplasm. Rural income disparities were heightened in some countries, as larger producers were more easily able to adopt the new technologies, while poorer farmers were often left behind. New technology is important, but the value of traditional knowledge and seed varieties held by farmers was often overlooked.

(c) **In many parts of Africa, there is a different challenge.** Desertification has its greatest impact in Africa. Two thirds of the continent is desert or dryland. There are extensive agricultural drylands, almost three quarters of which are already degraded to some degree.[31] The International Centre for Soil Fertility and Agricultural Development estimates that Africa loses 8 million tons of soil nutrients per year, and over 95 million ha of land have been degraded to the point of greatly reduced productivity. About 85 per cent of African farmland had yearly nutrient mining rates of more than 30 kilograms (kg) per ha during the cropping seasons 2002/04, and about 40 per cent of farmland exceeded 60 kg/ha yearly.[32] Large parts of Africa were bypassed by the green revolution, continuing to rely on rainfed agriculture with little or non-existent use of organic or inorganic fertilizers and poor access to seed varieties. Climate change will affect drylands, and to fulfil their agricultural potential, improvement of vegetation cover and soil conservation must be at the centre of adaptation work.[33]

Weak governance, damaging policies and changing consumption and production patterns lie at the heart of these environmentally damaging agricultural practices:

(a) **Poor rural people are often disempowered and thus unable to manage natural resources sustainably.** "The root of smallholder vulnerability lies in the marginalisation of farmers, pastoralists and other rural groups in power and decision-making over their land and other natural resources. This is a fundamental problem for smallholders everywhere, and a consequence of their large numbers, weak and costly organisation and consequent very limited political power."[34] Some poor rural people are particularly disadvantaged: women because of their roles as primary producers of food and collectors of water, fuel and non-timber forest products; indigenous peoples because of their high dependence on the natural resource base; youth through limited employment prospects; and the elderly because of their social marginalization.

(b) **Inappropriate policies are driving environmental degradation.**[35] Distorting trade policies and fossil-fuel and other subsidies, together with a lack of effective land management policies, are key constraints, restricting the access of poor rural people to secure, varied markets and diversification of the non-farm rural economy. Domestic subsidies in high-income countries often diminish the comparative advantages that developing countries may have in agricultural trade, making it unviable for smallholders in the developing world to produce certain products and thus negatively affecting their poverty reduction efforts.[36] In addition, there have been consistent failures to recognize the diversity of social, cultural, economic and financial values associated with the natural

30 Marc F.P. Bierkens et al., "A worldwide view of groundwater depletion," in *Geophysical Research Letters* (DOI 10.1029/2010GL044571).

31 www.unccd.int/regional/africa/menu.php.

32 J. Henao and C. Baanante, *Agricultural Production and Soil Nutrient Mining in Africa: Implications for resource conservation and policy development*, Technical Bulletin IFDC T-72 (Muscle Shoals, AL, USA: International Center for Soil Fertility and Agricultural Development, 2006).

33 Statement by UNCCD Executive Secretary Luc Gnacadja, prepared for the Second International Conference: Climate, Sustainability and Development in Semi-arid Regions (ICID 2010), Fortaleza, Brazil, 16 August 2010.

34 Camilla Toulmin, *Prospering Despite Climate Change*, paper presented at the IFAD Conference on New Directions for Smallholder Agriculture, 24-25 January 2011, Rome, www.ifad.org/events/agriculture/index.htm.

35 World Bank, *World Development Report 2008* (Washington, DC, 2007), chap. 4, http://siteresources.worldbank.org/INTWDR2008/Resources/2795087-1192112387976/WDR08_08_ch04.pdf.

36 UNEP, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication* (Nairobi: United Nations Environment Programme, 2011), www.unep.org/greeneconomy/GreenEconomyReport/tabid/29846/Default.aspx, p. 61.

environment. A root cause of such failures is often the segmentation of issues at local, national and international levels, where some ministries are tasked with maximizing agricultural production and others with protecting the environment, often without a coherent overall plan that reconciles various policy objectives. These governance failures increase risk, promote environmental degradation and undermine poor rural people's resilience to sustainably manage their own natural assets to withstand a range of shocks.

(c) **A lack of clear land access and tenure rights reduces incentives to maintain natural assets.** An estimated 1 to 2 billion people globally live on and use commonly held land, over which they have no legal title. This land is crucial to the livelihoods of the poorest people and provides important ecosystem services, but it is often particularly vulnerable to improper land acquisition and fragmentation. Poor rural people often have poorly defined property rights and limited income and access to credit and insurance markets. They operate within weak institutional and policy frameworks, which prevent them from investing as much as they should in improved environmental sustainability and natural resource management (NRM). Frequently the land and natural resources that poor rural people depend on are common-pool resources, forming an important safety net for the poorest people, but suffering limited legal recognition for community tenure and customary management systems, which makes them vulnerable to degradation. These governance failures lead to both a consistent lack of incentives to maintain natural assets and insufficient accounting to reflect the true economic values of resource use – instrumental for better and fairer decision-making.

(d) **Consumption patterns are increasing and changing, intensifying the pressure on existing land.** While the world currently produces enough food to feed everyone,[37] increasing demands on land will have significant repercussions for water resources, disease and health implications, damage to ecosystems and increased competition for agricultural land. Population growth will have an impact as well. From 1980 to 2000, total world population grew from 4.4 to 6 billion. By 2015, at least another billion people will be added, to total more than 7 billion, and 9.2 billion will be reached by 2050.[38] Global demand for livestock products is expected to double over the next 20 years;[39] in developing countries, demand will grow faster than production. Diets in developing countries are changing, and more meat is eaten as incomes rise. The share of staples, such as cereals, roots and tubers, is declining, while that of meat, dairy products and oil crops is rising. Demand for meat products is expected to rise steeply, from 1.2 million tons a year in 1997-1999 to 5.9 million tons in 2030. By that year, per capita consumption of livestock products could rise by a further 44 per cent.[40] While there are new opportunities for energy production, there are also new risks – increased demand for biofuels is often cited as driving up food prices and taking up agricultural land. Food wastage remains high – according to UNEP,[41] only an estimated 43 per cent of cereal production is available for human consumption, as a result of harvest and post-harvest distribution losses, among others.

37 World agriculture produces 17 per cent more calories per person today than it did 30 years ago, despite a 70 per cent population increase. This is enough to provide everyone in the world with at least 2,720 kilocalories (kcal) per person per day, www.worldhunger.org/articles/Learn/world%20hunger%20facts%202002.htm; and FAO, *Reducing Poverty and Hunger: The critical role of financing for food, agriculture and rural development*, 2002, p. 9, www.fao.org/docrep/003/Y6265e/y6265e00.htm.

38 www.un.org/popin/.

39 FAO, *World agriculture towards 2015/2030* (Rome: Food and Agriculture Organization of the United Nations, 2002), www.fao.org/docrep/004/y3557e/y3557e03.htm.

40 Ibid.

41 UNEP, *The environmental food crisis: The environment's role in averting future food crises* (Nairobi: United Nations Environment Programme, 2009), www.unep.org/pdf/FoodCrisis_lores.pdf.

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CASE STUDY

Rewards for environmental services in Asia and Africa

Payments for environmental services (PES), including watershed restoration and maintenance, are potential sources of substantial financing to support rural communities' management of their natural assets, and to provide benefits to downstream water users or other communities. But while it may be simple enough to identify those who provide environmental services and the beneficiaries of those services, creating contractual relationships between them has proved thorny.

Recent work in Africa tested innovative techniques for promoting PES through negotiated environmental service contracts with poor communities based on the principles of 'willingness to provide services' and 'willingness to pay'. This work was funded by an IFAD grant to the World Agroforestry Centre (ICRAF) – Pro-poor Rewards for Environmental Services in Africa (PRESA) – which is linked to IFAD-supported investment projects in Guinea, Kenya, Uganda and the United Republic of Tanzania.

Similar work with ICRAF is ongoing in Asia, where the programme Rewards for, Use of and Shared Investment in Pro-poor Environmental Services (RUPES) is currently active in 12 sites in China, Indonesia, the Lao People's Democratic Republic, Nepal, the Philippines and Viet Nam. In Indonesia alone, over 6,000 farmers in 18 communities received permits to grow coffee while protecting the forests. Providing communities with clear land tenure rights gave them the incentive to maintain or restore environmental services, such as replanting and managing forest areas. One community negotiated with a private dam operator to reduce silt in the river by applying soil protection techniques on their plots in return for a microhydroelectric machine for energy supply. The company then engaged in negotiations with communities upstream of other dams. The activities also benefit lowland communities by protecting the watersheds, and they shore up carbon sinks. These activities are providing further evidence that PES incentives do not necessarily need to be financial, but can be provided in the form of secure land rights.

Because of this, ICRAF prefers the phrase 'reward for environmental services' (RES) instead of 'payment'. Rewards can include a range of incentives, including cash payments, low-cost information, marketing, input and credit services, and conditional property rights.

What needs to change?

A perception of a universal trade-off between food production and the environment has for too long dominated policy thinking. A juxtaposition of reducing poverty, tackling climate change, feeding the world and protecting the environment as any one singular option is a false choice. Some trade-offs do exist in the short run and these should be properly costed and reduced. In the long run, though, these are often false trade-offs, as continued agricultural production cannot be sustained if it is at the cost of undermining natural assets.

What is needed is an 'evergreen revolution' in agriculture[42] that reduces poverty and maximizes productivity, while at the same time ensuring environmental sustainability. Such an evergreen revolution must redefine the relationship between agriculture and the environment, and reverse the declining investment in agriculture over the past decades. It must recognize the often unsustainable, heavy reliance of the green revolution on non-organic external inputs, recognize ecosystem-based land-use planning as a tool for improving land management, and include smallholders as important custodians of natural resources and as entrepreneurs with the capacity to invest in natural assets and contribute to national and global production systems. Climate change now provides the imperative for us to do this and to deliver a new green agroecological revolution. Fortunately, as set out below, there is an array of sustainable agriculture approaches, ready for scaling up, that increase yields and food security, increase resilience to climate and other risks and shocks, reduce greenhouse gas (GHG) emissions and do not degrade the environment.

The goal of the agricultural sector is no longer simply to maximize productivity, but to optimize it across a far more complex landscape of production, rural development, environmental and social justice outcomes.

Professor Jules Pretty, University of Essex, United Kingdom[43]

There is a huge opportunity to further scale up 'multiple-benefit' approaches that promote sustainable agricultural intensification.[44] IFAD's *Rural Poverty Report 2011*[45] highlights a toolkit of integrated multiple-benefit approaches. Examples (often overlapping) include: balanced-input agriculture, sustainable land management, conservation agriculture, agroforestry, forest management, landscape approaches, watershed management, integrated pest management, integrated plant nutrient management, organic agriculture, rangeland management and, more broadly, integrated food energy systems. They are described as 'multiple-benefit' because they typically have positive impacts on climate resilience, biodiversity, yields and reduction of GHG emissions – a range of local and global public goods.

Such approaches promote the efficient use of seed, fertilizer, land, water, energy and labour and are grounded in strengthening good governance through community empowerment, including clear land access rights. This wide range of approaches typically includes the following elements:

(a) Maximum use of natural processes such as nutrient cycling, nitrogen fixation and integrated pest management – with greater productive use of the biological and genetic potential of micro-organisms, plant and animal species;

42 www.ifad.org/media/press/2010/52.htm.

43 J. Pretty et al., "The top 100 questions of importance to the future of global agriculture," *International Journal of Agricultural Sustainability* 8, no. 4 (2010): 219-236.

44 IFAD, *Rural Poverty Report 2011*, chap. 5, p. 156.

45 Ibid., chap. 5, p. 145.

(b) Reduction in the use of external inputs with the greatest potential to harm the environment or the health of farmers and consumers;

(c) Improvement in the match between cropping patterns and productive potential to ensure long-term sustainability of current production levels;

(d) Efficient production – with emphasis on improved land management and conservation of soil, water, energy and biodiversity through coordinated landscape-based approaches; and

(e) A focus beyond increasing production, for example through reducing food wastage due to post-harvest and post-marketing losses.

Such approaches are typically knowledge intensive and heterogeneous, and need to be tailored to local circumstances. Local knowledge (including that of women) must be linked with modern science and key institutions that impact NRM. It is by now well known that local knowledge of the management of natural assets is often quite robust. It is also well documented that disempowering those who hold local knowledge may result in degradation of natural assets that undermine local livelihoods. In addition, women are often the holders and conveyors of key knowledge of local species, seeds and medicinal plants, and have a more-vested interest in management of water and marginal household land. In the face of long-term climate and environmental challenges, we know that today's knowledge and technologies will no longer be reliable and suitable. There is a long list of promising technologies, some of which are new to the market, that require promotion, piloting and scaling up – including the use of global information systems for landscape mapping, local climate prediction technologies, innovative use of communications technologies for smallholder communities, new and improved seed varieties and improved water management technologies.

Climate change provides the necessary imperative for scaling up such multiple-benefit approaches. Agriculture needs to simultaneously increase yields, adapt to climate change and reduce emissions. Culture and land-use changes are a major source of GHGs (methane, nitrous oxide and carbon dioxide), accounting for 14 and 17 per cent of global emissions respectively.[46] Chapter 3 of the *Rural Poverty Report 2011*[47] highlights climate change and extreme weather events as 'risk multipliers', as they exacerbate the fragility of the natural resource base, especially in vulnerable environments. This increases the scale of volatility and risk, requiring a better understanding of long-term trends and new types of risk.

Climate uncertainty is no reason for inaction. First, there are new opportunities to reduce uncertainty (using downscaled climate modelling) that are grounded on concurrence among global climate models, combined with refinement of existing best practices for reducing vulnerability and strengthening resilience. Second, to cope with remaining uncertainty, there are many actions that have significant development benefits under a range of climate and environment scenarios. These are often described as 'no-regret' options.[48] They help communities build resilience to withstand a range of potential shocks while adjusting to longer-term environment and climatic trends, where these are clear. The integrated multiple-benefit examples listed above typically lead to more resilient farming

46 FAO, *Coping with a Changing Climate: Considerations for adaptation and mitigation in agriculture*, Environment and Natural Resources Management Series 15 (Rome: Food and Agriculture Organization of the United Nations, 2009), www.fao.org/docrep/012/i1315e/i1315e00.htm.

47 IFAD, *Rural Poverty Report 2011*, p. 83.

48 The 'no-regret' aspect of adaptation means taking climate-related decisions or actions that make sense in development terms, whether or not a specific climate threat actually materializes in the future.

systems and local economies owing to: better crop diversity and biodiversity, nutrient-rich soil with higher rates of water retention, and a greater ability to withstand weather extremes and climate volatility. A diversified production system and a diet focused on nutrition can also help both households and rural communities build their resilience.

The global public good of climate mitigation is one of the major benefits of such multiple-benefit approaches. These approaches typically contribute the following: enhanced soil fertility and improved soil carbon retention; increased vegetation, especially through more tree cover; reduced nitrous oxide (N_{20}) and methane (CH_4) emissions, respectively, through improved nutrient, livestock and manure management; and reduced carbon dioxide ($C0_2$) emissions through alternatives to the unsustainable use of slash-and-burn practices and elimination of burning crop residues. In the absence of carbon markets that include smallholders, this poverty- and yield-driven approach, with strong mitigation co-benefits, is the most effective way of achieving emission reductions from smallholder farming. Take the example of agroforestry: planting acacia trees in maize fields in Africa has led often to a doubling of yields, while increasing the resilience of the soil to land degradation by improving its organic and nitrogen content, water-retention capacity and moderation of the microclimate. At the same time, it is reducing soil carbon emissions by maintaining greenery and through tree growth, and increasing biodiversity through provision of diversified habitat and offering a source of food to both wild and domesticated animals. Another example is aiding pastoralists in managing the land better, which can have a great impact on their livelihoods, but also on GHG emission reductions. Considering the importance of rangelands in land use (about 40 per cent of the total land surface), herders and pastoralists could play a crucial role in soil carbon sequestration. All over the world, there are some 100 to 200 million pastoralist households covering 5,000 million ha of rangelands – in which are stored 30 per cent of global carbon stocks.[49]

Assessing IFAD's experience

Sustainable NRM is fundamental in delivering IFAD's poverty reduction and sustainable agriculture mandate. IFAD's strategic framework recognizes this interdependence and stresses that, in order to reduce poverty and enhance food security, IFAD must "ensure that poor rural people have better access to, and the skills and organization they need to take advantage of, natural resources, especially secure access to land and water, and improved natural resource management (NRM) and conservation practices."[50] Historically, IFAD has recognized ENRM in a wide range of policy documents.[51] The present ENRM policy builds on field experience, lessons learned, policy implementation experience, a long history of ENRM – for example, in IFAD's policies on land and indigenous peoples – and the 2010 IFAD Climate Change Strategy (hereafter Climate Change Strategy).[52]

While some projects specifically target ENRM, it is relevant to all projects. Some 70 per cent of IFAD-supported projects are located in ecologically fragile, marginal environments. The poorest people are often those most dependent on the natural environment for their well-being and as a means of livelihood diversification. They also inhabit some of the most vulnerable and fragile ecological landscapes such as flood plains, uplands and areas of marginal rainfall.

49 IFAD, *Livestock and Climate Change*, Livestock Thematic Paper, prepared for the Workshop on Communities of Practice (CoP) for Pro-Poor Livestock and Fisheries/ Aquaculture Development, 12-13 January 2009, Rome, www.ifad.org/lrkm/events/cops/papers/climate.pdf.

50 A summary of the IFAD Strategic Framework 2007-2010 is available at: www.ifad.org/governance/sf/.

51 A full list of IFAD policy documents is available at: www.ifad.org/operations/policy/policydocs.htm.

52 www.ifad.org/climate/strategy/e.pdf.

Realizing agriculture's full potential for food security, environmental sustainability and economic opportunity requires fundamentally shifting the way the systems operate.

World Economic Forum[53]

IFAD has years of experience helping poor rural communities manage their natural resources. Its comparative advantage is in empowerment and in establishing or strengthening community-based NRM. IFAD's wide range of ENRM-specific investments has typically used these community-based approaches in the sustainable intensification of agriculture – a key focus of the *Rural Poverty Report 2011*. The principal areas of IFAD's involvement include improved rangeland management, conservation agriculture, sand dune stabilization, agroforestry and afforestation, sustainable forest management (including non-timber forest products), watershed management and rehabilitation, marine resource management, organic farming practices, integrated pest management, soil and water conservation, land rehabilitation and development of alternative rural energy sources.

IFAD can potentially do a lot more – through a further shift from perceiving the environment as a safeguard issue to seeing it as an area where IFAD can maximize opportunities for enhanced results and impact. Historically, and even with solid procedures in place, ENRM has consistently been rated the weakest impact domain in IFAD-supported projects since 2002 by successive ARRI[54] evaluations. In some cases, risks and opportunities associated with ENRM have been overlooked or inadequately addressed; poor performance has also been attributed to weak implementation. Environmental issues are sometimes perceived as separate from core project activities or included as stand-alone components without influencing the wider project. Because of its complexity and cross-cutting nature, the statistical base for measuring the overall volume or impact of IFAD's support of ENRM is weak.

There is significant scope for more systematic integration of climate change into IFAD's portfolio. The governments of developing countries are increasingly requesting support from IFAD in addressing environment and climate challenges. The Climate Change Strategy seeks to address this challenge: its key purpose is to support innovative approaches to helping poor rural people – women and men – build their resilience to climate change. It recognizes the benefits of integrating adaptation and mitigation. Its output is a more 'climate-smart' IFAD, where climate change is systematically integrated into core programmes, policies and activities. There is scope for further refinement of procedures and greater attention to upstream inclusion of ENRM issues in country programme management. IFAD's Environmental and Social Assessment Procedures (ESAP)[55] and their use in quality enhancement (QE) and quality assurance processes can become proactive tools for integrating ENRM more systematically into the Fund's portfolio.

IFAD has made limited use of earmarked environmental cofinancing, and has the potential to ensure that greater volumes of climate adaptation and biodiversity finance benefit poor rural people. The Fund's existing environmental cofinancing comes principally through its valuable partnership with the Global Environment Facility (GEF), which has helped leverage approximately US$20 million per year in

53 World Economic Forum, *Realizing a New Vision for Agriculture: A roadmap for stakeholders,* prepared in collaboration with McKinsey and Company (Geneva, 2010), www3.weforum.org/docs/IP/AM11/CO/WEF_AgricultureNewVision_Roadmap_2011.pdf.

54 IFAD Office of Evaluation, *Annual Report on Results and Impact of IFAD Operations Evaluated in 2008* (ARRI) (Rome, 2009), www.ifad.org/evaluation/arri/2009/arri.pdf.

55 www.ifad.org/gbdocs/eb/96/e/EB-2009-96-R-7.pdf.

grant cofinancing. Climate change is making development more expensive,[56] and poor rural people currently have limited access to climate finance. They do not benefit from existing formal carbon finance mechanisms and have limited access to the voluntary carbon and other existing ecosystem markets. In terms of public finance, various global funds have been established to mobilize public finance for climate change mitigation and adaptation, although agriculture for poor rural people does not feature highly. Typically, only a very small share of official development assistance and national budgets in developing countries is targeted at environmentally sustainable approaches. However, there is enormous potential. The recent report of The Economics of Ecosystems and Biodiversity (TEEB)[57] estimates that by 2020 the annual market size for certified agricultural products will be US$210 billion, payments for water-related ecosystem services US$6 billion, and voluntary biodiversity offsets in the region of US$100 million a year.

With an increasing number of value-chain projects in IFAD's portfolio (45.5 per cent in 2009),[58] there is an opportunity to maximize the positive environmental impact of value chains and avoid downside risks. There is increasing scope to develop certification to ensure that supply chains are environmentally compliant and to promote green purchasing and green procurement. Major corporations are increasingly setting out detailed environmental standards for purchase requirements for sourcing raw materials. There are significant downside risks to be considered where market entry comes at the cost of widespread conversion of landscapes to monocropping, which reduces resilience through an over-reliance on one species. In addition, as poor rural communities increasingly become involved in the processing of agricultural products, they should be prepared to properly dispose of waste.

IFAD should build on its comparative advantage of participatory and community-based approaches. Sustainable community-driven development approaches are essential to effective NRM. Continued promotion of participatory approaches and local programming processes that respond to the needs, priorities, opportunities and constraints identified by poor rural people – and based on their local knowledge, customs and priorities – is essential. Community- and ecosystem-based adaptation to climate change will be an increasingly core element in project design. IFAD-supported programmes will aim to build partners' understanding of the underlying causes of vulnerability, including the incorporation of ecosystem, biodiversity and climate-risk information into vulnerability assessments.

There is much scope for strengthening the knowledge base underpinning ENRM in IFAD's operations. The Fund's often positive experiences of 'what works' have not been systematically documented and shared. Work is needed to capture these, introduce state-of-the-art knowledge and information, support dialogue and exchange, and provide user-friendly and demand-driven tools to support the integration of environmentally sound and climate-smart practices throughout the project cycle – with an eye to demonstrating their economic and social benefits. Landscape and sustainable agriculture approaches, for example, are typically more knowledge intensive than more-traditional, standardized green-revolution approaches. Climate impacts, data and information tend to be very location-specific, as are the economic, social and cultural values of natural assets. The lack of baselines and benchmarking of environmental impacts has contributed to poor understanding of the poverty/

56 The cost of climate change adaptation in developing-world agriculture is estimated by IFPRI at US$7-8 billion annually, and the United Nations Framework Convention on Climate Change (UNFCCC) estimates that the cost will be US$11.3-12.6 billion in 2030. While estimates vary, most consider a highly ambitious 2-degree stabilization scenario and often do not factor in soft costs such as ecosystem degradation and the loss of associated goods and services critical to agricultural production.

57 www.teebweb.org/LinkClick.aspx?fileticket=bYhDohL_TuM%3d&tabid=924&mid=1813.

58 The projects for which value chains were either a separate component or the main focus increased from 3.3 per cent in 1999 to 45.5 per cent of the projects approved by the Executive Board in December 2009. The number of value-chain projects presented to the Board peaked at 17 in 2007, representing 48.6 per cent of the total number of projects presented that year. Of the total US$2.6 billion invested through the 78 projects, some US$925 million (or 35 per cent of the total) was allocated to value-chain projects or projects in which value chains were a component.

environment nexus, including associated risks and opportunities. The health of natural assets such as biodiversity or soil fertility can be difficult or costly to measure. However, the use of baseline studies, indicators, resource accounting studies and impact measurement of natural assets, together with innovative partnerships with data and information providers (e.g. satellite companies), could help policy dialogue support governments and communities alike in investing in ENRM and building resilience to risks and shocks.

Direct sharing of local knowledge among farmers and developing country policymakers is an effective pathway for scaling up. IFAD's experience shows that learning between and among poor rural communities is often the most effective way to foster adoption and adaptation of improved practices that can lead to innovation and provide momentum for scaling up. Farmer field schools and similar activities that support South-South learning among developing country partners will be a target for knowledge dissemination and learning activities for improved management of natural assets.

Demand by IFAD's government partners for support for ENRM is increasing, but many policy and institutional constraints remain. Climate change and the rapid deterioration of some physical environments are driving an increase in country demand for ENRM assistance. However, demand remains highly varied. This may be due to many factors, including environmentally damaging existing policy frameworks such as water-use subsidies or unsupportive land tenure policies and a lack of historical, political and institutional support for ENRM. Given the typically knowledge-intensive nature of ENRM interventions and the need for up-front feasibility studies, the limited availability of grants to cover such costs is sometimes a constraint in prioritizing demand for ENRM support and impedes uptake in the core lending portfolio.

IFAD has a sound base from which to intensify and leverage its engagement and advocacy in international environment and climate processes and forums. IFAD participates actively in the United Nations Framework Convention on Climate Change (UNFCCC) processes and is engaging more closely with the Convention on Biological Diversity (CBD). Moving forward, and in view of the Rio+20 Summit of 2012 and beyond, IFAD will endeavour to inform and support these processes at global, regional and country levels, so that they adequately respond to the needs of poor rural people. IFAD also houses the Global Mechanism of the United Nations Convention to Combat Desertification (UNCCD) and is a traditionally strong partner in combating desertification worldwide.

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CASE STUDY

Green growth through value chains in West Africa

In Sao Tome and Principe, IFAD helped turn around the dying smallholder cocoa sector, which had been suffering following the collapse of world market prices. Rather than focusing on conventional cocoa, which in economic terms continues to remain relatively unattractive for smaller producers, the Participatory Smallholder Agriculture and Artisanal Fisheries Development Programme set up public-private partnerships with overseas buyers of organic, fair trade cocoa of high quality. Within a short time, these arrangements helped farmers establish export cooperatives and achieve stable and much improved incomes. Participating farmers need two years for their plots to be declared free of chemical fertilizer residues and to qualify for Ecocert© organic certification. Technicians employed by one of the buyers, the National Agricultural Research Institute, and project staff have all been providing training for farmers in organic and conservation agriculture, solar drying, integrated pest management and other environmentally sustainable practices, as well as in cooperative management, cooperative-led extension and other services, and the principles of fair trade.

In Sierra Leone, a new initiative, the Rehabilitation and Community-Based Poverty Reduction Project Plus, is aiming to build on the Sao Tome and Principe experience and exploit the potential of growing markets for high-quality organic, fair trade cocoa. The project will rehabilitate a 5,000-ha cocoa plantation abandoned during the war, and has already identified as implementing partners the Millennium Cocoa Growers Cooperative and Bio United, both certified 'organic' and exporting cocoa under the fair trade label. Activities include training of staff and farmers and support to the rehabilitation and improved management of plantations. Prices for good quality, certified cocoa are less susceptible to market fluctuations and this encourages further investment and assures sustainability. In addition to the extra income provided by intercropped plants, cocoa agroforestry systems support greater biodiversity and avoid the land degradation and erosion caused by slash-and-burn farming. A Least Developed Countries Fund grant from the GEF will support the project through community-based climate change adaptation planning – in the form of direct investments in soil and water conservation, sustainable land management and erosion control.

II. The ENRM policy: 10 core principles

The goal of this ENRM policy is:

To enable poor rural people to escape from and remain out of poverty through more-productive and resilient livelihoods and ecosystems.

The purpose is:

To integrate the sustainable management of natural assets across the activities of IFAD and its partners.

This ENRM policy does not start from a zero base. It builds on and strengthens commitments made in other IFAD policies,[59] in particular, the Climate Change Strategy (2010), ESAP (2009), Policy on Improving Access to Land and Tenure Security (2008), Policy on Engagement with Indigenous Peoples (2009) and *Rural Poverty Report 2011*, which all acknowledge the key role natural assets play in the livelihoods of poor rural people. The present policy also owes much to learning from best-practice ENRM experiences at other major development institutions and organizations (see annex I). This is complemented by literature reviews on food security and sustainable development and a range of regional consultations and comments received within IFAD and from partners.

IFAD ENRM core guiding principles

The following section sets out 10 ENRM core principles. They provide the basis for shaping IFAD's programmes and investments, and strengthening ENRM across IFAD activities. The practical application and interaction of the principles is illustrated by case study examples of IFAD's ENRM experience.

IFAD ENRM policy: summary of core principles IFAD will promote:

1. Scaled-up investment in multiple-benefit approaches for **sustainable agricultural intensification**;
2. Recognition and greater awareness of the economic, social and cultural **value of natural assets**;
3. **'Climate-smart'** approaches to rural development;
4. Greater attention to **risk and resilience** in order to manage environment- and natural-resource-related shocks;
5. Engagement in **value chains** to drive green growth;
6. Improved **governance** of natural assets for poor rural people by strengthening land tenure and community-led empowerment;
7. **Livelihood diversification** to reduce vulnerability and build resilience for sustainable natural resource management;
8. **Equality and empowerment for women and indigenous peoples** in managing natural resources;
9. Increased access by poor rural communities to **environment and climate finance**; and
10. **Environmental commitment** through changing its own behaviour.

59 A full list of IFAD policies is available at: www.ifad.org/operations/policy/policydocs.htm.

Principle 1. IFAD will promote scaled-up investment in multiple-benefit approaches for sustainable agricultural intensification. This means locally adapted, pro-poor, sustainable agricultural intensification techniques that recognize the complexity of people's interaction with landscapes. An important feature of such approaches is that they provide multiple benefits for production, poverty reduction and the environment, including maintaining ecosystem services and biodiversity, reducing emissions and building climate resilience. Landscape approaches supported by spatial analysis can identify how investments or management practices in different parts of a landscape or watershed can produce benefits or reduce negative impacts on other parts, to provide 'connectivity' of hydrological systems or wildlife habitat, etc. There may also be landscape-scale relationships through farmer organizations (economies of scale in marketing, providing inputs to one another or collective action, including political action); or for greening value chains across a whole landscape. As energy costs rise, such approaches present sustainable non-energy-intensive alternatives for production.

Principle 2. IFAD will promote recognition and greater awareness of the economic, social and cultural value of natural assets. Global recognition is increasing the need to understand the range of environmental values, the costs and benefits of environmental impacts, the value of ecosystems and biodiversity[60] and the goods and services they provide. Values can include both direct and indirect costs, but especially social and cultural values relevant to local communities and indigenous peoples. A higher valuation is critically important to increasing production, measuring change in environmental well-being, ensuring sustainability and providing better health and nutrition for poor rural people. This can be done implicitly in project and policy design through recognizing the importance of maintaining the health of natural assets – or where possible explicitly measured, so that management of the natural environment and its well-being are appropriately costed over time.

Principle 3. IFAD will promote climate-smart approaches to rural development. As set out in the Climate Change Strategy, this involves the systematic integration of climate change – along with other risks, opportunities and themes – into development programmes, policies and activities. It requires innovative approaches to enabling poor rural producers to adapt – especially women and indigenous peoples – by reducing risk and building resilience to climate change; helping poor rural farmers take advantage of available adaptation and mitigation incentives and funding; and informing a more coherent dialogue on climate change, rural development, agriculture and food security.

Principle 4. IFAD will promote greater attention to risk and resilience in order to manage environment and natural-resource-related shocks. To enhance the resilience of poor rural people, IFAD will step up its efforts to manage: risk exposure; risk and vulnerability analysis; knowledge and weather information services; linkages between ecosystem health and disaster preparedness/risk-reduction activities; and locally adapted and robust production systems – and to promote livelihood and income diversification and social safety nets. Ecosystem health, income diversification and participatory management are critical to withstanding increasing shocks and decreasing nutrition. IFAD will strengthen

60 TEEB, *Climate Issues Update* (Bonn: TEEB/UNEP, 2009); IBRD/World Bank, *Where is the Wealth of Nations?* (Washington, DC: IBRD, 2006); United Nations Millennium Assessment Board, *Millennium Ecosystems Assessment* (Washington, DC: Island Press, 2005).

linkages with agencies and stakeholders engaged in disaster risk reduction and resilience-building efforts and build poor rural people's resilience through the forging of concrete field-rooted partnerships with United Nations agencies, international financial institutions (IFIs) and other partners.

Principle 5. IFAD will promote engagement in value chains to drive green growth. The growing integration of local and international value chains[61] represents an important potential driver for scaling up environmentally sound practices and promoting inclusive green growth, but with significant downside risks if market entry comes at the cost of widespread conversion of landscapes to monocropping. A number of major global food purchasers are announcing sustainable-agriculture purchasing standards – these represent an opportunity for poor rural people, who in many cases are already practising low-input production techniques (see best-practice statement (iii) in annex I).

Principle 6. IFAD will promote improved governance of natural assets for poor rural people by strengthening land tenure and community-led empowerment.[62] Environmental degradation is often fundamentally due to governance failures.[63] These failures need rectifying locally, nationally and internationally, for example by: promoting the rule of law, appropriate environmental policies and legislation, and an international valuation of emissions; improving security of tenure; and avoiding environmentally damaging subsidies. Empowering local communities and individuals to manage and drive their own development processes, and to provide legal recognition and protection of their rights to access, control and use of natural resources is fundamental to good governance and effective programme design. Building resilience for users of extensive common-pool resources requires the explicit support and recognition of local management systems and tenure. IFAD recognizes the importance of improving access to land and tenure security[64] and is supporting ongoing international initiatives promoting good land governance and responsible and equitable investments in agriculture. These are: (i) the Food and Agriculture Organization of the United Nations (FAO)-initiated process of developing voluntary guidelines for responsible governance of tenure of land and other natural resources; and (ii) a process for developing principles for responsible agricultural investment facilitated by the World Bank, FAO, IFAD and the United Nations Conference on Trade and Development (UNCTAD).[65]

Principle 7. IFAD will promote livelihood diversification to reduce vulnerability and build resilience for sustainable natural resource management. Livelihood diversity is an essential prerequisite for reducing risk, building resilience and providing food security. Off-farm sources of income and access to varied, secure natural assets, income opportunities and markets can reduce pressure on ecosystems and avoid poverty-driven depletion of natural assets. IFAD will strengthen its ongoing support and complement this with proposed NRM-focused approaches to promote livelihood diversification opportunities and improved access to markets and income opportunities.

61 A value-chain intervention is one that finances the necessary activities to address constraints on the development of a particular agricultural product (e.g. input supply, market-oriented technology development and its transfer, infrastructure development, credit and capacity-building) to facilitate access to markets for sale at the appropriate point – either in raw, semi-processed or fully processed form. A pro-poor value-chain intervention develops approaches to include poor people in the chains, with a view to increasing their incomes, primarily through improvement in farm-gate prices and addressing constraints in a coordinated manner. IFAD, *Pro-poor Rural Value-Chain Development Report* (Rome: International Fund for Agricultural Development, forthcoming 2011).

62 The IFAD Policy on Improving Access to Land and Tenure Security is available at: www.ifad.org/pub/policy/land/e.pdf.

63 IFAD, *Rural Poverty Report 2011*.

64 See note 62.

65 http://www.ifad.org/pub/land/land_grab.pdf .

Principle 8. IFAD will promote equality and empowerment for women and indigenous peoples in managing natural resources.[66] IFAD has long recognized the importance of investing in women. Risks associated with climate change magnify existing inequalities between women and men and differences in their capacity to cope. IFAD's focus on gender equality and women's empowerment will continue to be a valuable strategy for responding to climate change. Indigenous peoples are among those least responsible for climate change, yet are often the most vulnerable to it, especially because their livelihoods invariably depend on access to healthy natural resources and biodiversity.[67] Respecting the principle of free, prior and informed consent, IFAD will support indigenous peoples in enhancing the resilience of the ecosystems in which they live and in developing innovative adaptation measures and emerging opportunities for indigenous peoples' engagement in carbon sequestration and the provision of other environmental services. IFAD will be guided by its policy on Engagement with Indigenous Peoples, including its contribution to the realization of the United Nations Declaration on the Rights of Indigenous Peoples.

Principle 9. IFAD will promote increased access by poor rural communities to environment and climate finance. It will seek new opportunities for poor rural people and smallholders to benefit from new and existing climate finance from public and private sources. It will also promote measures to ensure that private financing through commercial partners integrates environmentally conscious lending for channelling international capital flows to loan projects, and that these commercial institutions promote internationally recognized environmental standards, including the screening of investments through appropriate environmental assessment procedures.

Principle 10. IFAD will promote environmental commitment through changing its own behaviour. While integrating ENRM across its operations and advocating that partners adopt more-sustainable practices, IFAD must also set an example of efficiency and sustainability in its own operations. This requires ongoing investment to green its operations, focusing especially on travel, procurement and buildings.

66 The IFAD indigenous peoples and gender policies are available at: www.ifad.org/operations/policy/policydocs.htm.

67 The IFAD Strategic Framework 2007-2010 identified indigenous peoples as an important target group because they face economic, social, political and cultural marginalization in the societies in which they live, resulting in extreme poverty and vulnerability for a disproportionate number of them.

CASE STUDY

Energy from waste in China

Methane, which is released from animal manure, is 22 times more damaging than carbon dioxide. By turning human and animal waste into methane for lighting and cooking, an IFAD-funded project in China's Guangxi Province is reducing poverty and also helping reduce methane's more damaging global warming effects. "We used to cook with wood," says Liu Chun Xian, a farmer involved in the project. "The smoke made my eyes tear and burn and I always coughed. The children, too, were often sick... Now that we're cooking with biogas, things are much better."

Each household involved in the project built its own plant to channel waste from the domestic toilet and nearby shelters for animals, usually pigs, into a sealed tank. The waste ferments and is naturally converted into gas and compost. As a result of the project, living conditions and the environment have improved. Forests are protected, reducing GHG emissions from deforestation. A large amount of straw, previously burned, is now put into biogas tanks to ferment. This further reduces air pollution from smoke and helps produce high-quality organic fertilizer. In addition, the project has resulted in better sanitary conditions in the home.

Families, especially women, save 60 work days by not having to collect wood and tend cooking fires. This additional time is invested in raising pigs and producing crops. With more time to spend improving crops, farmers in Fada, a village in the project area, increased tea production from 400 to 2,500 kilograms a day over a five-year period. Average income in the village has quadrupled to just over a dollar per day. This is significant in a country where the poverty line is 26 cents per day. And as a result of the project, 56,600 tons of firewood can be saved in the project area every year, which is equivalent to the recovery of 7,470 ha of forest.

III. ENRM policy implementation: scaling up through systematic integration

Implementation of the present ENRM policy will be guided by the five-year strategy set out below. The strategy is summarized in the results and implementation framework provided in annex II. It builds on and incorporates relevant actions taken in the implementation of the Climate Change Strategy and on IFAD's forthcoming Strategic Framework 2011-2015 and Medium-term Plan 2010-2012, which will emphasize sustainable use of natural resources, risk and climate change.

Operations

Strategic objective: ENRM scaled up and systematically integrated into country strategies and programmes

IFAD will build the capacity of country programmes to respond more systematically to increasing demands from clients for help and innovations in climate change and sustainable NRM. IFAD will ensure that financing fosters supportive national and regional policy environments, creating enabling conditions for the delivery of sustainable ENRM policies. In common with IFAD's approach to climate change, this means ensuring the right toolkit for the early stages of country programme and project design, rather than as an overly compliance-driven approach in the final approval stages for results-based country strategic opportunities programmes (RB-COSOPs) and for programmes and projects. In some cases it also means more engagement – with others – in efforts by partner governments to improve their local and national policies.

Country strategies. RB-COSOPs are a key entry point for upstream analysis and assessment of how IFAD can help partners manage natural resources sustainably and respond to climate change. They are increasingly reflecting new thinking on these issues, but IFAD can go further in ensuring that expertise is available to do this systematically. A priority of RB-COSOPs will be to support national priorities on ENRM (such as ecosystem-based approaches) as reflected in poverty reduction strategy papers, relevant international guidelines, codes of conduct and relevant national strategic frameworks (e.g. national adaptation programmes of action, national action plans/programmes, etc.). The latter include sustainable national development strategies, climate change strategies, civil society activities and the encouraging of policy dialogue among all stakeholders. Efforts will be made to increase the number of strategic environmental assessments to inform country policies and strategies.

Project design and implementation. Here, there is an opportunity to provide more support on ENRM scaling up and integration. Systematic integration does not imply that every project has to be focused on NRM. It means, rather, that projects understand and manage impacts on natural assets. IFAD's priority is to ensure that project identification, design (including quality assurance) and implementation are based on an understanding of sustainable NRM in a local context, how it affects different categories of poor rural people, and women as compared with men. It is also important to understand how an ecosystem-based approach can build resilience and underpin adaptation planning for rural communities, agriculture

and ecosystems – and their service flows. Reforms to strengthen IFAD's programme management present new opportunities to improve systematic ENRM integration into the portfolio. The quality enhancement system and direct supervision provide more scope for technical engagement, and increased field presence will enable greater engagement with ENRM networks in-country.

How will IFAD achieve this? Through:

(a) Applying the **10 ENRM policy principles** and the **best-practice statements**;

(b) Systematic and enhanced participation of relevant environment and climate expertise in **country programme management teams and missions** throughout the project cycle;

(c) Additional **grant support** for and awareness-raising on encouraging and integrating ENRM into IFAD operations;

(d) Significantly enhanced **knowledge management** and training effort for country programme managers and managers – including sharing new knowledge on climate change and developing new ENRM and climate tools;

(e) Updating of **ESAP** to include revised operational procedures and the ENRM best-practice statements (see annex I). This will aid assessment of high- and medium-risk projects within Category B projects, which form the majority of classified projects, as well as maximize opportunities for enhanced ENRM impact;

(f) Increased engagement in the **quality enhancement** process so that: (i) projects are assessed in the context of a number of key ENRM success factors, which include a question on the vulnerability to climatic shocks of poor rural people whose livelihoods depend on agriculture and NRM; (ii) sensitivity of the design to ENRM issues will be regularly tracked in the QE and quality assurance processes; (iii) selected QE guidance notes and guidelines for the project design report will be updated to reflect the ENRM best-practice statements and to include ENRM sustainability issues and the scope of their treatment throughout the project cycle. The QE process also informs knowledge and training efforts;

(g) **Piloting a more concrete and systematic environment and climate-monitoring and evaluation framework**, including development of additional 2nd-level Results and Impact Management System (RIMS) indicators;

(h) Appropriate integration of ENRM-related issues into **RB-COSOP mid-term and project supervision and mid-term reviews, project status reports and knowledge management systems**. This will be facilitated by the inclusion of such elements where appropriate in the original project design; and

(i) Integration/revision of ENRM-related questions in the next updates of the rural-sector performance assessment section of the IFAD performance-based allocation system (PBAS).

Promoting knowledge, advocacy and partnerships

Strategic objective: ENRM-related knowledge and learning to drive increased: (i) project design and implementation support; and (ii) innovation that informs enhanced global and national advocacy

Farmer field schools have been shown to significantly reduce the amounts of pesticide use, as inputs are being replaced by knowledge.

Olivier de Schutter, United Nations Special Rapporteur on the Right to Food[68]

Environmental conditions, indigenous knowledge and institutional, social and cultural arrangements are interlinked and highly location-specific. The impact of this policy on the ground will thus hinge on how well IFAD improves its ability to generate, identify and share ENRM best practices and innovation across its global grant and lending, GEF grant and research grant portfolios. Based on this information, IFAD will create and hone tools that serve IFAD staff and partners in replicating and adapting those best practices, and in measuring and communicating the costs and benefits to poor rural communities and their governments in terms that are understandable and compelling.

Key themes for knowledge generation will be based on emerging demand. Grants will boost research and knowledge generation based on increasingly green demand from IFAD partners and staff. Overall, knowledge activities will focus on areas where demand and implementation potential are already strong or growing quickly. These include landscape approaches, ecosystem-based NRM and adaptation, crop and livestock resilience-building technology, greening value chains, environment, natural resource and climate information, data provision to target communities, and opportunities for poor rural people to benefit from public-private partnerships, including through PES/RES and carbon markets.

New and existing partnerships will support ENRM knowledge activities. IFAD will engage in new or strengthened partnerships with specialized entities and networks. It will also work through its existing regional and community networks to integrate this learning into core programming across sectors. Examples of platforms that may be used include IFAD's regional Learning Routes, TerrAfrica, the Poverty Environment Partnership and the Multilateral Financial Institutions Working Group on Environment.

IFAD will deepen participation in global dialogue on development, environment and climate change. In addition to improving the performance of IFAD's portfolio, knowledge activities will strengthen its ongoing advocacy efforts.

In implementing the Climate Change Strategy, IFAD is already working to raise the profile of smallholder agriculture in international policy discussions on climate change, and to highlight the importance of understanding climate impacts on poor rural people within agriculture discussions. This has included success in helping shift the debate on agriculture and climate change from a narrow focus on carbon markets to a wider one embedded in core agriculture debates on the scope for a change in approach – that is, through an evergreen revolution. This communication and engagement is tightly focused, given the staff capacity needed to manage IFAD's operational task on the ground. IFAD will continue to work closely

68 Olivier de Schutter, *Report to the Human Rights Council on Agroecology and the Right to Food* (2010), www2.ohchr.org/english/issues/food/docs/A-HRC-16-49.pdf.

with FAO, the World Food Programme (WFP), centres of the Consultative Group on International Agricultural Research (CGIAR), the Global Donor Platform for Rural Development, farmers' organizations, the International Land Coalition, NGOs and others in this task, and will join forces with new specialized partners to enhance and broaden these efforts.

Key deliverables will include:

(a) **Increasing support for – and interest in – sustainable intensification techniques** as part of an evergreen revolution in agriculture, including increased engagement and representation of the concerns of poor rural people in environment networks such as the CBD and the United Nations Conference on Sustainable Development (UNCSD);

(b) Increased advocacy and learning centred on environment and climate-related issues through traditional and social media, and **IFAD publications**;

(c) **New staff training and a platform of resources and tools to address ENRM and climate change** – a climate risk tool for screening RB-COSOPs and projects, strategic environmental assessments for RB-COSOPs rolled out, plus support to a range of tools, including participatory and Geographic Information System (GIS) mapping and forecasting to help community engagement and decision-making on natural resource assets; and

(d) **ENRM database and tracking system** in place, including measuring the volume of the portfolio that addresses ENRM, along with greater attention to environmental and social impact measurement – through greater use of baseline studies and benchmark data to support design, implementation, learning, impact measurement and knowledge-sharing for the scaling up of multiple-benefit approaches.

Key knowledge, innovation and advocacy partnerships

Farmers' organizations, indigenous peoples, international civil society and the private sector. Rural producers' and civil society organizations are important partners, particularly in piloting new approaches at the community level, sharing ideas and advocating for improved practices. Building on ongoing relationships with organizations such as the United Nations Permanent Forum on Indigenous Issues, organizations involved in the indigenous peoples' forum at IFAD and producers' organizations involved in the Farmers' Forum, IFAD will increase its collaboration with relevant groups, including NGOs with specific expertise, to address the challenges poor rural people face in managing their natural assets. Partnership will also be sought with the private sector as a key player in unleashing smallholder potential to participate in national and international markets. This would also include support to the transfer and scaling up of climate-resilient and low-carbon technologies.

United Nations family and Rome-based agencies. IFAD will continue to engage in concerted efforts with other United Nations agencies:

(a) **Through collaboration among the three Rome-based agencies**, which will continue to be a priority, as identified at the Rome heads of agencies meeting in September 2009.[69] Given FAO's long history of technical work on the sustainable intensification of agriculture, this will be a key technical partnership for this strategy. In addition, the Rome-based

69 IFAD, Directions for Collaboration among the Rome-based Agencies, document prepared for review by the ninety-seventh session of the Executive Board, 14-15 September 2009.

agencies are pursuing a collaborative partnership on disaster risk management. IFAD will continue to deepen these collaborative efforts, making more use of FAO's analytical capacity and – given the impact of climate change on disasters and vulnerability – working with WFP on disaster preparedness, resilience-building after relief and early recovery, and social protection. As host of the Global Mechanism and the International Land Coalition, efforts are ongoing to exploit opportunities to harness the potential for addressing land degradation and promoting equitable access to land. These efforts include building IFAD's capacity for addressing desertification and land reform, and pursuing innovative approaches to ecosystem management and participatory approaches – such as payment of environmental services and use of participatory mapping for enhanced community ownership of natural assets;

(b) Through the climate change working group of the High-level Committee on Programmes, **Chief Executives Board**, in support of the UNFCCC process, as well as in the delivery of common products;[70]

(c) Through our work with the **UNFCCC secretariat**, particularly on technical matters related to adaptation and mitigation in agriculture and on initiatives such as the Nairobi Work Programme on impacts, vulnerability, adaptation to and mitigation of climate change.[71] IFAD's main objective will be to increase attention to the needs and concerns of poor rural people and smallholder farmers in the post-Kyoto global climate agreement, to ensure that benefits from climate finance flow to smallholders and poor rural people, and to continue supporting implementation of the Convention by delivering the programmes identified in the national adaptation programmes of action; and

(d) Through IFAD's work with the **United Nations Environmental Management Group**, particularly on a possible United Nations system-wide approach to biodiversity, land and environmental and social sustainability. IFAD will explore opportunities to engage with the recently developed United Nations High-level Panel on Global Sustainability.

The **Consultative Group on International Agricultural Research** is one of IFAD's main research partners. The recently launched 10-year CGIAR Programme on Climate Change, Agriculture and Food Security (CCAFS) offers new opportunities to engage with CGIAR on climate change research and advocacy. Other opportunities exist through ongoing and possible future collaboration with Bioversity International, ICRAF, IFPRI, the Center for International Forestry Research (CIFOR) and other CGIAR centres.

International financial institutions. IFAD, as both an IFI and a United Nations specialized agency, will increase its engagement and knowledge-sharing with other IFIs. It is already an active member of the Multilateral Financial Institutions (MFIs) Working Group on Environment, which has made significant progress towards harmonizing the approach MFIs take to climate and environment issues, particularly in relation to environmental impact assessment.

Donor community. Membership in the Global Donor Platform for Rural Development offers a space for coordinated action on climate change and ENRM within the donor community. Building on its current and ongoing engagement with and material support to the platform, IFAD will continue to take part in the development of a coherent approach among donors to agricultural mitigation and adaptation.

70 In 2009, the United Nations system engaged in a number of joint initiatives and tools, such as the joint paper on adaptation presented at COP15 and the UNCCD: Learn Platform, to which IFAD contributed through its internal climate change training (i.e. the CLIMTRAIN project).

71 IFAD joined the UNFCCC Nairobi Work Programme on impacts, vulnerability and adaptation to climate change in October 2007. The aim of this programme is to help countries improve their understanding and assessment of the impacts of climate change and to make informed decisions on practical adaptation actions and measures.

Resource mobilization

Strategic objective: Systematic integration of ENRM and climate risks and opportunities into the overall investment portfolio through strategic use of grants and the mobilization of additional supplementary funding

IFAD's comparative advantage in reducing rural poverty lies in its ability to inform investment decisions in developing countries through its lending portfolio. Sustainable NRM has a high economic rate of return, hence it can be considered a valid potential investment for pure loan-funded operations. However, in some cases, additional grants can tip the balance in favour of more sustainable investments. Advocacy and research grants can also be used to provide knowledge and tools that shape IFAD's portfolio and influence policy at international and national levels by demonstrating the high rate of return of environmentally sound and climate-smart approaches.

In addition to its core resources, IFAD will continue to leverage its traditional supplementary funding sources and seek new ones to bolster systematic integration of ENRM. IFAD faces a major opportunity to help poor rural people benefit from increasing international public and private finance earmarked for environmental objectives – in particular related to climate change. In the longer run, facilitating access to carbon funds offers an opportunity to enhance NRM for the benefit of the poor and can be a driver of improved landscape management, providing income to farmers from the farm to the national scale. IFAD will continue to leverage resources from international funds, such as the GEF and the Adaptation Fund. In addition, as requested by the Board of Directors at the Eighth Replenishment of IFAD's Resources, while maintaining its focus on its mandate and comparative advantage, IFAD will seek to complement its core resources by being open to additional funding that would enable it to scale up its engagement in climate change issues and to meet the additional costs that climate-related challenges impose on investments in development.[72] For example, cofinancing can be used to promote ecosystem conservation through setting up PES mechanisms, and can also be directed towards adaptation efforts such as access to technology, improved farming practices and ecosystem restoration imperatives.

Key sources include:

(a) **Global Environment Facility**. The GEF represents an important strategic partner, going beyond resource mobilization and including knowledge management. Through the GEF partnership, IFAD has deepened its engagement and cooperation with other GEF agencies.[73] Of relevance to IFAD, the GEF manages the GEF Trust Fund, the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF). IFAD's GEF portfolio is approximately US$100 million, with cofinancing of approximately US$370 million from IFAD-supported projects. IFAD will continue to build on its cofinancing arrangements with the GEF, including through the GEF-5 Trust Fund, and UNFCCC's GEF-managed LDCF and SCCF trust funds.

(b) **Private sector and foundations**. Further possibilities may exist to fund ENRM activities to benefit poor rural people through the corporate private sector,

72 IFAD, Report of the Consultation on the Eighth Replenishment of IFAD's Resources, 21 January 2009 (Rome, 2009).

73 African Development Bank (AfDB), Asian Development Bank (AsDB), European Bank for Reconstruction and Development (EBRD), FAO, Inter-American Development Bank (IDB), World Bank, UNDP, UNEP and United Nations Industrial Development Organization (UNIDO).

private foundations and private funds such as sovereign wealth funds. In the first year of implementation, IFAD will commission a study to map potential climate and ENRM financing sources to IFAD's financial, administrative and institutional comparative advantages. In addition, private-sector and public utilities will be key partners in replicating and scaling up PES schemes. A recent UNEP report highlights that "Green agriculture can contribute to poverty alleviation through wise management of natural resources and ecosystems, where benefit flows from natural capital are received directly by the poor."[74]

(c) **Adaptation Fund**.[75] IFAD was accredited in 2010 to serve as a multilateral implementing entity of the Adaptation Fund, which will finance concrete adaptation projects and programmes in developing countries that are parties to the Kyoto Protocol.

(d) **Green Climate Fund**. IFAD will remain engaged in the design of new international environment and climate funds in order to encourage their inclusion of poor rural people and specifically smallholder agriculture. In particular, IFAD will closely monitor the setting up of the Green Climate Fund, to try to ensure that: (i) IFAD is established as an implementing organization; and (ii) the Fund is designed in a way that encourages rather than penalizes multiple-benefit sectors such as agriculture.

(e) **Linking poor rural people and smallholder agriculture to forest financing (REDD+ initiatives)**.[76] IFAD will explore opportunities to link with REDD+ initiatives to ensure that: (i) links to smallholder agriculture, climate adaptation and wider environment issues are well incorporated; and (ii) IFAD is recognized and engaged as a strategic partner in implementation and collaboration.

Internal organization

Strategic objective: the right capacity and internal procedures to create incentives for ENRM integration in the portfolio

Organizational structure

IFAD has the right structure in place to step up its work on ENRM issues, including on climate change. During implementation of the Climate Change Strategy, a new Environment and Climate Division (ECD) was established in the Programme Management Department. The division is now almost fully staffed and operational, with regional climate and environment specialists recruited and in place in three regional divisions. Capacity will be further increased through a modest staff increase and training, together with deeper partnerships to source external expertise on climate change. Implementation of this policy will be a shared responsibility across the organization – IFAD's next strategic framework will see climate, environment and sustainable NRM fully integrated into analysis and objectives. **IFAD will:** make greater use of existing in-house skills and people through identifying dedicated in-house capacity to deliver high-quality programmes and further staff training.

74 UNEP, *Towards a Green Economy*.

75 The Adaptation Fund was established by the Parties to the Kyoto Protocol of the UNFCCC and is hosted by the GEF.

76 "Countries have recognized the critical role of forests in mitigating climate change. To advance this issue, a group of developed and developing countries with a commitment for international cooperation are taking efforts to enable effective, transparent and coordinated fast action on reducing greenhouse gas emissions from deforestation and forest degradation (REDD+) in developing countries. This new collaboration is called the REDD+ Partnership." UNFCCC, http://unfccc.int/methods_science/redd/items/5607.php.

Greening IFAD

IFAD is working together with other United Nations agencies to go green and become climate neutral through establishing systems and procedures to measure and reduce its environmental impact, as requested by the Secretary-General in 2007. The 'Greening the Blue' initiative was launched in 2010 to communicate with all United Nations staff and external stakeholders. The initiative to create a more sustainable United Nations, which IFAD participates in, is now coordinated through the IFAD Issue Management Group on Sustainability Management, which is serviced by the Sustainable United Nations facility and reports to the Environment Management Group.

IFAD also recognizes that to deliver its core mission it needs to 'walk the talk' by reducing its environmental footprint – this sends an important signal to staff and our external partners of the importance we place on environmental issues. IFAD is focusing on the adoption and promotion of best practices and measures to reduce this footprint and to pursue sustainable and climate-neutral facilities. Recent achievements include:

(a) LEED[77] certification by the U.S. Green Building Council in 2009. This internationally recognized green building certification was awarded at the gold level, in recognition of IFAD's state-of-the-art headquarters design and environmental management practices;

(b) A 12 per cent reduction in consumption of electricity between 2008 and 2009, and an additional 3.2 per cent reduction in 2010;

(c) All electricity purchased in 2009 and 2010 certified as green energy by the Renewable Energy Certificate System;

(d) Power consumption in the IFAD data centre unchanged since 2008, despite growing demand for computing resources. Moreover, new 'blade' technology is being introduced in the data centre to decrease future power consumption;

(e) Installing drinking water fountains to reduce usage of plastic water bottles in 2010;

(f) IFAD's external contractor for cleaning services selected on the basis of guarantees to use cleaning products that are biodegradable, phosphate-free, ammonia-free and non-toxic;

(g) Provision of shuttle bus to metro station to reduce car usage by staff;

(h) Measures to assess and monitor the number and total emissions of flights; and

(i) Implementation of parking fees to encourage use of public transport.

The organization will continue to move forward, exploring new ways to achieve an even greener workplace and further reduce its carbon imprint. **In 2011 IFAD will develop a Plan of Action for Greening IFAD**. This will be shared externally and will include resources and time lines to achieve further advances in the following areas:

(a) **Better measurement and monitoring** of emissions and environmental footprint – with clear and monitorable goals for improvement.

(b) **Further reductions in emissions from travel**, including measures to further reduce the carbon imprint of duty travel – to be introduced by the new travel guidelines in 2011 – such as available alternative technologies, including videoconferencing and the use of offsetting schemes. More broadly,

77 Leadership in Energy and Environmental Design.

IFAD will explore ways to further encourage green ways of travelling to work. Together with UNEP, IFAD is developing green ratings to guide our choice of hotels.

(c) **New sustainable corporate procurement policies**. In close cooperation with FAO and WFP, IFAD will introduce a sustainable procurement policy in 2011, selecting products and services on the basis not only of their technical and economical characteristics, but also of their greater or lesser impact on the environment throughout their life cycle (raw materials, production process, use, reuse/recycling and waste disposal).

(d) **Greener facilities**. IFAD will explore the feasibility of achieving platinum LEED standard certification of its headquarters to further reduce its carbon imprint and enhance headquarters sustainability. This will require analysis and additional investments, for example in energy performance, selection of material and resources, waste management and water efficiency. Other measures will be explored, such as the use of solar panels, as will new technology solutions to further reduce the overall power consumption of computer workstations. IFAD will explore means to provide sustainable food services with its current catering service provider – in order to serve a variety of healthy and sustainable dishes with minimal or positive impacts on the environment. In future re-tendering for catering services, IFAD will emphasize sustainability requirements in the solicitation and evaluation criteria.

Measuring success

A time-bound results and implementation framework for the ENRM policy is presented as annex II. In line with the overall approach of the Climate Change Strategy, the policy framework seeks to embed ENRM issues appropriately across IFAD's results-based measurement system. As a theme that runs throughout our work, the success of the strategy will be assessed through a number of proxy measurements largely related to portfolio performance and activity implementation. The results and implementation framework incorporates implementation items remaining from the Climate Change Strategy.

ANNEXES

Annex 1: ENRM best-practice statements

As part of the ENRM policy, the following best-practice statements were developed. These will be refined in the policy implementation process and will feed into revising IFAD's ESAP. They apply the 10 ENRM core principles to areas of common engagement for rural development investments. The best-practice statements embody an integrated approach in which gains under one objective (e.g. crop production) are not achieved at the cost of losses in another (e.g. biodiversity). As such, the statements guide interventions in rising above any specific 'sector' or 'subsector' objectives and maximizing synergies within and among landscapes.

(i) **Crop production**. To support and promote: (i) improved soil fertility through integrated farming systems, conservation agriculture techniques, rotation with legumes, agroforestry with fertilizer trees, composting, contour planting and terracing to reduce soil erosion; and judicious use of mineral fertilizers and agrochemicals; (ii) integrated pest and weed management to avoid overuse or unnecessary use of pesticides and herbicides; (iii) water-efficient irrigation systems with users involved in management; (iv) enhancement, maintenance and preservation of crop diversity; (v) research on biotechnologies in tandem with investments in biosafety; (vi) research on and introduction of seed and crop varieties that reduce the energy, water and fertilizer inputs needed; and (vii) appropriate location-specific seed varieties.

(ii) **Livestock**. To support and promote: (i) integrated crop/livestock systems; (ii) introduction of improved livestock genetics and avoidance of erosion of animal genetic resources; (iii) the role of pastoral institutions and recognition of tenure rights and customary grazing lands; (iv) strengthened local governance capacity and national governance policy and institutional coherence; (v) increased livestock diversity; and (vi) recycling of livestock manures as organic nutrients for soil.

(iii) **Value chains**. To support and promote: (i) eco-efficiencies in agricultural value chains, including water and energy use; (ii) harmonization with national and international standards for sustainable agriculture and consumption; (iii) continuation of diversified production within a given landscape; (iv) where possible, priority market access for purchasers of organic and sustainable niche environmental products; (v) creation of green jobs throughout the value chain, including in local food systems and organic production; (vi) facilitation of local and regional market access for sustainable production systems through public-private partnerships that link poor rural people to payment for environmental services (PES); (vii) national certification processes; and (viii) strengthened capacity for good practices, including enforcement of waste management.

(iv) **Biodiversity**. To support and promote: (i) reduction in agricultural land conversion and negative environmental externalities associated with agricultural production; (ii) complementarities with national and international initiatives for biodiversity conservation; (iii) introduction of an ecosystem approach; (iv) restoration and development of protected areas; (v) incentives for conservation and use of local agrobiodiversity through value chains; (vi) agriculture more resilient to extreme and changing climatic events; and (vii) avoidance of depletion of micro-organism, animal and plant genetic resources.

(v) **Land**. To support and promote: (i) continued strengthening of diverse and overlapping tenure/access systems; (ii) measures to decrease land-use impacts, including deforestation and biodiversity loss; (iii) introduction of an ecosystem approach; (iv) community land-use plans linked to higher-level landscape development plans; (v) sustainable, pro-poor land-based investments; and (vi) integrated land management at scale to manage trade-offs and improve or maintain ecosystem service flows.

(vi) **Water**. To support and promote: (i) integrated water-resource management approaches at different levels within watersheds; (ii) water-use efficiency and sustainability in production and good practices in sanitation and wastewater management; and (iii) stronger rural water institutions and integrated, pro-poor governance of land and water.

(vii) **Fisheries and aquaculture**. To support and promote: (i) strengthened fisheries management and tenure rights of fishing communities to common-pool resources; (ii) introduction of an ecosystem approach; (iii) restoration and development of protected areas; (iv) integrated coastal and marine resource management for sustainable fishing practices; (v) investment in retraining and education for fishers to create alternative employment opportunities; and (vi) encouragement of sustainable forms of aquaculture.

(viii) **Forestry**. To support and promote: (i) secure access to and sustainable management of forests, with a particular focus on incentives and participatory forest management; (ii) introduction of an ecosystem approach; (iii) restoration and development of protected areas; (iv) development of value chains for sustainable and renewable natural products and development of certification schemes for sustainable forest management; (v) strengthening of tenure rights to forest resources and governance systems of local communities; (vi) further investment in diversified agroforestry systems; (vii) development of wild foods and non-timber forest products; and (viii) building of the capacity of local institutions to participate in and benefit from existing and emerging carbon and ecosystem markets.

(ix) **Energy**. To support and promote: (i) sustainable practices in developing rural energy resources to expand markets and ensure a steady supply; (ii) development and dissemination of bioenergy and renewable energy-efficient technologies that do not compete with food crop production; (iii) development of institutional approaches to managing local-level energy production and associated distribution systems; (iv) scaling up of the use of clean and renewable energy; and (v) targeting of sustainable energy access at poor people, giving appropriate consideration to gender roles in sourcing energy.

(x) **Infrastructure**. To support and promote: (i) synergies between rural infrastructure construction and sustainable NRM; (ii) incorporation of social and environmental mitigation measures; (iii) community-driven approaches and local employment, especially creation of green jobs; (iv) adoption of context-specific and climate-resilient technologies; and v) ensuring that all new infrastructure investment is climate-smart.

(xi) **Rural financing**. To support and promote: (i) increased access of poor rural people to existing and new sources of green finance; (ii) principles of environmental sustainability integrated into all lending policies, rural finance programmes and rural finance institutions that serve poor rural households; and (iii) awareness-raising through IFAD cofinanced projects, rural finance institutions, financial institutions participating in projects, and finance networks on the merging of rural finance and environmental sustainability.

Annex 2: ENRM policy results and implementation framework (2011-2016)

Goal: Enable poor rural people to escape and remain out of poverty through more-productive and resilient livelihoods and ecosystems

Purpose: To integrate the sustainable management of natural assets across the activities of IFAD and its partners

Output: ENRM scaled up and integrated into IFAD's portfolio

Strategic themes	Strategy objectives	Outcome indicators
1. IFAD's operations	ENRM scaled up and systematically integrated into RB-COSOPs and programmes	• All new RB-COSOPs submitted to the Executive Board and new programme documents systematically and appropriately reflect climate and environment risks and opportunities • Project completion reports: increased percentage of projects rated 4 or more for environment over baseline of 77 per cent (2008 to 2009 two-year average) for 2015 to 2016 cohort • Results and Impact Management System (RIMS): by 2016, average rating increased to 4.25 in 2nd-level indicators (effectiveness/ sustainability) for natural resource interventions over baseline of 3.75 for 2009 • Increased satisfactory ratings under the natural resources and environment domain for projects evaluated in the ARRI report • QE panel report highlights ENRM and climate change concerns and records key success factor ratings for ENRM-related issues • Increased use of ENRM baseline studies in IFAD projects • Development of coherent framework of tools and methods for integrating ENRM/climate into IFAD operations

Implementation milestones	
IFAD's next strategic framework will see climate, environment and sustainable NRM fully integrated into its analysis and objectives	By mid-2011
Environment and climate-change expert participation enhanced in country programme management teams, Operational Strategy and Policy Guidance Committee reviews and design and implementation support missions	Ongoing
IFAD's Environmental and Social Assessment Procedures updated	By mid-2012
Quality enhancement and project design report guidelines and project cycle templates updated to reflect best-practice statements and ENRM sustainability issues, and the scope of their treatment throughout the project cycle	By end-2012
ENRM sensitivity of design regularly tracked throughout the project cycle	Ongoing
Environment and climate monitoring and evaluation framework designed and implemented, including strengthening or addition of indicators in RIMS	By end-2016
Environment- and climate-specific tools piloted (e.g. Geographic Information System, weather information or participatory mapping tool of the Initiative for Mainstreaming Innovation)	Ongoing
Integration/revision of ENRM-related questions in updates of the rural-sector performance assessment of the IFAD performance-based allocation system (PBAS)	By end-2016

(cont.)

Strategic themes	Strategy objectives	Outcome indicators
2. Knowledge, innovation and advocacy	ENRM-related knowledge and learning to drive increased: (i) project design and implementation support; and (ii) innovation that informs enhanced global and national advocacy	• Increased sharing of sustainable intensification options as part of an evergreen revolution in agriculture • Increased attention to the situation, perspectives and needs of poor rural people in global processes and policies relating to climate, agriculture and food • Increased awareness among and capacity of staff and partners to integrate state-of-the-art ENRM and climate tools and approaches • More-accurate ENRM tracking system in place
3. Resource mobilization	Additional supplementary funding secured to assist in systematic integration of ENRM risks and opportunities into overall portfolio	• Continued use of GEF and, potentially, Adaptation Fund cofinancing • New international climate funds (e.g. Green Fund) influenced to include agriculture as necessary area for investment • Untapped potential fully explored to leverage climate finance and fast-track funding commitments for ENRM for poor rural people
4. Internal organization	The appropriate capacity and internal procedures to create incentives for ENRM integration in IFAD	• Environment and Climate Division (ECD) fully staffed and operational, with climate and environment experts recruited to IFAD and in place • IFAD headquarters' environmental management practices further improved – environmental footprint reduced for travel, water, carbon, purchasing, etc. • IFAD's air travel emissions reduced by 2016

Implementation milestones	
Increased engagement in multilateral environment agreements such as CBD, UNCCD and UNFCCC, and in networks such as UNCSD on Rio+20, Multilateral Financial Institutions/ Working Group on Environment, United Nations environment management groups and Poverty Environment Partnership	Ongoing
Number and scope of in-house and regional ENRM awareness-building and training programmes developed and carried out	By December 2012
Environment/climate knowledge and ideas platform created for staff and partners	By end-2011
Enhanced collaboration with the United Nations family and Rome-based agencies on ENRM	Ongoing
Annual Green Award for staff instituted	By end-2012
ENRM portfolio monitoring system set up	By end-2012
Study on financing opportunities completed Resource mobilization plan completed and presented to Senior Management GEF-5 grant financing secured to scale up innovative practices on ENRM	From June 2011 to June 2014
UNFCCC LDCF/SCCF grant financing secured to support IFAD operations in next LDCR/SCCF replenishments	From June 2011 to June 2014
IFAD access to Adaptation Fund established, with pilot project initiated	From mid-2011
ECD capacity increased and staff shared with regions	Ongoing
IFAD receiving LEED platinum certification for building	By end-2012
IFAD policies and strategies mapped to identify constraints on and opportunities to catalyse ENRM integration	By end-2012
IFAD travel manual revised and assessment of carbon offsetting addressed	By mid-2012
Develop a plan of action for greening IFAD	By end-2011

CASE STUDY

Student farmers triple yields with integrated pest management in Rwanda (cover photo)

The farmer field school in Nyange village, Ngororero, Rwanda, is made up of 25 students and 5 peer trainers working experimental plots high in the mountains. Farmers learn the value of applying integrated pest management (IPM) and of testing various varieties of maize adapted to different weather and soil conditions. In five groups of five students each, the students cultivate two test plots of maize of 6 ares (1 are = 100 square metres). On one plot, the farmers apply fertilizer according to actual need, and use pesticides taking into account the life cycles of pests and their interaction with the environment. On the other, control plot, they use traditional low-input/low-output methods of cultivation.

The yield on the traditional plot was 12.4 kilograms (kg)/are, while the IPM plot produced 39.5 kg/are. Farmers are now ready to scale up their use of IPM to larger plots and thus sustainably increase their incomes.

Sylvestre Rwamahina, a peer trainer growing Irish potatoes, bananas and beans, says, “I have left the traditional method of farming for the more modern IPM method in my own farm work.” He adds that effective IPM not only saves farmers money on pesticide use, but also reduces negative impacts on the environment and human health.

These activities are part of the IFAD-cofinanced Support Project for the Strategic Plan for the Transformation of Agriculture (PAPSTA). Through the project, over 110,000 households have been mobilized to engage in soil protection and conservation practices, with over 30,000 hectares of degraded land hedged and protected against erosion.

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