



GLOBAL ENVIRONMENT FACILITY
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INVESTING IN **Land** **Stewardship**

GEF'S EFFORTS TO COMBAT LAND DEGRADATION
AND DESERTIFICATION GLOBALLY

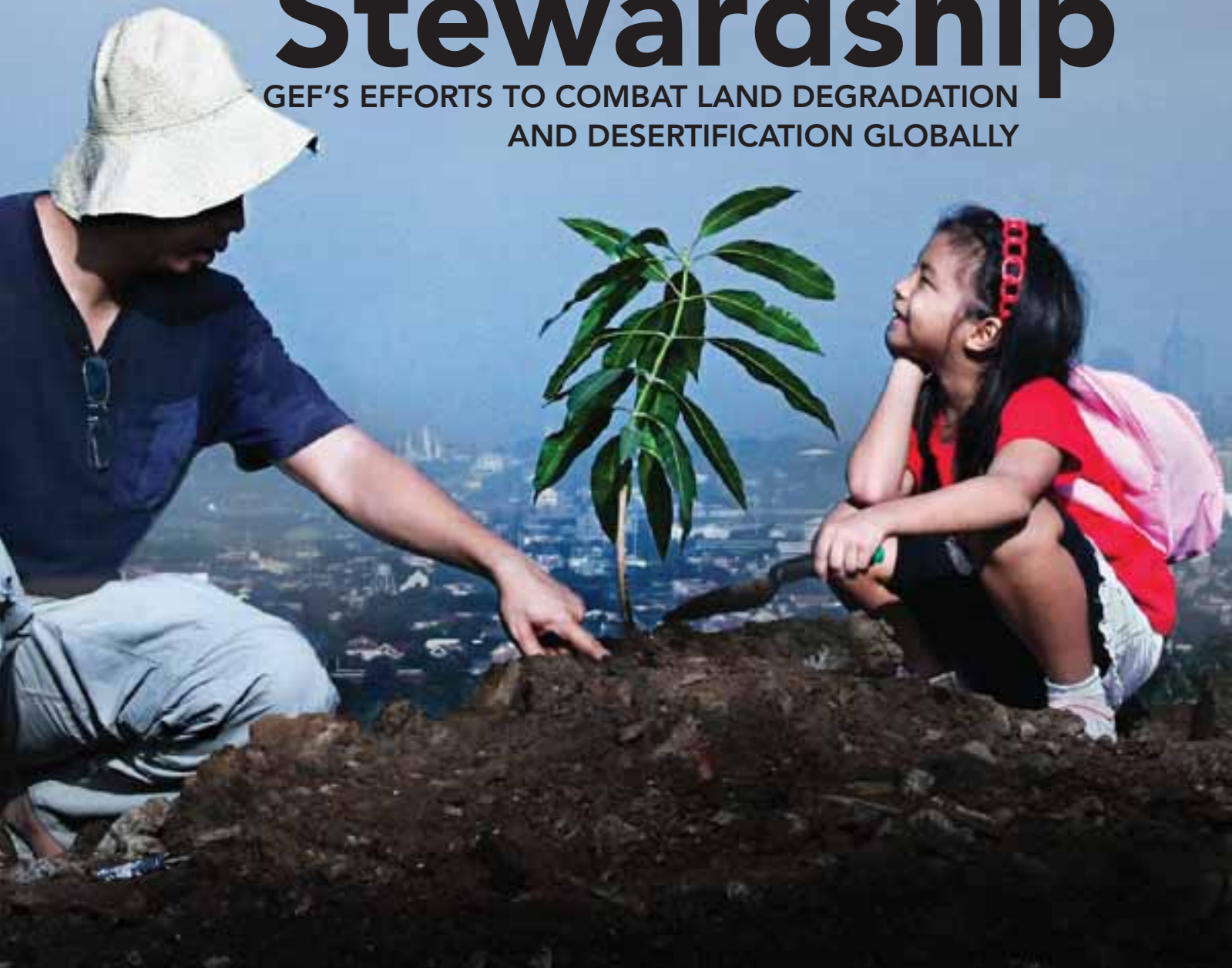






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Foreword



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With the human population projected to reach 7 billion, our planet faces an unprecedented challenge in meeting food and fiber production needs in the coming decade. The recent GEF-funded International Assessment of Agricultural Knowledge, Science and Technology for Development alerted us to the increasing rates of land degradation in many regions that may limit the ability of agro-ecosystems to achieve these needs. A likely consequence of this scenario is increased clearance and fragmentation of natural habitats, leading to further degradation of ecosystems, loss of biodiversity, and increased risk of greenhouse gas emissions through deforestation and fires. It is inevitable that countries will have to step up efforts to address such land management challenges in the context of agricultural production if they are to meet the needs of growing populations.

Land degradation affects more than 33 percent of the planet's surface area, leading to deterioration of ecosystem services and negative consequences for 2.6 billion people in more than 100 countries. An estimated loss of \$40 billion annually worldwide is directly or indirectly attributed to land degradation. The threat of global climate change has created an even greater urgency in making sustainable land management (SLM) a priority in vulnerable agro-ecosystems, where effects are likely to have severe consequences on human livelihoods. We must therefore combat land degradation through innovations that support productivity in agro-ecosystems while generating global environmental benefits. This is especially critical in the world's dryland regions, which are a major priority for the UN Convention to Combat Desertification.

The GEF has a comparative advantage as a global environmental financing mechanism to help countries combat land degradation. Since its inception, the GEF

has demonstrated a strong commitment to addressing land degradation as a major environmental challenge. From an initial focus on investments in cross-cutting activities linked to the Biodiversity, International Waters, and Climate Change Focal Areas, a new Focal Area on Land Degradation (LD FA) was approved by the GEF Council during the third replenishment phase, specifically targeting desertification and deforestation. Our modest but strategic investment, totaling just under \$800 million over four replenishment phases, helped to define priorities and opportunities for generating global environmental benefits through value addition and potential for positive development impact. As a result, demand for GEF engagement and support has increased steadily, imposing an equally high demand on limited resources by countries.

Since 2003, when the operational program was first approved, GEF investments in sustainable land management have increasingly focused on promoting and supporting effective policies, legal and regulatory frameworks, capable institutions, knowledge sharing, and monitoring mechanisms at the national level. During GEF-3, we launched the *Country Pilot Partnerships* as models for streamlining and implementing the SLM agenda in a comprehensive and integrated way to maximize long-term impacts. The partnerships have now evolved into platforms for countries to institutionalize and invest directly in policy options and innovations to combat land degradation, especially in accordance with their national action plans and sustainable development priorities. Five country programs (Burkina Faso, Cuba, Ethiopia, Namibia, and Vietnam) and one multicountry program in Central Asia (covering Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan) were funded with a total GEF contribution of \$50 million, leveraging more than \$500 million in cofinancing.

During GEF-4, the country partnership concept was further enhanced through *programmatic approaches*, which created more options for combating land degradation in a comprehensive and integrated way, with global environmental benefits at higher economies of scale. Three such

programs have been established: the Terrafrica Strategic Investment Program for Sustainable Land Management in Sub-Saharan Africa (SIP/Terrafrica), the Sustainable Land and Ecosystem Management Program in India (SLEM), and the Program on Integrated Nature Resources Management in the Middle East and North Africa Region (MENARID). In addition, the GEF also invested in a Strategic Program for Sustainable Forest Management in the Congo Basin. These programs together account for more than 75 percent of the total \$300 million allocated to the LD FA, and have to date leveraged more than \$2 billion in cofinancing. Overall, these initiatives have benefited more than 50 countries worldwide, leading to strengthened national-level capacity for generating global environmental benefits through SLM in production systems.

As we look ahead to a robust fifth replenishment phase, the GEF is poised to capitalize on these achievements to promote system-wide changes necessary to control the increasing severity and extent of land degradation. Accordingly, the portfolio of projects and programs to be implemented under the land degradation focal area are expected to improve the provisioning of agro-ecosystem and forest ecosystem services; reduce greenhouse gas emissions from agriculture, deforestation, forest degradation, and increased carbon sinks; and reduce vulnerability to climate change and other human-induced impacts. The results will serve to underpin the livelihoods of millions of people dependent on the use and management of natural resources. The GEF will seek to leverage its investment through projects in sustainable agriculture, rangeland, and forest management, which are also developed in the context of poverty reduction, food security, biodiversity conservation, climate change, and water resources management.

This booklet outlines the GEF's strategic approach to combating land degradation, and embodies many of the fundamental principles that guide our investment in SLM. We hope that all stakeholders—from grassroots organizations to development agencies—will find it useful as a means of engaging with the GEF.



Introduction

UNCCD Executive Secretary

In my address to the GEF Council in June 2009, I focused on two issues: the multiple benefits of sustainable land and water management (SLM) and the centrality of the Ten-Year Strategy of the Convention in optimizing SLM investments. I underscored the need to invest more resources than in the past to combating desertification and land degradation and urged all the stakeholders of the fifth GEF replenishment (GEF-5) to give the land agenda the attention it deserves. My message remains the same, and this booklet provides some stepping stones towards re-energizing the global community in this direction, especially with regard to the GEF's role as financing mechanism for combating desertification and land degradation.

SLM is like a precious stone that is still buried in its ore. Unfolding that buried potential is crucial to attain global sustainability. The return we would gain from investing in SLM is resolving the myriad problems that the international community is grappling with today: not least, climate change mitigation and adaptation, biodiversity loss, food insecurity, poverty alleviation, avoided deforestation, water and energy scarcity, and forced migration. These challenges are best addressed in the context of development priorities from the local to national and global levels, and through collaborative efforts across all sectors of society. As outlined in this booklet, the GEF is committed to the pursuit of these principles in its approach to combating land degradation, which necessitates increasing the allocation of resources to the Land Degradation Focal Area.

Last year, the United Nations General Assembly called attention to the need for Parties to the Convention to undertake SLM initiatives, and for donors to finance the GEF-5 adequately. In July this year, leaders of the eight most industrialized countries, the G-8, at their L'Aquila Summit in Italy, highlighted the links between these global challenges and desertification and land degradation. They called for more synergistic approaches and made at least two commitments: to integrate SLM in their relevant cooperation programs, and to assist developing countries in doing the same in their own national development plans and policies and national mitigation and adaptation plans.

Thus, there is evidence of some movement at critical policy levels toward giving due attention to SLM, and thus to land. That momentum needs to pick up and to be

sustained by reiterating constantly and consistently that SLM is a key asset in resolving many global environmental and development challenges. Collaboration in its implementation is what is needed, and the GEF is uniquely positioned to facilitate collective action by a wide range of stakeholders, including its implementing and executing agencies. The Land Degradation Focal Area is a framework for streamlining investment in SLM globally. This booklet outlines opportunities for leveraging GEF financing.

As the sole multilateral binding treaty with a mandate to address desertification and land degradation, the UNCCD is working closely with the GEF to ensure due attention is given to the Land Degradation Focal Area during GEF-5 and beyond. The road map that can facilitate the translation of SLM from an ore, the vision, into a precious stone, a tangible asset for people everywhere, is the Ten-Year Strategy of the Convention. The Parties to the Convention adopted the Strategy during the eighth session of the Conference of the Parties in Spain in 2007 so as to reinvigorate the implementation of the Convention by giving sharper focus to the impacts they seek.

The GEF can reinforce these aspirations by three straightforward actions. First, to allocate more resources to combat desertification and land degradation and mitigate the effects of drought. Second, to create positive incentives for countries to deliver on the Strategy's objectives, such as through multifocal-area investment opportunities as outlined in this booklet. Last, the GEF can play an influential role in promoting synergies, as SLM offers such a win-win ground for people and the environment. In so doing, we will improve the living conditions of affected populations, improve the conditions of affected ecosystems and generate global benefits. This is the *raison d'être* of GEF financing. This is where the Ten-Year Strategy meets the GEF core mandate.

Can we unfold the potentials of SLM? It is possible. Let us give due and concerted attention to land, and increase and realign its financing.

This is the call of our time!

Bonn, 27 August 2009

Luc Gnacadja,
UNCCD Executive Secretary



Introduction

Land is the foundation for all life-sustaining processes on Earth. Land supports the vast proportion of Earth's biodiversity and, through its physical, chemical, and biological attributes, underpins a wide range of ecosystem goods and services that humanity depends on for survival. This includes *provisioning services* such as food and water; *regulating services* such as regulation of floods and drought; *supporting services* such as soil formation and nutrient cycling; and *cultural services* such as recreational, spiritual, and other nonmaterial benefits. Land use in agriculture and forestry plays an important role in global prosperity, benefiting billions of people including a large number who depend entirely on farming and forest products for their livelihood. An estimated 40 percent of the global land surface is made up of agricultural land,² and agricultural lands account for 95 percent of all animal and plant protein and 99 percent of calories consumed by people. Because of its vital importance to humanity, sustained and productive use of land is a global imperative.

Yet demand for production of food, livestock feed, wood, and fiber to support a rapidly growing population is leading to increased pressure on land resources and to unsustainable land-use practices. As a result, most natural ecosystems and agro-ecosystems around the world are facing unprecedented risks of land degradation and loss of biodiversity. The pace, magnitude, and spatial manifestation of land degradation are further exacerbated by effects of climate change, especially in drylands, which are inhabited by more than 2 billion people who depend directly on the land for their livelihoods. At the same time, loss of vegetative cover and soil degradation in agro-ecosystems are major contributors to increased greenhouse gas emissions from agriculture. The Millennium Ecosystem Assessment noted that degradation of ecosystem services will threaten future improvements in human well-being and possibly reverse gains in some regions if action is not taken to address their impacts.³

The Global Environment Facility (GEF) as a financing mechanism for the global environmental has a specific

mandate to address land degradation. The GEF recognizes that global land stewardship is essential for sustaining the multitude of environmental benefits that humanity obtains from ecosystems. This publication outlines the GEF's approach toward financing sustainable land management as a means of ensuring the stewardship of land globally. It includes highlights of innovative actions and solutions to combating land degradation over the last decade and approach to financing projects.

Land Degradation: A Global Challenge

Globally, land degradation affects 33 percent of the Earth's land surface, with consequences for more than 2.6 billion people in more than 100 countries.⁴ The GEF defines land degradation as "*any form of deterioration of the natural potential of land that affects ecosystem integrity either in terms of reducing its sustainable ecological productivity or in terms of its native biological richness and maintenance of resilience.*" The United Nations Convention to Combat Desertification (UNCCD) specifically considers land degradation as a reduction or loss, in arid, semi-arid and dry sub-humid areas, of the biological or economic productivity and complexity of rainfed cropland, irrigated cropland, or range, pasture, forest and woodlands resulting from land uses or from a process or combination of processes, including processes arising from human activities and habitation patterns.⁵

Human-induced land degradation affects a wide range of ecosystems, but estimates of the land area affected range from 196 million km² to 20 million km² globally.⁶ Despite the vast range in estimates, land degradation is now well recognized as a global phenomenon affecting ecosystem services and productivity of agro-ecosystems. Land degradation is a major threat to biodiversity, ecosystem stability, and function. A wide range of plant and animal species are threatened by habitat loss resulting

1 Millennium Ecosystem Assessment. 2005. Ecosystems and Human Well-Being Scenarios; Findings of the Scenarios Working Group. Millennium Ecosystem Assessment Series. Island Press, Washington, DC.

2 McIntyre, B. et al., eds. 2009. Agriculture at a Crossroads: International Assessment of Agricultural Science and Technology for Development (IAASTD), Global Report. Island Press, Washington, DC.

3 Millennium Ecosystem Assessment. 2005. Ecosystems and Human Well-Being Scenarios; Findings of the Scenarios Working Group. Millennium Ecosystem Assessment Series. Island Press, Washington, DC.

4 Adams, C.R., and H. Eswaran. 2000. "Global land resources in the context of food and environmental security." In S.P. Gawande et al., eds. "Advances in Land Resources Management for the 20th Century," pp. 35-50. Soil Conservation Society of India, New Delhi.

5 Full text and terminology available from: <http://www.unccd.int/convention/text/convention.php>

6 Stringer, L. 2008. Can the UN Convention to Combat Desertification guide sustainable use of the world's soils? *Frontiers in Ecology and the Environment*, Vol. 6 (3): 138-144

from poor land-use practices that lead to degradation. Loss of biomass through vegetation clearance and increased soil erosion produces greenhouse gases that contribute to global warming and climate change. Because of the interconnectivity of ecosystems across scales, land degradation triggers destructive processes that can have cascading effects across the entire biosphere. The impacts of land degradation therefore extend far beyond local or regional scales.

One of the main symptoms or indicators of land degradation is extensive soil degradation caused by erosion, salinization, compaction, and nutrient depletion. Soil degradation is the loss of actual or potential productivity where agricultural and forest management practices are unsustainable. This leads to reduced capacity of the soil to produce goods and services, including important functions such as sustaining biomass production and biodiversity, and regulating water and nutrient cycling.⁷ Land that becomes progressively degraded in this manner cannot sustain agricultural production, and creates socioeconomic problems in agro-ecosystems dominated by poor smallholder farmers and pastoralists. This effect can also be exacerbated by the increased vulnerability of people and agro-ecosystems to climate change and variability.

Impacts of land degradation are manifested in the overall diminished quality and quantity of ecosystem services that underpin productivity of agro-ecosystems such as hydrological flows, climate and flood management, and soil formation and protection. At the same time, ecosystem services related to air and water quality, disease and pest management, and risk reduction from natural hazards, are affected by land degradation in agro-ecosystems. Land degradation is also a serious threat to food security, income and livelihoods of rural populations, especially in developing countries. The loss of goods and services derived from ecosystems is a significant barrier to achievement of the Millennium Development Goals for reducing poverty, hunger, and diseases. The economic cost of land degradation is difficult to determine, but is estimated to range between 1 and 7 percent of agricultural domestic product in selected developing countries.⁸ Land degradation, primarily through desertification and deforestation, is therefore a global environmental issue and sustainable development challenge.

The GEF as a Financing Mechanism to Combat Land Degradation

The GEF's role as a financing mechanism and its institutional commitment to combating land degradation globally, specifically desertification and deforestation, is well established through the Land Degradation Focal Area. In addition to demonstrating potential for leveraging investments, the GEF has contributed to development and implementation of innovative land management practices at local, national and regional level. The GEF contribution complements, rather than substitutes, other financing options available to generate global environmental benefits in the control and prevention of land degradation. The GEF approach also emphasizes sustainable land management (SLM) as a cost-effective way to combat land degradation in the context of improving human livelihoods. The value-added of GEF financing is on removing barriers to SLM at multiple scales, and facilitating collaborative engagement among multiple stakeholders and across sectors.

In addition to its ten implementing agencies, the GEF also partners with the scientific community, nongovernmental organizations, private research institutions, bilateral and multinational agencies, and foundations to tackle this complex problem. GEF-funded projects and programs foster collaboration within and between countries, which helps government agencies work together to harmonize their policies and programs to provide an enabling environment for SLM. GEF-funded projects in the Land Degradation Focal Area are therefore specifically designed to align closely with priorities of governments, development partners, and in accordance with objectives of the UNCCD and its 10-Year Strategy 2008-2018.

Partnerships are crucial for ensuring sustainability because the time horizon for achieving impacts is much longer than for conventional projects. Moreover, SLM projects often require more capacity and expertise than are present in any single organization or institution. SLM projects also require substantial financial infusion of resources, including a significant allocation made up front in a predictable manner. This type of financial commitment is usually beyond the capacity of individual countries or development partners. The GEF is therefore a strategic partner for countries to leverage baseline investments and contribute global environmental benefits.

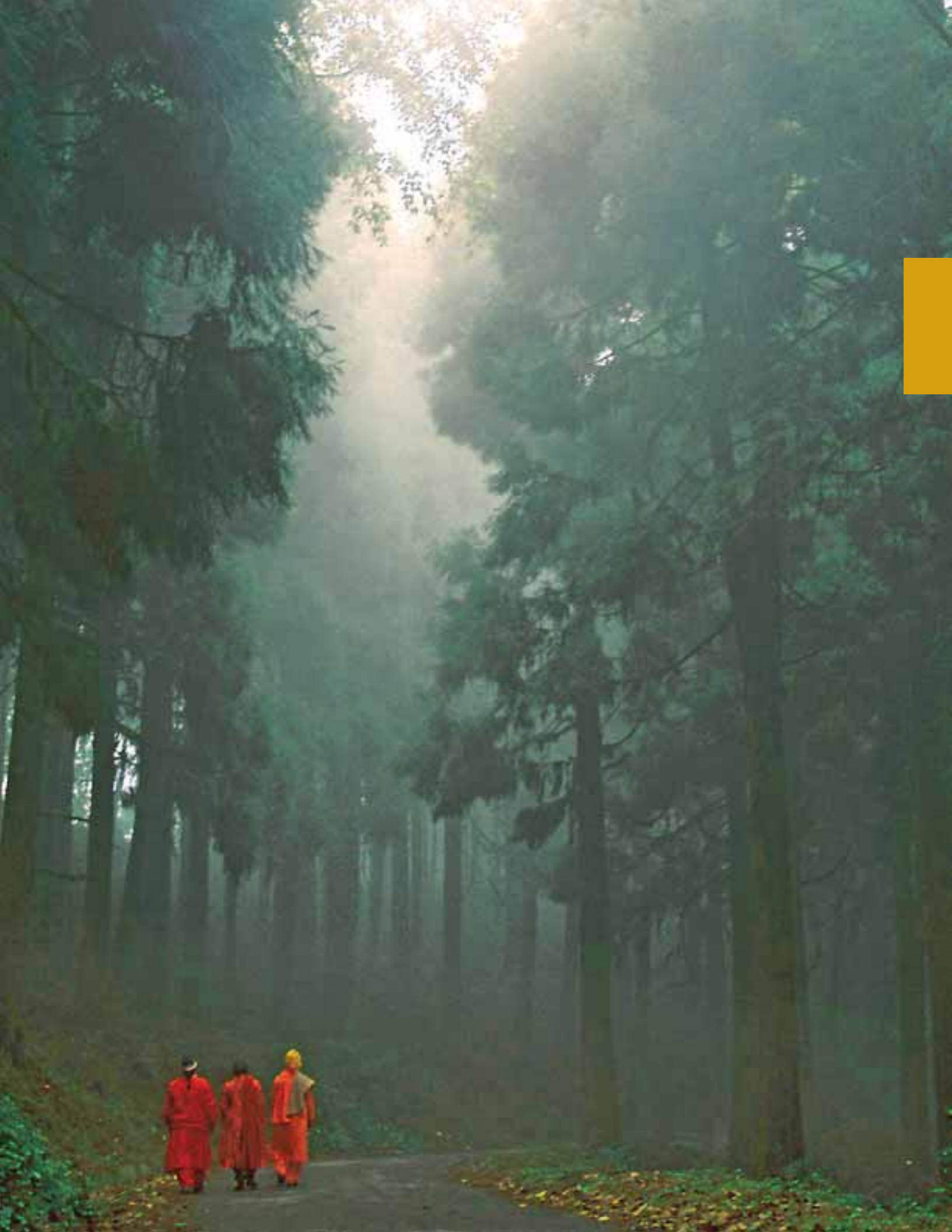
7 Lal, R. 1997. "Soil quality and sustainability". In Lal, R., W.H. Blum, C. Valentin, and B.A. Stewart, eds. "Methods for Assessment of Soil Degradation," p 17-30. CRC Press, Boca Raton, Florida.

8 Scherr, S. 2001. "The Future Food Security and Economic Consequences of Soil Degradation in the Developing World." In Bridges, E. et al., eds. "Response to Land Degradation," pp. 155-70. Science Publishers Inc., Enfield, New Hampshire.

9 GEF agencies include the African Development Bank (AFDB), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the Food and Agriculture Organization (FAO), the Inter-American Development Bank (IADB), the International Fund for Agricultural Development (IFAD), the United Nations Development Program (UNDP), the United Nations Environment Program (UNEP), the United Nations Industrial Development Organization (UNIDO), and The World Bank (IBRD).

HIGHLIGHTS OF **GEF ACHIEVEMENTS** IN COMBATING LAND DEGRADATION

- Since its inception, **the GEF has invested US\$791.6 million** in projects and programs **supporting sustainable land management to combat desertification and deforestation globally**. In addition, **US\$3.1 billion has been leveraged in cofinancing to simultaneously improve the livelihoods of millions of rural people** who rely on agriculture, forests and rangelands.
- Combating land degradation is an important component of GEF investments in other Focal Areas, and **nearly US\$300 million of GEF financing for projects in biodiversity, international waters, and climate change** has been allocated specifically to activities addressing land degradation as a global threat.
- The **GEF Country Partnership Programs** are helping countries in **Sub-Saharan Africa (Burkina Faso and Namibia), Asia (China and India), the Caribbean (Cuba), and Central Asia (Kyrzyg Republic, Kazakhstan, Tajikistan, Tukmenistan, and Uzbekistan)** to **strengthen institutional capacity and mainstream SLM** as a national development priority.
- During GEF-4 (2006 -2010), the **GEF allocated US\$150 million to the TerrAfrica Strategic Investment Program for Sustainable Land Management in Sub-Saharan Africa (SIP/ TerrAfrica)**, which has **leveraged nearly US\$ 1 billion in cofinancing from governments and partners**. This represents the largest investment in combating land degradation on the African continent, and will enable the following:
 - Local and national-level actions for SLM in 25 countries
 - Transboundary activities in four major river and lake basins (Eastern Nile, Kagera, Nossop-Molopo, and Lake Victoria)
 - Capacity building on SLM innovations for civil society organizations
 - Institutional strengthening for implementation of the SLM component in the Comprehensive African Agricultural Development Program
 - Knowledge management for monitoring and assessment of land degradation trends and impacts of SLM interventions.
- The GEF is financing **global efforts to generate knowledge innovations and tools for monitoring and assessment of SLM interventions**, including methods for measurement of **global environmental benefits** such as carbon sequestration.



Combating Land Degradation: The GEF Mandate

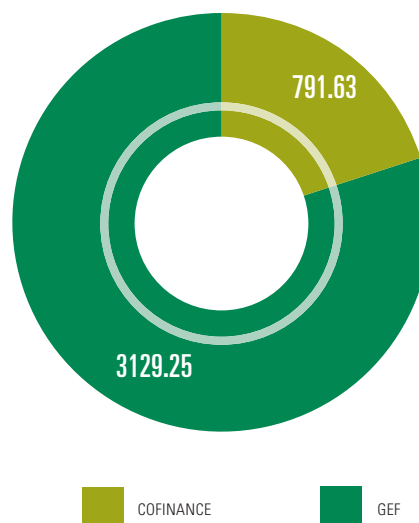
Overview

Land degradation is a major global challenge of ecological, social, economic and cultural importance. This was recognized by the GEF early in its history as an environmental financing mechanism. The GEF financing for combating land degradation was, however, initially based on cross-cutting activities in projects developed under three designated focal areas: biodiversity, climate change, and international waters. The relatively modest investments in integrated ecosystem and natural resource management activities helped to lay the foundation for a new GEF mandate to combat land degradation as a global challenge. During the third replenishment phase (2002-2006), a focal area dedicated to combating land degradation was established, allowing direct allocation of GEF resources to this purpose. To date, the GEF has invested US\$ 791.63 million in combating land degradation through a combination of multi-focal area investments and dedicated focal area allocations in GEF-3 and GEF-4, leveraging US\$3.13 billion in co-financing (Figure 1).

The GEF mandate focuses on sustainable land management as it relates primarily to **desertification and deforestation**. In this context, unsustainable agricultural practices, soil erosion, overgrazing, and deforestation are considered the main drivers of land degradation, all contributing to deterioration of ecosystem services. The GEF approaches land degradation in this way in order to address underlying causes while developing sustainable solutions. Desertification and deforestation are both caused, in part, by unsustainable agricultural practices, but their impacts also result in lower agricultural productivity.

Major drivers of unsustainable land-use practices include institutional, economic, technological, policy, and

FIGURE 1 FINANCING GLOBAL LAND STEWARDSHIP
(US\$ MILLIONS)



demographic factors, often operating in tandem. Additionally, global climate change is a major biophysical driver of land-use change, which exacerbates the effects of land degradation, particularly in drylands. Combating land degradation therefore has an important role to play in climate change mitigation and adaptation. The GEF approach to combating land degradation addresses both causes and common drivers of desertification and deforestation.



Desertification

Land degradation is particularly prevalent in arid, semi-arid, and subhumid zones, referred to collectively as drylands. These areas cover 40 percent of the Earth's land surface and include unique ecosystems that support important habitats for many plant and animal species. Because of the large surface area, drylands have global significance for carbon storage and sequestration. The Millennium Ecosystem Assessment estimates that the total dryland soil organic carbon reserves constitute 27 percent of the global total.

Drylands provide vital resources — food, fuel, fiber, and water — for some of the world's poorest and most marginalized populations. An estimated 37 percent of the world's total population lives in drylands, including nearly 1 billion of the rural poor.¹⁰ Human populations like these that rely on subsistence farming are particularly sensitive to land-use changes caused by desertification, and therefore stand to gain substantially from the implementation of sustainable land management practices.

The UNCCD defines desertification as a form of land degradation in the arid, semi-arid, and subhumid areas resulting from various factors, including climatic variations and human activities that are both natural and anthropogenic in origin. Overgrazing in rangelands and pastoral systems predisposes fragile soils to massive erosion during episodic drought events. This can be attributed to weakened indigenous pastoral systems that lead to land alienation and conversion, and create high concentrations of populations in the limited productive areas. Although the total dryland area affected by desertification is estimated at only 10-20 percent of the global land surface, the intensity of rapidly growing populations and their livestock is imposing major stress on the ecological resilience of these already vulnerable systems.

Dryland areas are already subject to serious physical constraints due to inadequate water resources, low plant formation productivity, and other biophysical vulnerabilities. The de-vegetation and desiccation of soils that lead to dust storms have important effects on cloud formation and rainfall

¹⁰ Millennium Ecosystem Assessment. 2005. Ecosystems and Human Well-Being Scenarios; Findings of the Scenarios Working Group. Millennium Ecosystem Assessment Series. Island Press, Washington, DC.

patterns at national, regional, and global scales. As a result of desertification, dryland ecosystems can contribute an estimated 0.23 – 0.29 Gigatons of carbon emissions annually¹¹. The total carbon stock in dryland regions of the world is 743 Gigatons¹². Combating desertification through sustainable land management therefore offers a unique opportunity for GEF to generate global environmental benefits while addressing human livelihood needs in drylands.

Deforestation

Land degradation through deforestation and forest degradation, particularly in the world's secondary mixed forests, affects a wide range of ecosystems from drylands to humid forests. Forest ecosystems in drylands are among the most severely impacted by land degradation.¹³ Deforestation affects ecosystem services indirectly through deterioration of ecological functions such as watershed protection, or directly through loss of consumptive use, such as timber production. Deforestation is also a major source of greenhouse gas emissions, especially in the humid tropics.

High rates of deforestation are most commonly linked to unsustainable land-use practices resulting from population growth and poverty. In many developing countries, demands on forest resources for food, fuelwood for cooking, timber for construction of shelter, and increased harvesting of forest plants for medicinal purposes are steadily rising. Government policies, such as agricultural subsidies that encourage the conversion of woodland or cropland to pasture, can also contribute to rising deforestation rates. As deforestation spreads and degraded areas expand, forest-dependent people are increasingly migrating to new areas in search of ecosystem goods and services to sustain their livelihoods. In other cases, they simply move to urban centers in search of alternative livelihoods, which can put increased pressure on city resources.

The interaction of rising global deforestation rates and the resulting loss of ecosystem services highlight the urgent need

11 Lal, R. 2001. "Potential of desertification control to sequester carbon and mitigate the greenhouse effect". *Climate Change*, 51:35-72.
12 Trumper, K. et. al. 2007. UNEP-UNDP-UNCCD technical Note for Discussion at UNCCD/CRIC-7. Istanbul, Turkey.
13 International Tropical Timber Organization (ITTO), Guidelines for the Restoration, Management and Rehabilitation of Degraded and Secondary Tropical Forests (ITTO, Yokohama, Japan, 2002).



for sustainable land management innovations to address livelihood needs for forest-dependent populations. Sustainable land management practices can limit these human migration patterns and reduce the stress on natural resources as humans migrate to new

areas in search of crucial life-supporting services. The GEF emphasizes sustainable land management to combat land degradation in agricultural and forest landscapes as a means to reduce the risk of further deterioration and fragmentation of ecosystems.

THE GEF AND THE UN CONVENTION TO COMBAT DESERTIFICATION

In 2003, the GEF was designated as a financial mechanism of the UNCCD, which ensures that GEF projects addressing desertification will be aligned with objectives of the Convention. In this way, the GEF works as a complementary financial mechanism to the Global Mechanism, collectively supporting implementation of the Convention. Establishment of the Land Degradation Focal Area coupled with formal designation as a financial mechanism for the UNCCD offered a major boost to the GEF's investment in SLM projects.

The GEF as a financial mechanism of the UNCCD directly contributes to implementation of the 10-year (2008-18) Strategic Plan and Framework approved by the Conference of Parties during its Eighth Session.¹⁴ The Strategic Plan aims "to forge a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought in affected areas in order to support poverty reduction and environmental sustainability." The new framework allows the GEF to link its investment in combating desertification to the priority areas of action in the 10-year strategy. Joint action between the UNCCD and the GEF will support efforts to prevent, control, and reverse desertification and land degradation while contributing to the reduction of poverty in the context of sustainable development. The GEF approach to combating land degradation is therefore fully in line with the UNCCD 10-year Strategy.

The dual objectives of the UNCCD are to combat **desertification** and **land degradation**, and mitigate effects of **drought** (DLDD) in affected countries, particularly in Africa. Achieving these objectives and the goals of the 10-year Strategy involves coordinated effort at all scales, including international cooperation and partnerships that occur in tandem with local level actions. The UNCCD notes that achieving its objectives, "will involve long-term integrated strategies that focus simultaneously in affected areas, on improved productivity of land and on the rehabilitation, conservation, and sustainable management of land and water resources, leading to improved living conditions, in particular at the community level."

Since the Land Degradation Focal Area also addresses global threats to forest ecosystems, the GEF is also exploring opportunities for engagement with United Nations Forum on Forests (UNFF). In this context, The GEF and UNFF have increasingly joined forces to emphasize the multiple benefit character of forest ecosystems, and have highlighted the need for an integrated approach to combat deforestation and forest degradation. In addition, the GEF is a member of the Collaborative Partnership on Forests¹⁵ (CPF), which comprises 14 international organizations and secretariats with programs related to forests. The CPF's mission is to promote the management, conservation and sustainable development of all types of forest and strengthen long-term political commitment to this effort.

Addressing land degradation to harness global environment benefits requires an investment framework that adds value and aligns innovations at multiple scales. This will ensure that the Land Degradation Focal Area takes full account of linkages with other GEF focal areas, specifically biodiversity and climate change.¹⁶ To that end, GEF activities in the focal area are also consistent with the work program priorities on sustainable land management in the Convention on Biological Diversity (CBD) and the UN Framework Convention on Climate Change (UNFCCC). The GEF as a financing mechanism is strategically positioned to play this crucial role for all three Rio Conventions.

¹⁴ Document available at <http://www.unccd.int/cop/officialdocs/cop8/pdf/16add1eng.pdf#page=8>.

¹⁵ More information about CPF is available at <http://www.fao.org/forestry/44935/en/>.

¹⁶ GEF-STAP 2006. Land Degradation as a Global Environmental Issue: A synthesis of Three Studies Commissioned by the Global Environmental Facility to Strengthen the Knowledge Base to Support the Land Degradation Focal Area. GEF Council Document GEF/C.30/Inf8. Scientific and Technical Advisory Panel of the GEF, Washington, DC.



Sustainable Land Management

The GEF's investment in combating land degradation recognizes and capitalizes on holistic and integrated approaches that maintain ecosystem services and deliver human livelihood benefits. By harnessing synergies and linkages between components within production landscapes, investment in sustainable land management can generate multiple global environmental and livelihood benefits that are consistent with the GEF's mandate. Sustainable land management innovations include measures to increase the productivity of agricultural and forestry lands (for example, soil quality, vegetative cover), maintain the provisioning of ecosystem services (carbon sequestration, water availability, erosion and flood control, drought mitigation), and protect genetic resources (crops, livestock, wildlife).

Numerous solutions to combat land degradation are being applied every day by ordinary people in the form of sustainable land management. Although these activities are already taking place, generating more robust global environmental

and development benefits can only happen through the effective integration at appropriate scales and within relevant policy, economic, institutional, and government frameworks. Sustainable land management is defined as a knowledge-based procedure that helps integrate land, water, biodiversity, and environmental management (including input and output externalities) to meet rising food and fiber demands while sustaining ecosystem services and livelihoods.¹⁷ Sustainable land management therefore embraces an integrated approach to natural resources management, taking into account the various factors influencing decisions about land use at the local, national, and regional levels. The GEF primarily targets sustainable agriculture, rangeland management, and forest management for SLM investments.

SLM is the foundation of sustainable agriculture and land use, and therefore has an important role in poverty alleviation. SLM practices address the often conflicting objectives of intensified economic and social development, while maintaining and enhancing ecological and global life support functions of land resources. SLM also reconciles environmental issues with economic and social development by improving the policy, planning, and management of lands. The GEF emphasizes the

¹⁷ World Bank. 2006. *Sustainable Land Management: Challenges, Opportunities and Tradeoffs*. International Bank for Reconstruction and Development/The World Bank, Washington, DC.

need for appropriate enabling environment and institutional capacity to support SLM, particularly in small island developing states and least developed countries that often lack such opportunities. Enabling environments facilitate SLM by harmonizing relevant planning and policy frameworks, fostering integrated land-use planning, and establishing institutional mechanisms for the management of transboundary resources. GEF-financed projects also overcome institutional, economic, policy, and technical challenges through targeted interventions designed to provide the best means to combat land degradation.

Putting into practice SLM principles is one of the few options for land users, especially smallholder farmers and pastoralists, to maintain or increase productivity of agro-ecosystems without destroying land, causing soil erosion or undermining the ecosystem services. Therefore an essential part of the GEF's work on SLM is supporting on-the-ground investments to address land degradation. These investments help to improve the livelihood of local people and to preserve or restore ecosystem health, and thus the flow of goods and services they provide. Some examples of these activities include land resources management (e.g. rotational systems, pastoral range or forest land management practices, land use planning); sustainable agriculture practices to improve long-term productivity, such as soil and water conservation and land quality management; changes in land tenure systems; minimum tillage to control carbon emissions and measures to reduce institutional barriers to SLM.

GEF-financed projects on SLM overcome two major barriers. First, they emphasize a shift from localized and piece-meal efforts to holistic and integrated approaches with potential for scaling-up. Often, decision-makers at the national and local level select short-term economic gains (e.g. substitution of natural forest ecosystems with forest plantations, farm land, or other more profitable land) over the long-term sustainability of forests. These decisions are often inevitable when a long-term, integrated vision is lacking. Second, GEF projects acknowledge the fact that the world is changing constantly due to institutional (e.g. decentralization), biophysical (climate change), and economic (e.g. markets) factors. Knowledge and technological innovations for addressing land degradation are necessary to enable society to cope with these changes or adapt to their impacts. SLM projects financed by the GEF address these concerns by building institutional capacity and knowledge, while helping to establish and strengthen land management planning and policies.

SLM AS A VEHICLE FOR ENHANCED CLIMATE CHANGE MITIGATION AND ADAPTATION

Land degradation is a major factor in global climate change because it results in greenhouse gas emissions and reduces the carbon sequestration potential of soil in production systems. It has been estimated that erosion displaces about 0.5 gigatons of soil carbon a year, with about one-fifth entering the atmospheric CO₂ pool.¹⁸ At the same time, projected rise in global temperatures will lead to degradation of ecosystems and their ability to provide goods and services such as soil and water protection that are critical for sustaining production landscapes.¹⁹ Furthermore, incidents of flooding and drought can create severe erosion problems in areas affected by land degradation because of diminishing capacity to regulate flows.

“Soil restoration and soil carbon sequestration offer win-win-win opportunities for climate change, biodiversity and desertification”.

— Luc Gnacadja, Executive Secretary of the UNCCD

The complex interaction between land degradation and climate change has major implications for rural populations, especially in drylands where effects of climate variability are already pervasive. Climate change exacerbates the vulnerability of human and ecological systems, and has the greatest negative impact on poor communities with limited options to recover. For example, severe weather events induced by climate change have often resulted in substantial socioeconomic losses such as through flood damage and lower crop yields. This can lead to food insecurity and potential health risks. Combating desertification and deforestation through SLM therefore offers a win-win opportunity to mitigate global climate change while at the same time facilitating human adaptation in vulnerable regions.

SLM contributes to mitigating climate change through sequestration of carbon above-ground and below-ground, as well as reducing emissions from existing stocks. Deforestation accounts for approximately 20% of global climate change, which can be reduced through SLM in agro-ecosystems. Deforestation is the single largest source of land-use change emissions, responsible for over 8GtCO₂/yr in 2000.²⁰ Introducing SLM practices in areas vulnerable to climate change will help build resilience and stabilize ecosystem services. Such practices directed at erosion control can also increase carbon sequestration capacity in soils. In the humid tropics, reducing land degradation in agro-ecosystems can alleviate anthropogenic pressures on natural forests, protect existing carbon stocks, and increase overall resilience of the ecosystem. Increasing resilience to climate change through SLM can provide dual benefits of improved ecosystem health and supply of ecosystem services in production systems.

18 GEF-STAP. 2005. Land Management and Its Benefits – The Challenge, and the Rationale for Sustainable Management of Drylands. Scientific and Technical Advisory Panel to the Global Environment Facility, Washington, DC.

19 Joint Liaison Group of the Rio Conventions. “Forests: Climate Change, Biodiversity, and Land Degradation” (<http://www.unccd.int>).

20 Stern Review on the Economics of Climate Change. 2006. see Annex 7.f Emissions from the land use sector. Cambridge University Press. <http://www.cambridge.org/9780521700801>,





The GEF's Strategy to Combat Land Degradation

From Cross-Cutting Issue to Focal Area

Land degradation was first addressed in the GEF as a cross-cutting issue linked to other Focal Areas, primarily biodiversity, climate change, and international waters. The cross-cutting activities such as integrated land and water management and integrated ecosystem management laid the foundation for a primary Focal Area on land degradation. Although the level of GEF investment was modest, it became clear from the cross-cutting approach that consequences of land degradation were widespread and required more focused attention. In October 2002, the GEF mandate was expanded when the General Assembly approved the designation of land degradation as a Focal Area, to focus primarily on desertification and deforestation.

This designation of land degradation as focal area also opened new opportunities for the GEF to support the UNCCD. The UNCCD recognizes land degradation as the root cause of the desertification process in arid, semi-arid, and sub-humid zones, and provides a global framework for addressing desertification. The Convention is a legally binding instrument resulting from the Rio Conference on Environment and Development (1992) and entered into force in 1996. GEF-financed land degradation activities help recipient countries meet the objectives of the UNCCD through targeted investment in projects for capacity-building, as well as for the implementation of innovative and indigenous land management practices.

To further its commitment to land degradation, and to strengthen its abilities to support the Convention, the GEF

Council in May 2003 approved Operational Program 15 "Sustainable Land Management," under the new land degradation Focal Area (LD FA). Like all other GEF operational programs, OP15 was initially a way to operationalize projects in the Focal Area portfolio. However, the GEF Council adopted new focal strategies in 2006 to replace operational programs, so that OP15 is no longer used. SLM remains at heart of the LD FA, and the GEF has continued to approach land degradation in an integrated manner with other Focal Areas, taking into account a variety of factors that affect land use at local, national, and regional scales.

The purpose of the GEF Land Degradation Focal Area is to cultivate system-wide change to control the increasing severity and extent of land degradation. Managing land resources in a sustainable way can produce global environmental benefits while also contributing to sustainable development objectives. Investing in SLM to control and prevent land degradation in the wider landscape is an essential and cost-effective way to deliver multiple global environmental benefits related to ecosystem health, such as biodiversity conservation, climate change adaptation and mitigation, and the protection of international waters.

The Focal Area promotes the landscape approach as a means of addressing ecological processes and functions that deliver ecosystem service benefits at local and global scales. The landscape approach embraces ecosystem principles²¹ to enhance connectivity in ecosystems and facilitate landscape-level decision making on SLM interventions. It also facilitates the participatory planning, negotiation, and implementation of activities across landscapes that are consistent with environmental and development needs. Because of the synergistic effects of land degradation on ecosystem services such as carbon, water, and biodiversity,

21 Available at <http://www.cbd.int/ecosystem/principles.shtml>.

the Land Degradation Focal Area also advocates integrated approaches to natural resources management (NRM) that generate multiple global environmental benefits.

The GEF's SLM approach takes into account not only the severity of degradation, but also the human livelihoods that stand to benefit from sustained flow of ecosystem services at the local level, which can translate into global environmental benefits. Projects in the Land Degradation Focal Area are targeted at integrating SLM into national development priorities; strengthening human, technical, and institutional capacities; creating needed policy and regulatory reforms; and implementing innovative practices. In this way, SLM projects have the potential to reduce loss of ecosystem services while also building economic and social sustainability. GEF investment in projects designed to combat land degradation through SLM are closely aligned with three of the Millennium Development Goals: eradicate extreme poverty and hunger (MDG 1); ensure environmental sustainability (MDG 7); and develop a global partnership for development (MDG 8).

GEF Project Areas

The GEF investments in the Land Degradation Focal Area focus primarily on three major production practices: *sustainable agriculture (crop-livestock systems)*, *sustainable rangeland/pasture management (agropastoral systems)*, and *sustainable forest and woodland management*. The investments are intended to increase global environmental benefits as an added value in country-driven projects that embody these practices. The GEF contribution strengthens national-level processes for SLM such as capacity building, institutional collaboration, knowledge management, and mainstreaming across sectors. GEF projects also deliver on-the-ground interventions to improve livelihoods and economic well-being of local communities, and to preserve or restore ecosystem stability, functions, and services.

Sustainable Agriculture – GEF investments in sustainable agriculture focus on maintaining or improving the productivity of both rain-fed and irrigated systems. The GEF supports interventions that integrate environmental health, economic profitability, equity (including gender), and social objectives. On-the-ground interventions supported by the GEF



CASE STUDY SUSTAINABLE AGRICULTURE IN BURUNDI AND MONTENEGRO

Burundi is a poor country, with 90 percent of the population dependent on agriculture for their livelihood. Despite the country's high potential, Burundi suffers from low agricultural productivity as a result of land degradation and the associated loss of ecosystem services caused by population growth, low government investment, and civil strife. Furthermore, there is a low capacity for agricultural and environmental research in Burundi, coupled with inadequate research and extension service. The GEF-financed project, Agricultural Rehabilitation and Sustainable Land Management Project (*Total financing: US\$42.8 million; GEF Grant: US\$5.8 million, GEF Implementing Agency: The World Bank*) promotes capacity building and economically and ecologically sustainable investments in agriculture, which will help improve the livelihoods of people throughout Burundi. At the same time, the project helps reduce pressure on fragile marshlands, and safeguard vital ecosystem services such as carbon storage, hydrological cycles, and nutrient cycling in forests in wetlands. The project will support and establish pilot activities and build capacity in SLM at the local level. In addition, it will help the government of Burundi strengthen its human resources and institutional capacity to develop sound policies, programs, and guidelines to rehabilitate degraded lands, curb further degradation, and conserve high (agricultural) production lands. GEF resources will help promote environmentally friendly land management and agro-ecological systems that aid in revitalizing soil conditions, protecting agro-biodiversity and stemming the rapid loss of wetland ecosystems and related biodiversity.

The northern mountainous region of Montenegro is characterized by pristine wild habitats, dramatic landscapes, internationally important watersheds, and a rich diversity of flora and fauna. In the northern part of the country, there are sensitive mountain ecosystems of global importance where poor rural residents are largely dependent on the natural resource base for their livelihoods. The protection and enhancement of these natural resources are dependent on the adoption of sustainable land management practices among agricultural and forest producers. The GEF-funded project, Montenegro Institutional Development and Agriculture Strengthening (MIDAS) (*Total financing: US\$13.5 million; GEF grant: US\$3.6 million; GEF Implementing Agency: The World Bank*) will enable the government to address these problems by mainstreaming sustainable land-use and natural resource management into the Ministry of Agriculture, Forestry, and Water Management policies, programs, and investments. Key expected outcomes of the project include expanded capacity of Rural Development Unit staff to integrate environmental measures into the rural development program and evaluate their impact; increased capacity of extension services to introduce agri-environment measures; and improved awareness and adoption of sustainable practices among agricultural producers, processors, and rural communities.

include crop diversification, crop rotation, conservation agriculture, agroforestry, water harvesting, and small-scale irrigation schemes.

Rangeland Management - The GEF promotes sustainable management of rangelands through the strengthening of viable traditional systems and other measures that improve soil and water conservation. Rangeland management in dryland areas is a priority because an estimated 73 percent of the global area is vulnerable to degradation.²² GEF-funded projects help to improve and sustain the economic productivity as well as environmental sustainability of rangeland and agropastoral systems, with emphasis on projects that enable livestock producers to maintain sustainable livelihoods through effective planning, animal selection, nutrition and reproduction, herd health, and grazing management. The GEF complements these interventions through support for mechanisms that generate global environmental benefits, such as resolving wildlife-livestock-crop conflicts, conservation of indigenous genetic resources (for example, livestock varieties with naturally adaptive capacity to extreme climatic events and environmental conditions), reducing water and wind erosion, protecting and rehabilitating riparian forest or woodland, and protecting and rehabilitating the natural vegetation of groundwater recharge areas.

Sustainable Forest and Woodland Management — Rising demands on forest resources have rendered forest degradation and deforestation as major threats in arid, semi-arid, and subhumid and humid environments. Factors that drive deforestation have far-reaching ecological impacts, including loss of biodiversity and degradation of ecosystem services. Global deforestation and forest degradation account for an estimated 20 percent of greenhouse gas emissions. The GEF recognizes that improved management of forest landscapes and woodlands offers the dual opportunity to address livelihood needs of rural populations and reduce pressure on threatened ecosystems. GEF activities support the introduction and strengthening of sustainable forest management schemes, including participatory decision making, tenure and use rights (especially by indigenous communities), sustainable market chains for forest

²² GEF-STAP. 2005. Land Management and Its Benefits – The Challenge, and the Rationale for Sustainable Management of Drylands. Scientific and Technical Advisory Panel to the Global Environment Facility, Washington, DC.



CASE STUDY RANGELAND MANAGEMENT IN ARGENTINA AND CHINA

Argentina's Patagonia region is a rich mosaic of varied arid and semi-arid areas, interspersed with riparian wetlands. The ecosystems collectively support a rich diversity of species, but land degradation now affects an estimated 85 percent of Patagonia. This is caused mainly by overgrazing in the rural areas, where rearing livestock, principally sheep, has been the main productive activity for more than a century. The GEF-funded project, Sustainable Management of Arid and Semi-arid Ecosystems to Combat Desertification in Patagonia (*Total financing: US\$32.6 million; GEF Grant: US\$6 million; GEF Implementing Agency: UNDP*) is helping to control land degradation in Patagonia through the promotion of sustainable rangeland management practices to restore ecosystems to their full integrity, stability, and functions. The project helps sheep breeders and herders adopt sustainable rangeland management practices, and it complements a sustainable sheep husbandry program. One expected outcome is effective mainstreaming of SLM in regional planning and decision-making processes by removing the barriers to capacity building. In addition, on-the-ground interventions will generate tangible results in halting degradation processes and restoring ecosystem health.

In China, the GEF is supporting the Gansu and Xinjiang Pastoral Development Project (*Total financing: US\$76 million; GEF Grant: US\$10 million; GEF Implementing Agency: The World Bank*) to improve livelihoods of herders and farmers through establishment of improved grassland management, livestock production and marketing systems. The GEF financing to this sheep pasture management project will generate global environmental benefits by supporting interventions that reduce land degradation, conserve biodiversity, and sequester carbon. The linkage between sustainable land management and human priorities in this pastoral landscape provides a strong foundation for the GEF to leverage its investments in the context of sustainable development.

These projects also demonstrate the GEF's commitment to the landscape approach as a means of increasing habitat connectivity at different scales, from individual farms to local ecosystems, and from households to communities affected by land degradation. This approach allows a larger and more comprehensive view of the consequences that poor farming practices can have on both human communities and the environment, especially in fragile agro-ecosystems such as rangelands.



products, payments for ecosystem service schemes, development and implementation of forest management plans, and reforestation.

Evolution of GEF Financing to Combat Land Degradation

Although land degradation was not officially recognized as a Focal Area until 2002, the GEF's investment in projects that relate to land degradation has steadily been growing over time. Before it designated land degradation as a Focal Area, the GEF was not able to fund projects solely for their contribution to reducing land degradation. Since its inception in 1991, the GEF has addressed land degradation as a cross-cutting issue in projects under the Focal Areas of biodiversity, climate change, and international waters. An analysis of the investment conducted for the period 1991-2006 showed a rapid increase in projects with linkage to land degradation. In its first decade between 1991 and 2000, the GEF invested a total of about US\$624.12 million in 80 projects with linkages to land degradation as a cross-cutting issue, with the specific allocation for activities to combat land degradation amounting to US\$50 million.²³ To date, the GEF has invested US\$791 million in projects to combat land degradation, including financing through a dedicated Focal Area in the third and fourth replenishment phases (figure 2). The amount of cofinancing leveraged is US\$3.1 billion, nearly four times the GEF investment.

GEF-3

The third replenishment phase (2002-06) was a major turning point for GEF investments in combating land degradation. In addition to cross-cutting investments up to that time, an allocation of US\$250 million was approved by for the Land Degradation Focal Area. An analysis of the overall GEF-3 investment identified 158 projects with components addressing land degradation, with the total GEF funds amounting to US\$643.90 million. The projects include 126 in the Biodiversity Focal Area, 20 in the Integrated Ecosystem Management multi-Focal Area, 10 in the International Waters

²³ GEF. 2001. Land Degradation Linkage Study, Working Paper 6. GEF Secretariat, Washington DC.



CASE STUDY SUSTAINABLE FOREST MANAGEMENT IN INDONESIA AND KAZAKHSTAN

Although Indonesia constitutes only 1.3 percent of global land surface, it harbors a significant share of the earth's biodiversity, including 11 percent of the world's plant species. The majority of these species are found in the country's forests; Indonesia is home to approximately 190 million hectares of land, with 120 million hectares of this land classified as production, protection, conservation, or conversion forestland. Although it has been noted that forest loss and degradation are occurring mainly in the production forests, protection forests are also affected. The GEF-funded project, Strengthening Community-Based Forest and Watershed Management in Indonesia (*Total financing: US\$50.2 million; GEF Grant: US\$7.7 million; GEF Implementing Agency: UNDP*) is designed to enhance and scale up the government of Indonesia's programs on community-based forest and watershed management. In particular, this project seeks to address the inequitable distribution of benefits derived from forest resources, as well as lack of coordination between stakeholders and sectors of the economy.

Kazakhstan has 11.5 million hectares of forests and wooded rangelands that represent a significant resource for the country. They serve as a key factor in soil and sand retention, watershed protection, and reduction of siltation in waterways and reservoirs. They are also a driving economic force as the source for fodder, food, fuel, medicinal plants, and recreation. Unsustainable conversion of fragile rangelands to agricultural use and other ecologically risky land use for rain-fed and irrigated crop production, livestock production, oil drilling, the space program, and nuclear testing have all destroyed valuable land. As a result, large tracts of land have been converted to barren wastelands. The GEF-funded project, Forest Protection and Reforestation, (*Total financing: US\$64.25 million; GEF grant: US\$5.45 million; GEF Implementing Agency: The World Bank*) has been developed as a response to these challenges. The project objective is to develop environmental and economic services through more sustainable use, increased productivity, and enhanced conservation of forest and associated rangeland resources in Kazakhstan, with a focus on the northeastern pine forest and southern woodlands. The project will create policy, legal, organizational, and information frameworks that enable improved forest and associated rangeland management. In addition, the project will promote rehabilitation and effective management of forests and woodlands.

Focal Area, and 1 each under the Climate Change and Persistent Organic Pollutants Focal Areas. The specific allocation for activities related to land degradation in these 158 projects was estimated at about US\$154.94 million.

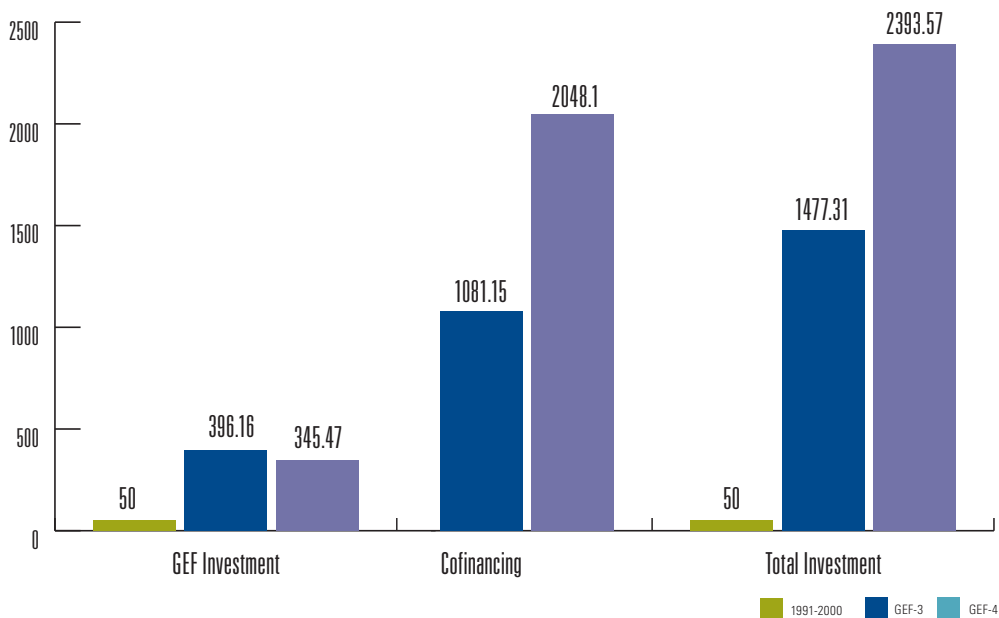
Together with projects funded directly through the dedicated Focal Area, the number of land degradation-related projects reached 180, more than twice the combined total number from the pilot and previous two phases. This trend was indicative of a growing recognition of land degradation as a threat to the global commons addressed in the other GEF Focal Areas. The allocation of funds to the LD FA also marked the emergence of innovative investment strategies for combating land degradation, such as country partnership programs. At the close of GEF-3, the total GEF investment in combating land degradation was US\$396.16 million, leveraging US\$1.08 billion in cofinancing.

GEF-4

The fourth replenishment phase (2006-10) represents another important milestone in the GEF effort to combat land degradation. First, the LD FA strategy was developed to address three major drivers of degradation in terrestrial ecosystems identified by the Millennium Ecosystem Assessment: *land-use change, natural resources consumption, and climate change*. It focuses specifically on these drivers in the context of agriculture, forestry, and mixed land-use systems in production landscapes. Second, it was designed to address two principal barriers to effective action: weak policy and institutional environment at the national level, and inadequate recognition of potential development benefits of targeted SLM interventions at multiple scales. Two strategic objectives were established to guide GEF-4 investments:

1. To develop an enabling environment that will place sustainable land management in the mainstream of

FIGURE 2 GEF FINANCING TO COMBAT LAND DEGRADATION
(US\$ MILLIONS)



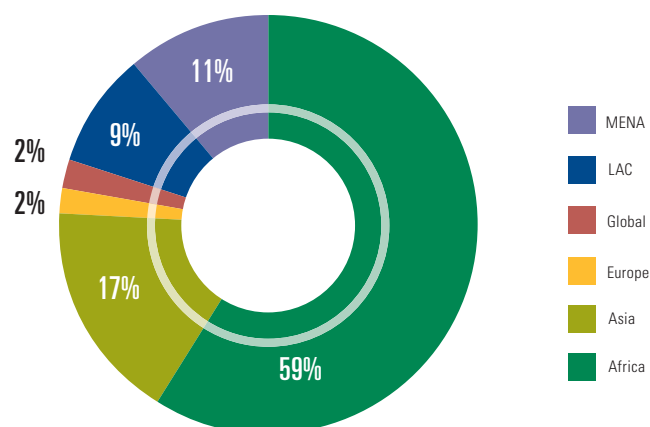
development policy and practices at regional, national, and local levels.

2. To upscale SLM investments that generate mutual benefit for the global environment and local livelihoods.

The innovative investment programs initiated in GEF-3 were expanded from national to regional and multicountry during GEF-4, but with a deliberate effort to harness opportunities for scaling up SLM interventions. Seventy percent of US\$300 million allocated to the Land Degradation Focal Area has been invested through three programmatic approaches on SLM in Sub-Saharan Africa, Middle East and North Africa, and India. Overall, a total of US\$257.7 million had been committed to projects by end of the third year (July 2009). In addition to the

multi-Focal Area activities involving Biodiversity, Climate Change, and International Waters, the total GEF investment in projects related to land degradation is currently around US\$345 million, with US\$2.4 billion leveraged as cofinancing. The overall project portfolio was managed with the intention of creating balance in terms of land-use systems and regional distribution of GEF funds. Fifty-nine percent of the resources were allocated to Sub-Saharan Africa for the Strategic Investment Program on Sustainable Land Management (SIP/TerrAfrica), with Asia, MENA, and LAC accounting for a combined 37 percent (figure 3). Five global projects accounting for only 2 percent of the total resources were funded. These will deliver results that are essential for improving the performance of the Land Degradation Focal Area.

FIGURE 3 PROPORTIONAL ALLOCATION OF GEF-4 LAND DEGRADATION OF FOCAL AREA RESOURCES BY REGION







The GEF in Action

Responding to Country Demands

The creation of a dedicated Focal Area has enabled the GEF to pursue a holistic view of the land degradation portfolio, particularly in the context of responding to country demands. GEF projects are targeted at integrating SLM into national development priorities; mainstreaming across sectors; strengthening human, technical, and institutional capacities; creating needed policy and regulatory reforms; and implementing innovative, sustainable land management practices. This approach was the basis for the GEF Country Partnership Programs (CPPs) as platforms to leverage support for comprehensive SLM initiatives at the national level.

The CPPs were based on three important principles: facilitating effective coordination across institutions at the national level, streamlining investments and resource availability in a predictable manner, and creating flexibility to design and implement SLM interventions suitable to the needs and capacity of individual countries. In addition to country-based programs for Burkina Faso, China, Cuba, and Namibia, multicountry and regional CPPs were also pursued during GEF-3. The GEF is a major financial contributor to the Central Asian Countries Initiative for Land Management (CACILM), with projects slated for implementation in Kyrgyz Republic, Kazakhstan, Uzbekistan, Turkmenistan, and Tajikistan.



CHINA PRC-GEF PARTNERSHIP ON LAND DEGRADATION IN DRYLAND ECOSYSTEMS

GEF Investment-to-date: US\$22.9 million

Cofinancing: US\$378.62million

Total Investment: US\$ 400.91 million

Participating Agencies: IFAD, The World Bank, and ADB

Much of the land area in the People's Republic of China (PRC) lies in arid or semi-arid zones. Dryland areas of the western PRC cover roughly 40 percent of the country's total land area, and are highly vulnerable to drought and desertification. The area of degraded lands is expanding at an annual rate of about 3,500 km² as a result of a combination of unsustainable agricultural practices, deforestation, and mismanagement of water resources. About 27 percent of the country (more than 2.6 million km²) is now affected by land degradation, creating livelihood risks and vulnerability for several hundred million people. The GEF is helping the government to address these problems through the PRC-GEF Partnership on Land Degradation in Dryland Ecosystems, a partnership involving national and international organizations to support integrated ecosystem management (IEM) approaches in combating land degradation, reducing poverty, and restoring dryland ecosystems in the country's western region. The total investment in this project to date is US\$401.91 million, including a GEF grant of US\$22.9 million.

The program is implemented by the central government and is taking place in six provinces (regions): Inner Mongolia, Shaanxi, Qinghai, Gansu, Ningxia, and Xinjiang. This program supports a long-term approach that is necessary to effectively address land degradation and its associated global environmental concerns, such as loss of biodiversity, climate change, and desertification. The goal of the partnership is to strengthen the enabling environment and promote an integrated approach to reduce land degradation, alleviate poverty, and conserve biodiversity while also restoring, sustaining, and enhancing the protective and productive functions and services of dryland ecosystem resources in western PRC. The program covers a 10-year period (2003-12) that supports a sequenced set of priority activities to strengthen the enabling environment and build institutional capacity for IEM approaches to combating land degradation. It will also demonstrate viable IEM models for widespread dissemination and replication.



CUBA: SUPPORTING IMPLEMENTATION OF THE CUBAN NATIONAL PROGRAM TO COMBAT DESERTIFICATION AND DROUGHT

GEF Investment: US\$10.9 million

Cofinancing: US\$79.44 million

Total Investment: US\$90.34 million

Participating Agencies: UNDP, FAO, and UNEP

Land degradation in Cuba is widespread, with 76.8 percent of productive land affected, including 14 percent that is degraded from desertification. This severe land degradation is affecting the livelihoods and the quality of life of a large number of Cubans, while also causing deterioration in the structure and functional integrity of ecosystems throughout the landscape of this small island state. The government of Cuba is committed to addressing these problems and has developed a comprehensive National Action Program to Combat Desertification and Drought (NPCDD) and has also allocated resources from the national budget for its implementation. This ambitious plan benefits greatly from a GEF partnership, as the degree and scale of the problems facing Cuba would be challenging for any national government to tackle alone.

The GEF has partnered with the Cuban government in an initiative called Supporting Implementation of the Cuban National Program to Combat Desertification and Drought. This partnership was formed as a result of initial conversations among Cuban authorities, UNDP, and the GEF Secretariat during the UNCDD Conference of Parties in September 2003. The total investment for this project is currently US\$90.34 million, including a GEF contribution of US\$10.9 million. The objective of this partnership is to build capacities and lend support for mainstreaming SLM principles into national, regional, and local planning frameworks. Another expected outcome of the program is the implementation of site-specific interventions for the prevention of land degradation and the conservation and rehabilitation of ecosystem integrity in Cuba.



NAMIBIA: PARTNERSHIP FOR INTEGRATED SUSTAINABLE LAND MANAGEMENT

GEF Investment: US\$11.2 million

Cofinancing: US\$52 million

Total Investment: US\$63.2 million

Participating Agencies: UNDP, The World Bank, and UNEP

Namibia is one of the driest countries in Sub-Saharan Africa, with an average rainfall of less than 250 mm annually. Desertification is an increasing problem resulting from unsustainable land management practices that lead to soil erosion and impairment of hydrological functions. Habitat conversion resulting from deforestation, overgrazing of rangelands, and loss of vegetative cover is a particular problem in pastoral areas. Since approximately 70 percent of the population is dependent on subsistence agriculture and livestock husbandry in this already arid region, human livelihoods are vulnerable to climatic and land uses changes, as is ecosystem health. The government of Namibia considers land degradation a serious problem, and is fully committed to combating it, as a national priority. However, insufficient capacity at institutional and individual levels, coupled with inadequate knowledge and technology dissemination, are constraining the effectiveness of interventions and the sustainability of outcomes.

The GEF is helping the Namibian government respond to these challenges through the Partnership for Integrated Sustainable Land Management, which brings together five government ministries, civil society groups, UNDP, UNEP, The World Bank, and other funding agencies. The goal of the partnership is to combat land degradation using integrated cross-sector approaches that will enable Namibia to achieve its targets for the Millennium Development Goal #7 (environmental sustainability) and ensure the integrity of dryland ecosystems and ecosystem services. It is expected that the project will help build and sustain capacity at systemic, institutional, and individual levels, thereby ensuring cross-sectoral and demand-driven coordination and implementation of sustainable land management activities; and to identify cost-effective, innovative, and appropriate SLM methods that integrate environmental, social, and economic objectives.



CENTRAL ASIAN COUNTRIES INITIATIVE FOR LAND MANAGEMENT (CACILM)

GEF Investment: US\$21.8 million

Cofinancing: US\$202.5 million

Total Investment: US\$224.3 million

Participating Agencies: ADB, UNDP

Land degradation is a serious economic, social, and environmental problem in the transition economies of Central Asia. It directly affects the livelihood of the rural population by reducing the productivity of land resources and adversely affecting the stability, functions, and services derived from natural systems. Agricultural yields are reported to have declined by 20-30 percent across the region since these countries achieved independence over a decade ago, causing annual losses of agricultural production as much as US\$2 billion.

The GEF is helping to address challenges in this region by investing in the multicountry partnership program, Central Asian Countries Initiative for Land Management (CACILM). The program is supported by a total investment of US\$224.3 million, including a GEF contribution of US\$21.8 million. CACILM is a 10-year, multicountry, multidonor program promoting SLM to restore, maintain, and enhance productivity of drylands. The goal of CACILM is to combat land degradation while also improving rural livelihoods across the region. It is anticipated that over the course of 10 years, an estimated US\$1.4 billion will be invested in SLM-related activities in the Kyrgyz Republic, Kazakhstan, Tajikistan, Turkmenistan, and Uzbekistan.

In order to implement projects effectively, each Central Asian Country has developed a National Programming Framework (NPF) for tackling the root causes of desertification. The program benefits from a multicountry approach because regional activities can complement national actions. Projects that fall under the CACILM initiative support the following objectives: capacity building for mainstreaming SLM and ensuring integrated SLM planning and management; development of an SLM information system; SLM research; and information dissemination and knowledge management.

Scaling Up Sustainable Land Management Interventions

Building on the Country Partnership Programs in GEF-3, the GEF further expanded its catalytic role in combating land degradation globally through programmatic approaches in GEF-4. Programmatic approaches are designed to secure larger-scale and sustained impacts on the global environment by integrating global environmental objectives into national or regional strategies and plans, using partnerships based on the comparative advantages of involved partners. Through programmatic approaches, the GEF promotes comprehensive approaches to natural resources management, including broader stakeholder engagement and public-private sector participation that lead to positive environmental management and social benefits. Programmatic approaches in GEF-4 included the Strategic Investment Program on Sustainable Land Management in Sub-Saharan Africa (SIP), the Sustainable Land and Ecosystem Management Program in India (SLEM), and the Program on Integrated Nature Resources Management in the Middle East and North Africa Region (MENARID). In addition, Land Degradation Focal Area resources were invested in a Strategic Program for Sustainable Forest Management in the Congo Basin.



AFRICA: TERRAFRICA SIP FOR SUSTAINABLE LAND MANAGEMENT IN SUB-SAHARAN AFRICA

GEF Investment: US\$150 million

Cofinancing: US\$986.5 million

Total Investment: US\$1.02 billion

Participating Agencies: The World Bank, AfDB, FAO, IFAD, UNDP, and UNEP

Land degradation is a global problem, but nowhere are its effects more serious than on the African continent, where 67 percent of the land surface is affected to various extents. Furthermore, with nearly 70 percent of the continent's population living in rural areas where they depend overwhelmingly on land resources, land degradation has far-reaching consequences for overall economic growth and human development. The severity of degradation problems in drylands was a major factor in emphasizing Africa as a top priority for the UNCCD. The magnitude and extent of land degradation requires robust strategies that will transform piecemeal interventions into large-scale models to ensure long-term sustainability.

Since the mid-2000s, African leaders and development partners have increasingly come to terms with this need, and have used the New Partnership on Africa's Development (NEPAD) to mobilize constructive engagement on solutions and approaches. This has been achieved mainly through the Comprehensive African Agricultural Development Program (CAADP), which specifically identified sustainable land and water management as one of four pillars for improving growth in the agriculture sector. At the same time, the NEPAD Environment Action Plan also highlights land and water degradation as a priority challenge for improving Africa's environmental and human health, especially in the face of climate change. With the African-driven CAADP and Environment Initiative gaining full support of development partners, the stage was set for large-scale engagement in SLM across the continent. As a result, TerrAfrica was launched in 2005 as a multistakeholder partnership for investments in SLM, including implementation of the UNCCD. TerrAfrica has since provided an operational framework for streamlining SLM investment and implementation on the subcontinent, in addition to mobilizing direct investments in SLM interventions.

In June 2007, the GEF Council approved the innovative Strategic Investment Program for Sustainable Land Management in Sub-Saharan Africa (SIP), linked to the TerrAfrica platform. The approval earmarked a US\$150 million grant to support countries in advancing programs to scale up existing conservation and SLM practices, such as watershed

management and land-use planning, conservation tillage, intercropping, agroforestry, small water infrastructure, woodlots, and erosion control. The GEF grant will leverage an additional estimated US\$986 million in cofinancing from the AfDB, FAO, IFAD, UNDP, UNEP, and the World Bank, as well as from bilateral partners and the 25 participating African countries.²⁴ The participating agencies are supporting African countries and NEPAD, as well as the Regional Economic Communities in developing a large strategic portfolio that aims to help shift the region's development agenda in favor of more sustainable and climate-resilient land management.

Projects supported under the SIP are integrated into, or help catalyze, the overall SLM programmatic vision of recipient countries through TerrAfrica. The SIP anchors the TerrAfrica-supported investment portfolio, extending the reach and impact of the GEF into broader country investment and policy dialogues. This mainstreaming impact is critical; GEF resources cannot by themselves go far enough because of the scope of the land management and climate risks facing Sub-Saharan Africa. The extended influence is also seen at the regional and international levels; for example, the 2009 call by African heads of state and agriculture and environment ministers to include agricultural lands and soil carbon in the post-Kyoto climate agreement. NEPAD facilitated this dialogue with TerrAfrica support and analytical work from partners, with the credibility of the SIP portfolio behind it.

SIP projects take aim at the underlying barriers to the implementation of strategic land management policies and practices, including fragmented policy, institutions, and knowledge; access to financial resources or land rights; and weak land-use planning. One improvement in the enabling environment for which the SIP and TerrAfrica continue to be a catalyst is the creation of national investment platforms in Ethiopia, Mali, Nigeria, Uganda, and other countries. In these countries, a public sphere is emerging around a country-defined, multisector vision for investment in land productivity, as well as the policy and institutional reforms needed to achieve this. Each country is developing or improving its strategic investment framework for SLM. These frameworks provide operational guidance for a sequence of ongoing and future priority investment operations in the medium term, built on a base of evidence and outreach.

The SIP also contributes to several regional activities, including direct support to NEPAD, regional economic communities, specialized regional organizations, and African civil society organizations. This will help to backstop countries in articulating investment priorities, tracking progress, sharing knowledge across countries and projects, and benchmarking success across and outside the SIP portfolio. In addition, some multicountry investments are supporting improved management of transboundary lakes and river basins.

²⁴ Country participation may change slightly as discrete projects are prepared.

Investing in Global Knowledge Innovations for Sustainable Land Management

Although clarified as a global issue because of its impact on ecosystem services and human well-being, the underlying causes, magnitude, distribution, and effects of land degradation are not adequately understood. As a result, estimates as to the extent and impact of land degradation are either largely conflicting or based on too many assumptions. This presents a major challenge for effectively targeting long-term investments in SLM as well as monitoring and assessing global environmental benefits such as carbon storage and sequestration. If land degradation control is to have any realistic opportunity to become effective, monitoring and assessment must be rendered more efficient, with linkages to implementation becoming more effective and reproducible.

The GEF recognizes that in order for countries to target SLM interventions effectively, there is need for increased access to knowledge and tools for monitoring and assessment of land degradation trends. Knowledge innovations from assessments at global, national, and local levels will inform much needed decision making and policy responses, which in turn guide investments in combating land degradation to generate global environmental benefits and improve human livelihoods. Furthermore, knowledge of soil and land degradation trends, and their impacts on ecosystems and human well-being can be mainstreamed across sectors and integrated into global development priorities such as the Millennium Development Goals.

With designation of the Land Degradation Focal Area in 2002 and the Operational Program in 2003, it was essential for the GEF to support international efforts to influence the root causes and barriers to sustainable SLM. An initial focus of GEF financing in this regard was on global assessment of land degradation to provide the knowledge base for targeting SLM interventions. The Land Degradation and Assessment in Drylands (LADA) project was one of the earliest GEF-financed initiatives developed in response to global demand for knowledge innovations to understand trends and drivers of land degradation, specifically in drylands. LADA combines a multiscale approach (from local, subnational, national to global) with strong institutional networking as basis for developing an integrated knowledge platform on land degradation. This will ensure a strong alignment of the science involved with policy options and decision making for investments in combating desertification.

GEF financing is also helping to generate knowledge and tools for project level monitoring of impacts. The GEF-funded project "Ensuring Impacts from SLM" (KM: Land) is a collaborative effort to develop scientifically rigorous indicator system for monitoring SLM interventions, including GEF investments in the Land Degradation Focal Area. The indicators will be scale and scope-dependant for application at both the project and global levels. While the "KM: Land" project will focus broadly on indicators for SLM, the GEF is also contributing to scientific initiatives on measuring global environmental benefits. The GEF financed "Carbon Benefits Project" is specifically focusing on modeling, measurement, and monitoring of carbon in agricultural systems and forest landscapes.



CASE STUDY LAND DEGRADATION ASSESSMENT IN DRYLANDS (LADA)

The Land Degradation and Assessment in Drylands project (Total financing: US\$ 16 million, GEF Grant: US\$ 7 million) is a global effort being led by UNEP and FAO to develop tools and methods for combating land degradation. The project has two principal objectives. First, to develop and implement strategies, tools and methods to assess and quantify the nature, extent and severity of land degradation and the overall ecosystem resilience of dryland ecosystems at a range of spatial and temporal scales. The assessment is integrating biophysical factors and socio-economic driving forces. Second, the project will build national, regional and global assessment capacities to enable the design and planning of interventions to mitigate land degradation and establish sustainable land use and management practices. These objectives are expected to overcome current policy and institutional barriers to sustainable land use in dryland zones and establish incentives to promote the accrual of global biodiversity benefits at national and local levels.

The project is designed to facilitate potential replication across all ecozones where there are major problems of dryland land degradation, and a range of land uses and types of degradation. At the

global scale, LADA is performing assessments at 8km-1km resolution. For local, subnational, and national assessment, the project is structured around six pilot countries, each with a lead institution. The countries are focal regional countries with an already acknowledged interest and expertise in assessment processes: *Argentina— for Latin America region; China — for East Asia region; Cuba — for Caribbean region; Senegal — for Francophone West Africa; South Africa — for Southern, Central and Eastern Africa region; Tunisia — for Near East, North Africa, and Mediterranean region.*

The project will deliver best practice guidelines, including full reviews of good practice and successful implementation, and finalized best practice advice. The best practices will not be confined to actions for rehabilitating severely land degradation; they will also stress situations where land degradation is effectively controlled, highlighting the generic conditions, socially, economically, and biophysically, for this to happen. Dissemination, uptake, and scaling up are all important activity components with potential for replication globally.



CASE STUDY ENSURING IMPACTS FROM SLM – DEVELOPMENT OF A GLOBAL INDICATOR SYSTEM (KM: LAND)

Although many of the root causes and barriers to SLM, such as policy disincentives, economic disincentives, lack of sustainable financing, and lack of capacities (technical and process-oriented), can be addressed through individual projects and programmatic approaches, the lack of knowledge management systems for controlling, preventing, and mitigating land degradation is often a major impediment to targeting investments. Best practices are rarely captured, and when they are, their dissemination or uptake is slow. A fundamental problem is that relevant best practices cannot be extracted unless there is a consensus on indicators of success (impact and performance), and better understanding of the benefits from combating land degradation.

The GEF-financed initiative Ensuring Impacts from SLM - Development of a Global Indicator System (GEF Grant: US\$1 million) led by UNDP was designed to help establish a comprehensive framework that explains the dynamics of land degradation/SLM. The KM: Land initiative will contribute to enhancing ecosystem integrity, stability, functions, and services by improved implementation of SLM activities. The overall objective is to strengthen the capacity for adaptive management of SLM projects in order to enhance their effectiveness

for generating and monitoring environmental benefits. The KM: Land initiative encompasses the following three specific objectives:

- Develop global- and local-level indicators that inter alia demonstrate global environmental benefits and related local livelihood benefits derived from actions on combating land degradation.
- Exchange and disseminate knowledge and practices generated through sustainable land management projects and programs through a Learning Network.
- Measure results and performance of SLM projects and programs through a coordinated and/or harmonized interagency monitoring and evaluation approach.

An important output for the GEF will be strategic guidance on metric measurement methodologies and project intervention logic. This will allow for more effective monitoring and evaluation of SLM projects based on clearer understanding of links among outputs, outcomes, and impacts. The indicator system and strategic guidance will form the basis for development of a tracking tool and knowledge management system for the Land Degradation Focal Area.



CASE STUDY CARBON BENEFITS PROJECT (CBP): MODELING, MEASUREMENT, AND MONITORING

The potential for carbon sequestration and storage is considered one of the most important global environmental benefits of SLM. Yet there are currently no standardized, cost effective protocols for the quantification and assessment of carbon benefits in natural resource management projects. Protocol is needed that can be applicable to the full range of GEF activities (e.g. all climate and land use/management variations). Work in this area should be standardized, comprehensible and robust. In response to this need, the GEF is financing a “Carbon Benefits Project” (Total Financing: US\$10.9 million; GEF Grant: US\$ 5.49 million) to promote carbon as a global environmental benefit in SLM. The project, which is lead by UNEP and the World Bank, will provide a cost effective, user-friendly, yet scientifically rigorous methodology for modeling, measuring and monitoring carbon and greenhouse gas mitigation benefits projects dealing with natural resources in all climate zones and land use systems.

The cost-effective methodology will allow users to estimate and model carbon stocks and flows and to measure, monitor, and manage carbon in SLM projects across an inclusive range of land-use systems. The methodology will be delivered in two parts. The first part will estimate and model the impact of projects on above- and below-ground carbon stocks in landscapes, under different climates and with different soil types. This component will estimate the potential for carbon sequestration and provide the basis for assessing how different land management regimes will contribute to building carbon stocks into the future. These tools will be useful for scenario analysis that could contribute to improved project design.

The second part will be a protocol for project-level measurement and monitoring carbon stocks in five pools (above-ground biomass, below-ground biomass, soil organic matter, litter, and deadwood). This part will enable measurement of non-CO₂ greenhouse gases, including estimates of net changes in stocks and flows. This will allow the establishment of baselines for carbon and GHGs at the landscape level and to monitor and account for changes in carbon stocks during project implementation. The carbon management methodology will provide pathways for project developers and managers to increase the realization of those benefits through the stabilization/increase in carbon stocks and reduced emissions from land-use activities and land cover change.

Major outcomes of the carbon benefits project include:

- a state-of-the-art methodology for measuring, monitoring, and reporting carbon baselines and outcomes from project activities related to terrestrial ecosystems (and particularly projects supported by the GEF and its implementing agencies) in a reliable, standardized and comparable way
- a toolbox for evaluation of best agronomic management practices designed for project developers and managers to increase emission reductions, carbon sequestration, and related ecosystem and socioeconomic benefits
- a Web-based portal that is accessible to a range of users, including project developers, fund managers, and international institutions to monitor and manage carbon goals.



Looking Ahead

At the time of finalizing this booklet, discussions were well underway for the fifth replenishment phase of the Global Environment Facility (GEF-5). The wide range of experience and institutional learning over the last four replenishment periods will no doubt position GEF for greater achievements in combating land degradation globally. It is also apparent now that the GEF mandate to combat land degradation, specifically desertification and deforestation, will require a robust allocation of resources to the Land Degradation Focal Area. With the livelihoods of more than 2.6 billion people at stake in over 100 countries, and an estimated loss of \$40 billion annually worldwide directly or indirectly attributed to land degradation²⁵, the GEF mandate continues to have enormous social, political, economic and institutional implications.

The threat of global climate change has increased the urgency for SLM innovations in vulnerable agro-ecosystems where effects are likely to exacerbate impacts on human livelihoods. This makes a compelling case for combating land degradation through sustainable agriculture and agro-pastoral rangeland management, and sustainable forest management to address human development priorities while improving ecosystem services as global environmental benefit. This is especially critical in the world's dryland regions that represent a major priority for the UNCCD. With an approved 10-year strategy (2008-2018), Parties to the UNCCD have called for an increased replenishment of the GEF, including allocation of significant resources to the Land Degradation Focal Area. As a financing mechanism of the UNCCD the GEF has a comparative advantage in helping countries meet their expectations for implementing the

strategy and generating global environmental benefits in a comprehensive and integrated manner.

During GEF-3 and GEF-4, investments in the Focal Area contributed to SLM projects in at least 40 of an estimated 100 countries affected globally by land degradation (desertification and deforestation), including investments through multi-Focal Area projects involving biodiversity conservation, management of transboundary water resources, and climate change mitigation. The demand for resources during both replenishment phases, however, far exceeded resource availability in this Focal Area. It is certain that demand for resources will be equally high in GEF-5 as countries face the challenge of increasing agricultural productivity to meet the need of growing populations. As noted in the recent IAASTD²⁶ report, increasing rates of land degradation in many regions may limit the ability of agro-ecosystems to provide food security. A likely consequence of this scenario is increased clearance and fragmentation of natural habitats, leading to further destabilization of ecosystems, loss of biodiversity, and increased risk of greenhouse gas emissions through deforestation and fires.

With nearly 2 billion hectares of land already affected by human-induced soil degradation worldwide, the GEF must strengthen its role in as financial mechanism in order to foster SLM as a means of stabilizing ecosystem services and reducing vulnerability of rural populations. This will involve increased support to country efforts on building effective enabling environments for successful implementation and scaling-up of SLM at multiple scales. The GEF also needs to

25 Dregne, H.E., and N.T. Chou. 1992. "Global desertification dimensions and costs." In [[eds.?]] "Degradation and Restoration of Arid Lands." Texas Tech. University Press, Lubbock.

26 International Assessment of Agricultural Knowledge, Science, and Technology for Development. 2009 (supported by World Bank and FAO).

scale-up its investment through comprehensive and integrated approaches that cover increasingly larger geographical areas. Improved management of agro-ecosystems and forest landscapes over larger geographical areas will safeguard soil and water resources, increase carbon stocks²⁷ and reduce emissions, and protect biodiversity. In the case of drylands where SLM interventions are crucial for improved livelihoods, the large surface area also makes them an important target for carbon storage²⁸ and sequestration. Demonstrating reduction of carbon emissions through SLM projects will help position GEF for an influential role in future financing options for climate change mitigation in agriculture. The GEF will harness these opportunities and strengthen its role as a financing mechanism to help position countries mainstream SLM as a fundamental aspect of sustainable development.

For GEF-5, positive incentives are needed to enhance the focal area portfolio and increase focus on emerging issues for SLM in rural production landscapes, such as:

- managing competing land uses and resulting changes to stabilize ecosystem services,
- managing the exploitation of natural resources to balance short-term economic gains with ecological and social sustainability,
- adapting to climate change and potential for mitigation through reduced emissions and carbon sequestration.

The Land Degradation Focal Area strategy for GEF-5 will embody the landscape approach and ecosystem management principles, and is consistent with overall approach to NRM across the GEF focal areas on Biodiversity, Climate Change, and International Waters. Based on the overall outlook for NRM in GEF-5, the focal area strategic objectives will foster synergies across focal area portfolios to increase livelihood and environmental benefits in the context of sustainable development. The goal of the focal area strategy in GEF-5 is to contribute to arresting and reversing current global trends in land degradation, specifically desertification and deforestation. The following four objectives form the basis of a results-oriented framework that will guide implementation of the strategy:

1. Maintain or improve a sustainable flow of agro-ecosystem services to sustaining the livelihoods of local communities.
2. Generate sustainable flows of forest ecosystem services in arid, semi-arid and subhumid zones, including sustaining livelihoods of forest-dependent people.
3. Reduce pressures on natural resources from competing land uses in the wider landscape.
4. Increase capacity to apply adaptive management tools in SLM.

It is envisaged that these efforts will further strengthen the GEF's role as a financing mechanism for combating land degradation, and a strategic partner for addressing sustainable development priorities globally.

27 In 2000, the IPCC estimated that feasible improvements in cropland management, grazing land management, agroforestry, and rice systems within existing land uses could increase carbon stocks by 125, 240, 25, and 7 MtC per year by 2010.

28 The Millennium Ecosystem Assessment (2005) estimated that the total dryland soil organic carbon reserves make up 27 percent of the global soil organic carbon reserve.

ABOUT THE GEF

The Global Environment Facility unites 178 member governments—in partnership with international institutions, nongovernmental organizations, and the private sector—to address global environmental issues. An independent financial organization, the GEF provides grants to developing countries and countries with economies in transition for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants. These projects benefit the global environment, linking local, national, and global environmental challenges and promoting sustainable livelihoods.

Established in 1991, the GEF is today the largest funder of projects to improve the global environment. The GEF has allocated \$8.6 billion, supplemented by more than \$36 billion in cofinancing, for more than 2,400 projects in more than 165 developing countries and countries with economies in transition. Through its Small Grants Programme, the GEF has also made more than 10,000 small grants directly to nongovernmental and community organizations.

The GEF partnership includes 10 Agencies: the UN Development Programme, the UN Environment Programme, the World Bank, the UN Food and Agriculture Organization, the UN Industrial Development Organization, the African Development Bank, the Asian Development Bank, the European Bank for Reconstruction and Development, the Inter-American Development Bank, and the International Fund for Agricultural Development. The Scientific and Technical Advisory Panel provides technical and scientific advice on the GEF's policies and projects.

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