

Reclaiming the Land Sustaining Livelihoods



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Global
Environment
Facility

United Nations Development Programme (UNDP)

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The Global Environment Facility (GEF) was established to forge international cooperation and finance actions to address four critical threats to the global environment: biodiversity loss, climate change, degradation of international waters and ozone depletion. Launched in 1991 as an experimental facility, the GEF was restructured after the 1992 Earth Summit in Rio de Janeiro. The facility that emerged after restructuring was more strategic, effective, transparent and participatory. During its first decade, GEF allocated US\$4.5 billion in grants, supplemented by more than \$14.5 billion in additional financing, for more than 1,300 projects in 140 developing countries and transitional economies, as well as more than 5,000 projects in 73 countries that participate in the GEF Small Grants Programme, managed by UNDP. In 2002,

donors pledged \$3 billion to finance projects from 2002 to 2006.

In addition to its original mandate, the May 2003 GEF Council approved two new focal areas. The GEF now provides financial assistance for the mitigation and prevention of land degradation and persistent organic pollutants. GEF-funded projects are implemented through the following development agencies: UNDP, UNEP and the World Bank. The GEF also benefits from having the following executing agencies: African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, Food and Agricultural Organization, Inter-American Development Bank, International Fund for Agricultural Development and the United Nations Industrial Development Organization.

The UNDP-GEF Team

The Global Environment Facility team of the United Nations Development Programme (UNDP-GEF) is headquartered in New York. UNDP-GEF has six regional coordination units located in Malaysia, Slovakia, Lebanon, Mexico, Senegal and South Africa. Working with other international organizations, bilateral development agencies, national institutions, non-governmental organizations, private sector entities and academic institutions, the UNDP-GEF team supports the development of projects and oversees a mature portfolio of projects in all six GEF focal areas of biodiversity, climate change, international waters, land degradation, persistent organic pollutants and ozone depleting substance phase-out (the latter minimally). The cumulative UNDP-GEF portfolio is valued at \$1.8 billion in core grants, with approximately \$3 billion raised in additional co-financing. On behalf of the GEF partnership, UNDP-GEF also manages its two corporate programmes, the GEF Small Grants Programme and the GEF National Dialogue Initiative.

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Reclaiming the Land Sustaining Livelihoods

Land degradation, which includes both desertification and deforestation, is occurring worldwide, with the most severe impact on the poorest rural communities. It affects more than 110 countries and as much as two thirds of the world's agricultural land. As a result, agricultural productivity is declining sharply, while the number of mouths to feed continues to grow. The situation is especially dire in Africa, where 43 per cent of the land is moderately to severely at risk from human-induced land degradation and where millions of people are threatened by starvation.

Every year, an estimated \$42 billion in income and 6 million hectares of productive land are lost due to land degradation and declining agricultural productivity. Land degradation is caused by soil erosion, loss of fertility and soil cover, and chemical pollution. Unsustainable cultivation, overgrazing, deforestation and aquifer degradation are the primary causes of land degradation in rural areas.

“Drought and desertification threaten the livelihood of over 1 billion people in more than 110 countries around the world.”

– Kofi Annan, Secretary-General,
United Nations

“The fight against desertification is fundamentally a fight against poverty.”

– Hama Arba Diallo, Executive Secretary,
United Nations Convention to
Combat Desertification and Drought



Combating Land Degradation

The incidence of drought since 1975 has increased nearly fourfold from 12 to 48 episodes.

Source: The OFDA/CRED International Disaster Database



Dust off Morocco taken 02/17/2004 at 11 :50 by the satellite Terra, NASA.



Nowhere is the fragile balance among human communities, nature and our changing climate more evident than in the world's growing drylands and in its shrinking forests. Affected regions can be found on every continent and are typically characterized by rapid population growth, high rates of deforestation, recurrent episodes of drought, erosion and extreme poverty. These are regions where shifting sands, eroding soils and landslides can quickly undermine rural communities and the resources on which they depend. They are also the front lines of a global effort to promote sustainable development.

At its root, land degradation is both a cause and consequence of poverty. In Africa, where the problem is most acute, the costs of inaction are clear. Across the continent, worsening dust storms, damaged watersheds, lost forests and lower agricultural productivity are directly linked to human poverty, migration and instability.

- Within the vast stretches of the Sahara Desert, the long-term damage from overgrazing threatens to make life even more difficult for the 60 per cent of Niger's population that survive on less than a dollar a day.
- In Botswana, where most of the population depend on agriculture for their livelihoods, soil erosion and unsustainable use of renewable natural resources are putting 40 per cent of the country at risk.
- On the island nation of Mauritius, where little arable land is left, the total area suitable for productive agriculture is declining while pressures on the country's remaining forests are increasing.

US\$ 42 billion:
Annual income foregone
in the areas immediately
affected by desertification
each year.

Source: United Nations Convention to Combat Desertification

But land degradation is not only an African problem. **Pakistan's** drylands are increasingly threatened by declining soil fertility and flash floods, early warning signs of a looming crisis. In the **Dominican Republic**, the future development of one of the country's poorest and driest regions hinges on the reliability of fresh water supplies. Water and electricity are currently provided to the region by the Sabana Yegua Dam, but uncontrolled development upriver has led to higher rates of erosion and siltation that will gradually curtail the dam's useful life.

For many years, efforts to address these and other land degradation problems were largely tied to projects dealing with biodiversity, climate change or international waters. Between 1996 and 2000, at least 87 such projects, which cut across sectors and cost a total of \$120 million, were undertaken by the Global Environment Facility (GEF) through the United Nations Development Programme (UNDP). But more than a decade after the signing of the United Nations Convention to Combat Desertification (see box), growing recognition of the direct links among land degradation, sustainable development, poverty alleviation and improved environmental management led to a new approach. In October 2002, UNDP-GEF began directly supporting countries' efforts to combat land degradation through the promotion of sustainable land management.

The success of any effort in this area depends heavily on the ability of communities and governments at the local, provincial and national levels to enact policies that foster sound environmental management. Ultimately, rural people and communities manage the land and its natural resources. Their decisions and actions will, to a large extent, determine whether sustainable land management becomes a reality.

UNDP-GEF recognizes this by partnering with willing and innovative communities, governments, entrepreneurs and non-governmental organizations, and supports them in making the changes needed to bring back a balance between human needs and environmental limits.

The following section of this brochure focuses on 'cross-cutting' projects that address land degradation but that were primarily designed to deal with climate change, biodiversity loss or issues associated with international waters. It then turns to specific UNDP-GEF land degradation projects that seek to build capacity or foster sustainable land management practices. The brochure concludes by highlighting the GEF's pilot effort at developing a longer-term, comprehensive approach to combating land degradation, with a special emphasis on least developed countries and small island nations.

By 2050, global population is expected to increase to a total of about 9 billion, with growth occurring primarily in developing countries where the potential to increase arable land is minimal.

Source: IIASA & FAO. 2002. Global agro-ecological assessment for agriculture in the 21st century, by G. Fischer, M. Shah, H. van Velthuizen & F.O. Nachtergaele. Laxenburg, Austria & Rome.

Forging consensus: The international response to land degradation

Effectively responding to the threat posed by land degradation was the impetus behind the United Nations Convention to Combat Desertification, signed at the Rio Earth Summit in 1992. Although previous international discussions on desertification date back to the 1970s, the convention was the first to recognize land degradation as a distinct environmental threat and to propose practical measures to combat it in developing countries.

Today, over 180 countries have signed the convention, which calls upon members to create and implement national action plans to combat desertification. UNDP has supported 60 countries affected by desertification and drought in the preparation of national and sub-regional programmes to meet their commitments under the convention. To this end, the UNDP Drylands Development Centre assists countries in creating supportive national policies and planning frameworks, building local capacity to carry them out and to prepare for drought.

More information on national action plans, including the texts of completed plans, is available at: www.unccd.int/main.php



Learning from Projects that Cut Across Sectors

25,000 million tonnes:
Amount of soil lost
annually as a result of
water erosion alone.

Source: *Our Land Our Future*. Rome and Nairobi, Food and Agriculture Organization and United Nations Environment Programme.

220 million hectares:
The area of tropical
forests that have been
degraded between
1975-1990 mainly for
food production.

Source: *Our Land Our Future*. Rome and Nairobi, Food and Agriculture Organization and United Nations Environment Programme.

Before direct funding was available for projects to combat land degradation, it was often included as a component of UNDP-GEF efforts to address biodiversity loss, climate change and issues related to international waters. A project to reduce deforestation, for instance, could simultaneously protect biodiversity, mitigate climate change and prevent further degradation of the land. These multisectoral efforts have generated some important lessons that will guide the development and execution of future UNDP-GEF land degradation projects.

Managing diverse ecosystems in Senegal

The climatic zones of Senegal are highly diverse, encompassing steppes, grasslands, tree savannahs, dry open forests and coastal ecosystems in the Saharan, Sahelian, Sudanese and Guinean areas. Senegal's wildlife – from the panther to the African wolf to marine turtles and chimpanzees – is equally diverse and a true national treasure, providing environmental, economic, social and cultural benefits to its people.

Despite the establishment of protected areas over 40 per cent of Senegal's land, including UNESCO World Heritage and four Ramsar Wetland Sites, pure conservation is no longer considered the most effective tool for addressing land degradation. Just outside the borders of protected land, severe degradation of the savannah and dry forests is occurring because of rapidly growing human settlements, expanding cultivation, increases in logging and deforestation, excessive fuelwood harvesting and uncontrolled brush fires. A further threat is poaching, which has eliminated the giraffe from the Senegalese plains and decimated the majestic elephant and antelope populations. Annual forest degradation in the country is about 250,000 hectares, or 2 per cent of the country's wood resources.

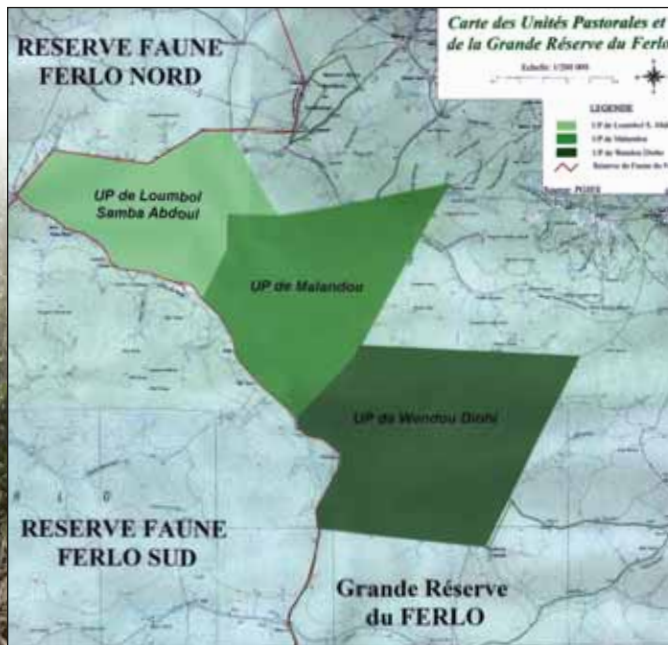


The root causes of this destruction are complex, linked in part to acute poverty and a lack of employment alternatives. There is little history of organized land management, and protected areas are entirely cut off from surrounding communities, with no 'buffer zones' where economic activity can take place in an environmentally friendly manner. In response, a UNDP-GEF project called *Integrated Ecosystem Management of Four Representative Landscapes* is empowering rural communities to employ sustainable land use practices in four distinct areas representing the major Senegalese ecosystems. The project encompasses:

- **The creation of protected areas and buffer zones that are jointly managed with communities.** For the first time in the Sahel, community co-management of protected land has been established.
- **The establishment and promotion of community nature reserves and pastoral units.** In total, legally established reserves and pastoral units cover 267,000 hectares. In November 2003, the Senegalese Government legally established three pastoral units around the Ferlo Game Reserves, effectively granting pastoralists control over 184,450 hectares. This historic event marked the first time since 1964 that pastoralists were recognized as a collective group able to contribute positively to land improvement, biodiversity and conservation efforts (see box).
- **The establishment of village 'territories', founded on streamlined production systems, rationalized land use, alternative energy sources and food and energy self-sufficiency.** Village territories are eligible to receive small-scale loans to support agroforestry, water and land conservation activities and more intensive grazing and agriculture on suitable lands.

The project recognizes that conservation is not likely to succeed unless communities are actively involved in defining and supporting common goals. Legal access to land must also be granted to pastoral groups to ensure sustainable use of natural resources across a wide swath of territory.

Map of Pastoral Units in the Ferlo Reserve, Senegal



In focus: Integrating ecosystem management

Country: Senegal

Implementing agency: UNDP

Executing agency: Ministry of Environment with the cooperation of DPN, DEFCCS, DCERP; and Ministry of Fisheries

Co-financing partners: UNDP, European Union, JICA, USAID, GTZ, Netherlands

GEF financing: \$10.07 million

Co-financing: \$21.54 million

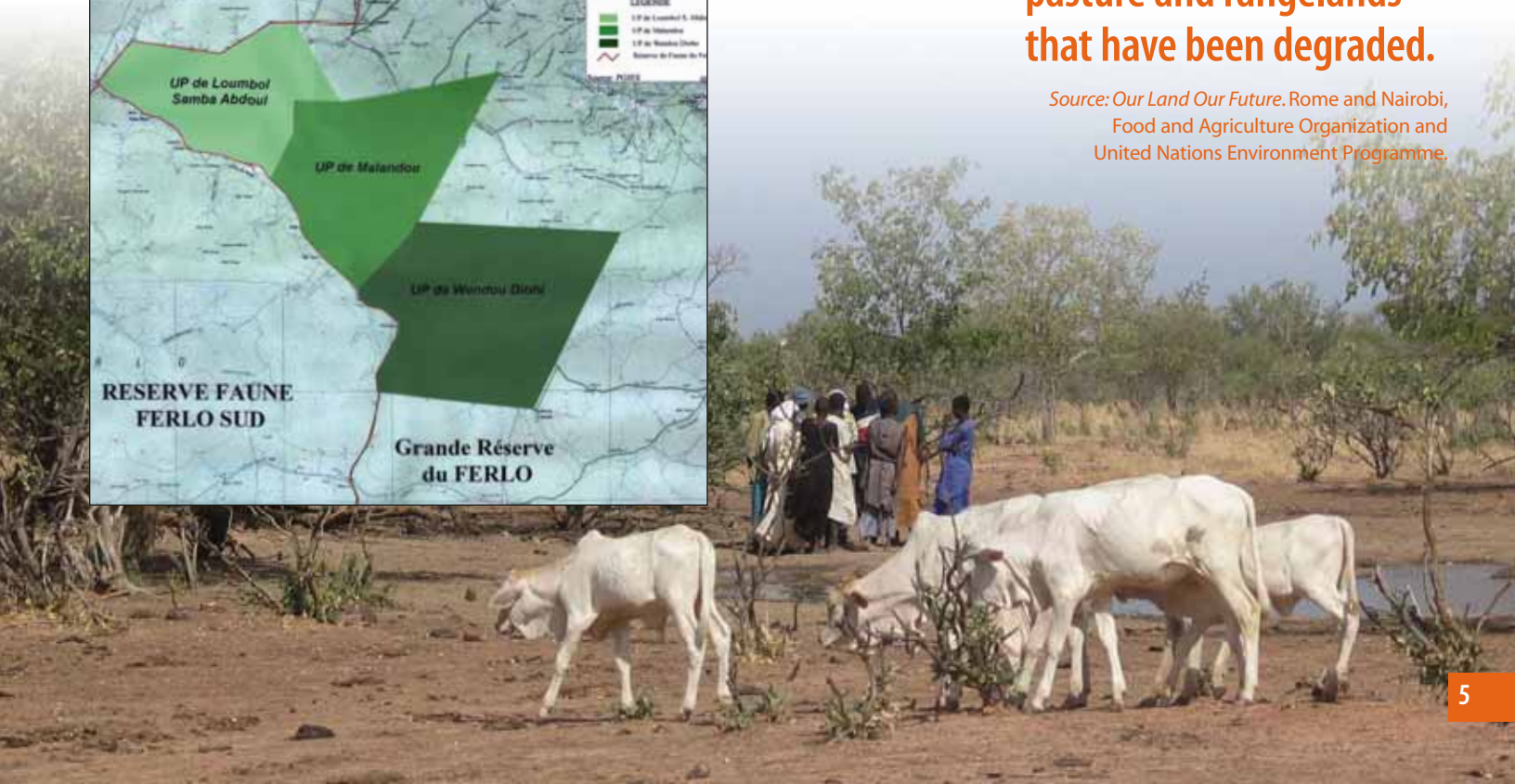
Total financing: \$31.61 million

Major achievement: For the first time in four decades, pastoralists have been granted control over 185,000 hectares of traditional land. Legal recognition was critical for maintaining the sustainable use of natural resources while planning and managing communal grazing lands.

The project facilitated this groundbreaking decision, and its success will demonstrate that pastoralism can be a key to maintaining biodiversity, ecosystem conservation and reforestation.

680 million hectares: Representing about 20 per cent of the world's pasture and rangelands that have been degraded.

Source: *Our Land Our Future*. Rome and Nairobi, Food and Agriculture Organization and United Nations Environment Programme.



In focus: High Atlas Mountains Project

Country: Morocco

Implementing agency: UNDP

Executing agency:
Ministry of Agriculture

Co-financing partners:
Caisse française de développement

GEF financing: \$4.37 million

Co-financing: \$5.39 million

Total financing: \$9.76 million

Major achievement: Education programmes for 300 school children, job training for women, and the establishment of community organizations to manage rangelands sustainably.

Keys to success: Experience from the High Atlas Mountains Project

The project has shown that natural resource management is a lengthy process requiring attention to:

- Basic community needs, such as health, education and culture;
- Ensuring an open dialogue and strong partnership among different – often competing – land users;
- The creation of a 'learning by doing approach' by local communities and project staff in order to achieve successful implementation at the local level.

Protecting the environment and a pastoral way of life in Morocco

In **Morocco**, thousands of years of co-evolution among humans, their livestock and native flora and fauna created a unique ecological symbiosis in the southern High Atlas Mountains, the Anti-Atlas and regions of the Sahara Desert. Fundamental to this relationship is the tradition of transhumance, or the herding of a diverse mixture of livestock between winter and summer pastures.

Sadly, recent decades have witnessed a dramatic deterioration of the region's habitats and a rapid increase in poverty. This is attributed to many factors, including the rise of unplanned settlements, conversion of traditional rangelands to marginal croplands, tree cutting for fuelwood and a dependence on monoculture seeds that are more vulnerable to droughts and market fluctuations. Ineffective land-use planning and enforcement at the local level, a breakdown of the communal management system, poorly defined agricultural policies, and a lack of community awareness are all root causes.

Originally conceived as an effort to protect biological diversity, the UNDP-GEF *High Atlas Mountains Project* adopted an innovative approach that enables people to farm sustainably while keeping their livestock moving and maintaining biodiversity.

Essential components of the project include:

- **An emphasis on traditional expertise.** Three pastoral groups and two women's organizations were established under the guidance and with the financial support of the project, and three more are planned. Although still young, these organizations are expected over time to develop the authority and capacity to manage rangelands sustainably.
- **Providing support for and education on pastoral issues and biodiversity conservation.** The project distributed education kits to 300 school-aged children, established an education programme for pastoral youth and supported literacy programmes for 920 women. In addition, it has provided training in the areas of beekeeping, irrigation and, for women specifically, poultry husbandry, handicraft production and Berber calligraphy.
- **Integration of biodiversity issues and plans into policy debate at the provincial and national levels.** Policy changes will not take place without greater awareness of the potential impact of land degradation. The project is increasing public understanding of the problem through national media and education campaigns, workshops and capacity-building exercises. It is also assisting in the development of new policies, such as a National Pastoral Code. The potentially damaging impact of tourism on globally significant mountain zones will be addressed through the training of mountain guides at the Azilal School and development of an eco-tourism charter.

Rehabilitating community rangelands in the Sudan

Rangelands cover over 60 per cent of Sudan's land area, supporting one of the largest populations of livestock in Africa. Though more than half the country's population depend on livestock for their subsistence, cyclical droughts and continuous cultivation have degraded the rangelands, leading to a downward spiral of decreasing crop and livestock production, greater pressures on the soil and declining livelihoods. These problems are compounded by depletion of the existing vegetation cover due to over-harvesting of timber, fuelwood and other forest products.

The *Community-based Rangeland Rehabilitation* initiative supported by UNDP-GEF and created primarily to combat climate change has also helped local people rehabilitate their rangelands and livestock. In the process, family incomes increased and carbon that would otherwise have entered the atmosphere was sequestered in the biomass of plants. The project invested in the talents of communities themselves, focusing especially on the participation of women and the poor.

The results have been impressive: the capacity of local communities to monitor and manage their rangelands was strengthened, as were their legal rights to do so. Seventeen village development committees were created to address rangeland and water management. In addition, women learned new gardening and pastoral skills and gained access to credit. Representatives from each of the 17 villages received training in income-generating activities as well as various aspects of community development.

Private assets were brought into play through the development of individual grazing allotments that did not infringe upon the common rights of the community. The project also promoted alternative sources of income for local communities as an incentive to reduce cultivated areas. These income sources included:

- Restocking families with sheep;
- Providing a revolving fund to secure better quality seed for increased production from smaller plots;
- Digging strategically placed boreholes and installing water pumps to irrigate women's home gardens that supplement diets and incomes.

Specific land-rehabilitation activities included:

- Planting trees and grasses to create 195 kilometres of stabilizing windbreaks;
- Improving 100 hectares of rangeland with native perennial grasses;
- Developing community-based land-use management plans;
- Introducing efficient charcoal stoves in 90 per cent of households;
- Promoting mud bricks for construction as an alternative to timber.

The project has already shown economic gains for households by reducing land degradation and increasing land productivity. But perhaps the best measure of success comes from the fact that neighbouring communities have adopted many of the project's successes, particularly those related to rangeland rehabilitation, boreholes and revolving funds. Word of these successes travelled north and south, carried along by pastoralists travelling their traditional routes.

In focus: Rehabilitating community rangelands

Country: Sudan

Implementing agency: UNDP

Executing agency: Animal Resources, Range and Pasture Administration (Government Ministry of Agriculture, Nature and Land)

Cooperating agency: UNOPS

Co-financing partners: UNDP, Swedish Sudanese Association, government

GEF financing: \$1.50 million

Co-financing: \$0.51 million

Total financing: \$2.01 million

Major achievement: A post-project evaluation has shown that neighbouring communities have adopted many of the successes of the project, particularly related to rangeland rehabilitation, boreholes and revolving funds. These communities all are north and south of the original project site, reflecting the strong influence of 'word of mouth' communication for disseminating stories among transhumants moving along their traditional pastoral routes.



In focus: Indigenous vegetation project

Countries: Botswana, Kenya, Mali

Implementing agency: UNDP and UNEP

Executing agency: Regional partnership - Ministry of Agriculture (Botswana), Ministry of Environmental Conservation¹ (Kenya), Ministry of Environment (Mali).

Co-financing partners: NORAD, GTZ

GEF financing: \$8.66 million

Co-financing: \$3.55 million

Total financing: \$12.21 million

Major achievement: In all three countries, environmental management committees have been established at the local level to link conservation and development priorities.

In Botswana, the project's success has led the national government to request assistance in expanding the rangeland management systems beyond the pilot sites and in drafting new national policies on community-based land management.



Saving livelihoods and rangelands in Botswana

Ecologically, Botswana appears to be a paradox: graced by a multitude of wildlife species, including elephants, giraffes, kudus, lions and hippos, it is also a land of deserts and encroaching sand dunes. Traditionally, land-management practices have enabled the people of Botswana to maintain a secure livelihood while regulating the use of rangeland resources. The breakdown of these traditional systems due to increased population pressures is resulting in overwhelming land degradation, overgrazing and exploitation of natural resources.

The *Management of Indigenous Vegetation for the Rehabilitation of Degraded Rangelands in the Arid Zone of Africa* project – an \$8.6 million effort supported jointly by UNDP and UNEP and covering **Botswana, Kenya and Mali** – attempts to tackle these issues while improving ecosystem health and alleviating poverty. The project focuses on improving indigenous management systems as opposed to introducing new technologies that may not be acceptable or affordable in the long run. In Botswana, there are three fundamental aspects to the project:

- **Community involvement.** Through 14 newly established Community Resource Management Trusts, local communities make and implement management decisions affecting their rangelands. The trusts are composed of members elected by the communities and include men and women from both rich and poor families. To encourage even greater involvement, the project supported the formation of community action plans. Through these plans, communities identify traditional management systems, highlight their strengths and weaknesses, and determine how they can effectively address the current situation.
- **Working with the government to give communities greater control over local resources.** The local government fully recognizes both the community trusts and action plans and its technical staff advise communities during their formulation. The project's approach to communal rangeland management has so impressed land-use planners in the national government and district councils that they have asked for assistance in developing similar management systems for other areas of the country. In addition, project staff have been requested to provide input into the redrafting of two national policies relevant to community-based management of rangeland resources.
- **Maintaining biodiversity and preventing land degradation while enhancing livelihoods.** One result of the community action plans was the decision to install drift fences separating livestock grazing from arable regions – a priority concern of the local community. Additional activities include agroforestry and beekeeping for women and out-of-school youth, conservation of areas rich in biodiversity, rainwater harvesting, eco-tourism initiatives, and sand dune stabilization. Community action plans also guide the development of rangeland resource management plans for each community. These will help safeguard the incomes of many small- and medium-sized pastoral communities, whose livelihoods depend on continued access to healthy rangeland resources.

Overall, the project has highlighted the importance of supporting representative community institutions in overseeing the management of rangeland resources. It was flexible enough to accommodate emerging community priorities, while still addressing key project goals. This approach was able to garner the broad local support so critical to long-term success.



Discussing rangeland health with community leaders in Botswana.

Developing Capacity for Sustainable Land Management

Many countries have finished or are completing national frameworks for sustainable development, environmental action plans, national action plans to combat desertification, forest action plans, and other programmes that are directly linked to their commitments to the United Nations Convention to Combat Desertification. Encouraging the co-ordination and integration of these efforts to promote sustainable land management is a strategic priority of UNDP-GEF. This is reflected in the fact that, since 2002, funding has been made available for projects focusing specifically on land degradation, as described in the following sections.

On a practical level, including land degradation threats into national planning processes allows countries to:

- Establish accurate budgetary needs for addressing land degradation;
- Create a forum for the type of multi-ministry debate needed to effectively address root causes of land degradation;
- Link issues of environmental sustainability to efforts aimed at alleviating poverty, promoting economic development and fostering regional integration;
- Highlight obstacles – including information gaps on environmental trends – to incorporating sustainable practices into everyday actions and legislation.

While the benefits of this approach may be clear, achieving them can be a complex undertaking. UNDP-GEF supports countries in carrying out this process at three levels:

- **Individual** – enhancing the expertise, capabilities, roles and motivations of individuals, including agricultural extension workers, community leaders and innovators, non-governmental organization (NGO) staff and government officials;
- **Institutional** – assessing the structure, functions and responsibilities of existing institutions that have an impact on sustainable land management. Mauritius provides an interesting example of this approach (see box next page);
- **Systemic** – reviewing the impact of existing policies and laws on how people manage the land, and supporting alternatives. In Botswana, for instance, this has meant drafting a national land-care policy to help overcome widespread degradation and promote sustainable land management.

Concentrating on least developed and small island states

UNDP-GEF's efforts to develop capacity for combating land degradation are focused on countries in greatest need, specifically those classified as least developed or small island states. Forty-eight of these countries in Africa, Asia, the Caribbean and the Pacific are eligible for expedited UNDP-GEF funding through the *Targeted Portfolio Project for Capacity Building and Mainstreaming of Sustainable Land Management*. UNDP-GEF's strategy for capacity-building in land management starts with the training of community and government experts. Efforts are also made to bring about a more integrated and cross-sectoral approach to land management and planning through relevant institutions. Once this has been accomplished, community-driven technologies and solutions to reduce land degradation are promoted and demonstrated. UNDP-GEF seeks incentives for replicating these pilot efforts on a larger scale and grant-based financing to carry them out.

2,000 million hectares:
The amount of soil
(equivalent to 15 per cent
of the Earth's land area)
that has been degraded
through human activities.

Source: GLASOD





In focus: Building capacity in Mauritius

Most of the useable land in Mauritius has already been put to productive use, and the amount of land remaining for development is scant.

Land planning failures in the past have led to a mixture of incompatible developments, encroachment onto environmentally sensitive areas and conversion of prime agricultural land for settlement and infrastructure.

Mauritius recognizes its specific vulnerability to land degradation and places a high priority on sustainable land management.

The UNDP-GEF *Capacity Building for Sustainable Land Management* project will help facilitate sustainable land management in Mauritius through strengthened capacity-development and policy and planning tools at the local and national levels. It will also study the ecological health of public and private forests, providing incentives for sustainable management of privately held land.

Country: Mauritius (including Rodrigues)

Implementing agency: UNDP

Executing agency: Ministry of Finance and Economic Development

Co-financing partners: Government of Mauritius

GEF financing: \$0.60 million

Co-financing: \$0.60 million

Total financing: \$1.2 million

Experience has shown that the success of projects often depends on the degree to which local communities are engaged in project preparation and implementation. UNDP-GEF is building on this idea through the development of the *World Initiative for Sustainable Pastoralism*, a global partnership that will demonstrate what millions of pastoralists have known all along – that extensive livestock production can be bio-friendly and provide sustainable livelihoods for millions.

The initiative recognizes that the political, economic and social obstacles faced by pastoralists in a range of countries from Asia and the Middle East to Africa and Latin America are strikingly similar. They include national regulations that discourage pastoralism and development programmes that force pastoralists onto increasingly unproductive lands. This is happening despite the growing realization that pastoralism not only contributes to maintaining biodiversity and ecosystem conservation, but is a productive and sustainable land use that alleviates poverty.

Addressing these challenges demands more than just a change in policies. It also requires encouragement and support for pastoral leaders to represent their constituencies at the highest levels. With that in mind, the *World Initiative for Sustainable Pastoralism* is working towards three main objectives:

- Improving understanding of mobile pastoralism as a form of productive and sustainable land management that can promote poverty alleviation and ecosystem integrity;
- Strengthening the capacity of and networking among pastoralists, civil society organizations, and public and private institutions;
- Advocating for effective policies and laws favouring sustainable pastoral resource management.

Effective project design

Successful UNDP-GEF land degradation projects have a number of common elements:

- Wherever possible, clear links are made between the project and national strategies to combat land degradation.
- Even projects that focus on local sites often manage to address barriers to national capacity-development.
- There is a comprehensive focus on capacity development that takes into account the importance of community ownership, involvement by relevant stakeholders and financial sustainability.
- Specific skills, in areas such as integrated land use planning, restoration of ecosystems and policy reforms, are introduced or developed.



Promoting Sustainable Practices

Supporting on-the-ground efforts to introduce innovative, indigenous management practices or to ensure the spread of successful pilot projects is the second key area of UNDP-GEF's efforts to combat land degradation.

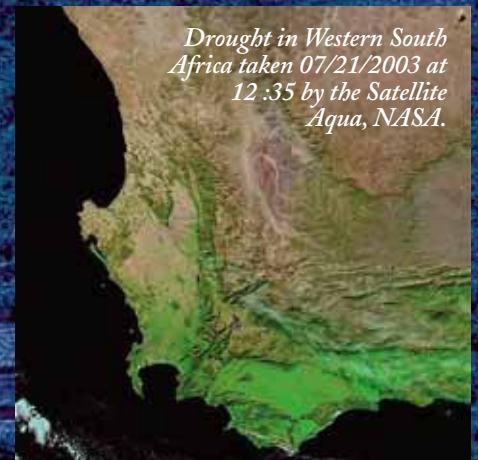
When it comes to implementing sustainable land management practices, UNDP-GEF focuses on three critical areas: agriculture, rangeland and pastureland management, and forest and woodland management. In all three cases, a strategy that addresses the root causes of degradation and the barriers to sustainable land management usually has the greatest chance of success.

In focus: Farming corridors in Côte d'Ivoire

The GEF Small Grants Programme continues to demonstrate the effectiveness of low-cost approaches to addressing land degradation. Working with Côte d'Ivoire's Institute of Cultural Affairs, a \$10,000 agroforestry project sought to improve crop yields in a transition zone between the savannah and the forest by experimenting with fields planted with hedges on either side, a practice known as 'farming corridors'.

The technique involved planting hedges of *Rhizobium* plant species, which produce nitrogen near their roots, in order to see whether the crops in the farming corridors benefited from the increased fertility of the soil.

The project partnered with farmers in three villages in the district of Toumodi. Several national research institutes donated fields for experimentation that also became testing grounds for farmers learning agroforestry techniques. The final results demonstrated that the corridor technique does, after a period of 3 to 4 years, lead to significant improvements in crop yields in deteriorated fields.



Drought in Western South Africa taken 07/21/2003 at 12 :35 by the Satellite Aqua, NASA.

19.5 million hectares:
The amount of valuable agricultural land lost to industry and urbanization around the world.

Source: *Our Land Our Future*. Rome and Nairobi, Food and Agriculture Organization and United Nations Environment Programme.

Defining the landscape approach

The scale of any conservation project depends on a number of variables, including the presence and size of human communities, current and planned land uses, the demand for ecosystem services, and the needs of various, often conflicting and competing land uses (such as agriculture, wildlife, energy and mining).

To be effective, projects to combat land degradation should examine and address the landscape – farms and forests, cities and watersheds – as an integrated whole. Turning that vision of a ‘landscape approach’ into reality on the ground is the challenge faced by every UNDP-GEF project.

Niger’s Air Ténéré project is a good example of such an approach. The \$10 million project is focusing on the sustainability of a 20-million hectare swath of land that is being increasingly degraded by unsustainable agriculture, grazing and forestry. It is designed to build on a number of already established biodiversity conservation projects by making sure that they all take the landscape approach into account, are coordinated for greater impact, and are able to successfully resolve land-use conflicts.



Sustainable agriculture

Like much of Africa’s arable land, **Senegal’s** Groundnut Basin is deteriorating. The region’s sustainability is in jeopardy because of rapid population growth, poor agricultural practices, devastating brushfires, repeated drought, overgrazing, and soil salinization and acidification. Yet the region is critical not just to local farmers, but also to the national economy. Groundnuts alone account for nearly 75 per cent of Senegal’s agricultural production, and the sector employs up to 50 per cent of the population.

Unlike some countries, Senegal has no reservoir of undeveloped land in the Groundnut Basin to which farmers can shift their crops: rehabilitation of the region’s depleted soils is therefore the only option. UNDP-GEF is currently working with Senegal’s Department of Forestry, Wildlife and Soil Conservation on a \$10.5 million effort called *Groundnut Basin Soil Management and Regeneration* to regenerate and restore ecosystem functioning in the Basin. The project’s focus on the landscape as a whole – and its cross-sectoral approach involving agriculture, forestry, water and energy issues will allow it to address fundamental causes of degradation and facilitate sustainable land management.

Overall, the UNDP-GEF experience with sustainable agriculture has highlighted the benefits of five key components of land degradation projects, including:

- The promotion of suitable land uses, including protection from farming in marginal lands, and alternative livelihoods where agriculture is not sustainable;
- Dissemination of improved tillage methods and the use of agroforestry to help reduce erosion;
- Improved management and disposal of agricultural wastes and conservation of water;
- Innovative and/or indigenous solutions, such as greater use of organic farming;
- Adoption of the landscape approach to sustainable land management (see box).



Forest and woodland management

UNDP-GEF's strategy in the broad area of sustainable forest management has two areas of focus: one is watershed management in forested areas, such as the Sabana Yegua watershed in the **Dominican Republic**. There, poor land management upstream of the Sabana Yegua Dam has led to increased erosion and siltation. In response, UNDP-GEF is collaborating with the Fundación Sur Futuro to support on-the-ground investments in sustainable agriculture, grazing and forestry. By doing so, erosion is reduced and siltation declines, extending the dam's expected lifespan and ensuring secure water supplies and electricity for the surrounding region. The project is also promoting the idea of environmental service fees, which can be used as an incentive for more environmentally friendly land use. Implemented effectively, environmental service fees can help reward communities that manage their land wisely.

The second area of focus is promoting sustainable and renewable energy sources for rural populations in order to reduce their dependence on natural forests. An effective example of this approach comes from the **GEF Small Grants Programme**. In the **United Republic of Tanzania**, for example, the programme encourages the use of low-cost biogas technologies and the wider adoption of fuel-efficient cook stoves (see box).

Such an approach can help reduce fuelwood consumption by more than 50 per cent, alleviating the pressure on surrounding forests and woodlands.

1.6 billion cubic metres: Annual global consumption of all wood products

Source: WWF

GEF Small Grants Programme and Land Degradation

More than 75 per cent of Tanzanians depend directly on natural resources for their livelihoods. This heavy dependence has led to over-cultivation, over-grazing, loss of vegetation cover and massive soil erosion, all of which has contributed to land degradation and the loss of productive land.

Deforestation in the **United Republic of Tanzania** is estimated at 92,000 hectares per year, with tree cutting for fuelwood the second leading cause.

Since 2000, the **GEF Small Grants Programme** has been addressing this problem by supporting greater use of low-cost biogas cooking technology and fuel-efficient cooking stoves.

A single biogas unit, which generates fuel from human and animal waste, is able to reduce the scale of deforestation by 37 hectares per year. Widespread use of fuel-efficient stoves, which are used in conjunction with biogas units for large families or schools, can have a similar impact.

By 2003, about 600 biogas units were operational in the country through initiatives supported by the Small Grants Programme. About the same number of fuel efficient stoves were also operational. The goal is to support 1,000 units by 2005 and reduce deforestation by 37,000 hectares per year.

There have been other important results from this effort. Rural poverty has been lessened through cost savings on charcoal and wood products previously needed for cooking. In addition, the programme has helped poor farmers obtain dairy cows, which can supply the waste needed for biogas units, supplementing rural incomes. Evidence also suggests that the workload on women, who were often responsible for collecting firewood, has been reduced and that the incidence of respiratory disease is decreasing because the new biogas units and stoves produce cleaner burning fuel.

Designing good rangeland and pastureland management projects

A common set of features distinguishes well-designed projects addressing rangeland and pastureland management. These include:

- Recognizing the value of livestock diversity and mobility for conservation, sustainable land management and livelihoods;
- Ensuring equitable access rights to land by all legitimate users, and managing that land effectively;
- Recognizing and reconciling conflicting land-use demands;
- Finding 'exit strategies' from unsustainable land use, such as reducing the number of households dependent on overgrazed land by promoting environmentally friendly alternatives;
- Recognizing the particular needs of pastoralists and strengthening their ability to voice their concerns.



Sustainable rangeland and pasture management in Patagonia

Livestock have been a feature of the Patagonian landscape for centuries, yet the intensification and specialization of production in recent decades has led to significant land degradation. An estimated 85 per cent of Patagonia has been affected by some degree of desertification, much of it in **Argentina**. The repercussions of these changes are not just ecological, but economic as the potential of pasturelands diminishes and productive land is abandoned from overuse.

A new \$21.4 million partnership between UNDP-GEF and the Government of Argentina is promoting improved and sustainable grazing, including diversification of livestock with other native species such as llamas. It is also reconciling land-use planning with protected areas and reserves. The project – Sustainable Management of Arid and Semi-arid Ecosystems to Combat Desertification in Patagonia – will also support sustainable development alternatives through a national programme promoting livestock development as a means for alleviating poverty.



65 per cent of all drylands are rangelands.

Source: R. Reid et al. 2004

Integrated approaches

Given their complexity, it is often difficult to break land degradation problems into narrow categories such as agriculture, forestry or grazing. UNDP-GEF recognizes that a true landscape approach may have to address all of these themes, incorporating issues of conservation, legal reforms and sustainable livelihoods within the scope of a single project (see box on Venezuela).

One way to address the complexity of these projects is to phase in different components. For example, funding for the \$16.7 million *Sustainable Land Management to Combat Desertification* project in **Pakistan** is spread over two separate stages, with the first phase of 2 to 3 years focusing primarily on capacity development at various levels, and the second phase promoting innovative and integrated land management practices on the ground.

In focus: Addressing root causes in Venezuela

In northwest **Venezuela**, where a combination of rural poverty and poor land management has allowed desertification to take hold, a project incorporating the landscape approach is under way.

The *Combating Land Degradation in the Arid and Semi-Arid Zones of Falcón and Lara States* project targets poverty and extreme poverty in watershed areas. By addressing the root causes of land degradation, this effort will support economic development and environmental protection.

The UNDP-GEF component of the project will join forces with an ongoing and successful effort sponsored by the International Fund for Agricultural Development (IFAD) – PROSALAF II – that aims to reduce poverty and extreme poverty in rural communities.

Part of that project will involve working with a new \$800 million irrigation project on 23,000 hectares of fragile land. UNDP-GEF will help ensure that activities undertaken on the land promote sustainable land management. The aims are reduced soil erosion and degradation, protection of water resources and improved health among local inhabitants as a result of more reliable access to clean, fresh water.

Country: Venezuela

Implementing agency: UNDP

Executing agency: IFAD

GEF financing: \$4 million

Co-financing: \$14.5 million

Total financing: \$18.5 million

Meeting international obligations: The National Capacity Self-Assessment programme

UNDP participates in and provides support to the National Capacity Self-Assessment programme, funded by the GEF. The programme assists developing countries and economies in transition in assessing their capacity to meet multilateral environmental agreements, including the United Nations Convention to Combat Land Degradation, the United Nations Framework Convention for Climate Change and the Convention on Biological Diversity.

The National Capacity Self-Assessment programme is unique in that it promotes synergy among the three conventions. Through the self-assessment, countries identify capacity gaps and then come up with their own solutions to rectify them. To date, approximately 75 per cent of the resulting activities are implemented by UNDP-GEF.



UNDP's Drylands Development Centre can be found on the Internet at:
www.undp.org/drylands

Piloting Country Partnerships

An especially innovative aspect of the GEF's work is its support to countries in preparing long-term work plans – often spanning up to 10 years – to address sustainable land management. GEF funding can then be spread out over that period among several subprojects. Each of these projects is supported by different GEF agencies, based on their comparative advantage in the country and area of expertise, with significant funding provided by outside sources. These 'pilot country partnerships' are being tested in a few countries, with UNDP taking the lead in two.

In **Cuba**, for example, a ten-year UNDP-GEF effort to help the country carry out its National Action Plan to Combat Desertification is just getting under way. Over the next decade, this project, called *Integrated Land and Soil Conservation*, will help strengthen the country's ability to address land degradation and carry out a site-specific programme that can serve as a model for efforts in other parts of Cuba and the world. In collaboration with FAO, the first part of this undertaking will focus on reducing soil degradation in the Maisí Guantánamo coastal strip in the east. The area suffers from the most intense and extensive land degradation in Cuba and, as a result, has the highest vulnerability in terms of food production. Another area of focus will be Villa Clara, where the low quality of irrigation water has led to salinization of local soils, reducing its agricultural potential.

In **Namibia**, reversing land degradation means bringing together government ministries from many sectors – including agriculture, environment, wildlife and forestry, and fisheries – with community leaders and NGOs. As a first step, the *Namibia Country Partnership Programme* is helping collect basic environmental data that the ministries and NGOs can use to help communities manage their lands more sustainably – a critical concern in a country that constantly faces water shortages. As in several other UNDP-GEF project countries, many of the participants in this effort are collaborating for the first time.

Some of the challenges the participants in Namibia are working to overcome include a lack of legal rights over communal grazing land, unmanaged use of the Orange River's resources, little scientific understanding of the country's groundwater supplies, and often conflicting approaches to rural development. Fortunately, the country has a strong history of skilled government and an NGO support staff willing to make the long-term commitment that this type of project requires. Senegalese agencies and international donors, including the World Bank, European Union and UNEP, along with the Government of Germany, are partnering with the Namibian Government and UNDP to develop the 10-year programmatic vision.

Looking Forward

UNDP has been addressing land degradation issues since the early 1970s. Its Drylands Development Centre in Nairobi has been a strong supporter of the United Nations Convention to Combat Desertification since its inception and is currently undertaking programmes in nearly two-dozen countries.

As UNDP-GEF's land degradation portfolio matures, it will use the lessons from this experience to support the spread of more innovative, community-driven technologies and solutions to reducing land degradation and promoting sustainable land management. And by linking solutions to land degradation with UNDP's core focus on poverty alleviation, human development and improved governance, we will be one step closer to achieving the Millennium Development Goals adopted by the global community at the start of the 21st century.

GEF National Dialogue Initiative

The GEF National Dialogue Initiative, launched in 2004, is a joint undertaking of the GEF Secretariat, UNDP, UNEP and the World Bank. It is implemented by UNDP and carried out in close collaboration with UN Member States. Through a targeted, multi-stakeholder dialogue, the initiative aims to strengthen GEF assistance to participating countries by:

- Promoting in-depth understanding of the GEF's strategic directions, policies and procedures;
- Strengthening country coordination and ownership of GEF operations and information-sharing about GEF-funded projects;
- Mainstreaming GEF activities into national planning frameworks and encouraging better coordination at the national level of the GEF focus areas and international agreements, in response to country priorities.

National dialogues sponsored under the programme bring together representatives from governmental and non-governmental institutions, the scientific and academic communities, donor organizations, the private sector, the media, and the GEF Secretariat and its associated agencies. The initiative builds upon lessons from the GEF Country Dialogue Workshops Programme, during which 76 countries and over 5,000 stakeholders participated in 50 national and subregional consultations. For more information, please visit <http://www.undp.org/gef/dialogue/index.htm>.

GEF Small Grants Programme

Launched in 1992, the GEF Small Grants Programme supports activities of non-governmental and community-based organizations in 73 developing countries working in areas of GEF concern. The objective of the programme is to foster environment stewardship while helping people generate sustainable livelihoods. Grants provided by the programme average \$20,000 per project (though they can reach a maximum limit of \$50,000) and are channelled directly through community-based or non-governmental organizations. Decisions concerning

the awarding of grants are decentralized, based on the directives of a voluntary National Steering Committee in each participating country. To date, more than 5,000 grants have been awarded worldwide, with many benefiting more than one community. Over 600 partner organizations now provide co-financing and other support to Small Grants Programme activities, including the United Nations Foundation, the European Commission, the governments of Denmark, the Netherlands, Switzerland and the United Kingdom. The programme is implemented by UNDP on behalf of the World Bank and UNEP, and executed by the United Nations Office for Project Services.

UNDP's Energy and Environment Group

The Energy and Environment Group is part of UNDP's Bureau of Development Policy. It focuses on the central aspects of sustainable development, especially the links between poverty and the environment. The Group offers six services lines, in areas relating to:

- Frameworks and strategies for sustainable development;
- Effective water governance;
- Access to sustainable energy services;
- Sustainable land management;
- Conservation and sustainable use of biodiversity;
- National and sectoral policy and planning to control emissions of ozone depleting substances and persistent organic pollutants.

The Energy and Environment Group also includes UNDP-GEF, the Montreal Protocol Unit and the Nairobi-based Drylands Development Centre. Energy and environment policy advisers are based at UNDP Headquarters in New York and eight regional locations to ensure the highest quality policy advice and services to client countries. In addition, every UNDP country office has at least one environmental focal point and a network of local practitioners that provide a forum for sharing knowledge.

UNDP-GEF land degradation staff contact information

Regional Staff

Latin America & Caribbean

Helen Negret
helen.negret@undp.org

Lita Paparoni
lita.paparoni@undp.org

Leif Pedersen
leif.pedersen@undp.org

Arab States

Tim Clair
tim.clairs@undp.org

Eastern Europe

Keti Chachibaia
keti.chachibaia@undp.org

West & Central Africa

Saliou Gaye Ndoye
saliou.gaye.ndoye@undp.org

Southern & Eastern Africa

Alan Rodgers
alan.rodgers@undp.org

Asia & Pacific

Nandita Mongia
nandita.mongia@undp.org

Headquarters

GEF Small Grants Programme

Uygar Ozesmi
uygar.ozesmi@undp.org

Senior Technical Adviser

Maryam Niamir-Fuller
maryam.niamir-fuller@undp.org

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N. Sekhran, M. Niamir-Fuller: 1; A. Bovarnick & IFAD/H. Wagner: 2; M. Niamir-Fuller: 3; IFAD/J. Hartley & SGP Senegal: 4; Adama Ly: 5; UNDP Morocco: 6; M. Niamir-Fuller: 7; Indigenous Vegetation Project, Botswana: 8; IFAD/J. Hartley: 9; M. Niamir-Fuller: 10; IFAD/L. Dematteis: 11; SGP Senegal: 12; M. Niamir-Fuller: 13; UNDP Argentina: 14; IFAD/Alberto Conti: 15; IFAD/Horst Wagner & A. Bovarnick: 16



Global Environment Facility
Energy and Environment Group
Bureau for Development Policy
United Nations Development Programme

Frank Pinto
Executive Co-ordinator
frank.pinto@undp.org

Yannick Glemarec
Deputy Executive Co-ordinator
yannick.glemarec@undp.org

304 East 45th Street
New York, New York 10017
U.S.A.
Tel: +212 906 5044
Fax: +212 906 6998
www.undp.org/gef