

# BioCarbon Fund



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Notes: All \$ = U.S. dollars (unless otherwise indicated). One ton = 1000 kilograms (one metric tonne). All greenhouse gas emission reductions are measured in tons of carbon dioxide equivalent (tCO<sub>2</sub>e).

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## FRANÇOIS FALLOUX, CHAIR OF THE BIOCARBON FUND PARTICIPANTS' COMMITTEE

“The BioCarbon Fund, through very innovative approaches, has proved to be an effective instrument to help poor rural communities participate in climate change mitigation and thereby derive an additional revenue. Without carbon sequestration, least developed countries, particularly in Africa, would be denied this new source of income. The BioCarbon Fund has also contributed to make rural development more sustainable by helping rehabilitate degraded lands and increase soil fertility. Finally, it has contributed to the development of cost-effective carbon measurement methodologies recently approved by the Clean Development Mechanism (CDM) Executive Board.

In the long run, the BioCarbon Fund should prepare for carbon sequestration on a much larger scale because changing energy, industry and transportation processes will not alone suffice to lower greenhouse gas emissions by a factor of two to three as recommended by the Intergovernmental Panel on Climate Change (IPCC).”



## WARREN EVANS, DIRECTOR OF ENVIRONMENT, THE WORLD BANK

“As you will read in this booklet, the BioCarbon Fund is opening windows of opportunity for the rural poor around the world. Many of the poorest developing countries will only be able to benefit from the carbon market through their forestry and agricultural sectors. The fund helps rural communities find new value in their agricultural lands and forests as they earn income from sequestering or conserving carbon.

From the perspective of a development bank, biological carbon sequestration offers the greatest convergence between the carbon emission reductions market and environmentally sustainable development. The BioCarbon Fund pilots projects that are motivated by sustainable development, but also contribute to climate change mitigation and adaptation. It supports the land use and forestry segment of the carbon market, making it possible for rural populations to enter the market and compete.”



## JOËLLE CHASSARD, MANAGER, CARBON FINANCE UNIT, THE WORLD BANK

“The first Tranche of the BioCarbon Fund has been a success. The BioCarbon Fund has been a pioneer on a number of fronts: A large part of the portfolio consists of projects in Sub-Saharan Africa where the carbon market has been opened up to communities who would otherwise be excluded; its technical contribution has shown that land use and forestry projects can contribute significantly to the menu of options that will reduce greenhouse gas emissions; and through its window for Kyoto non-eligible carbon assets, the BioCarbon Fund is contributing substance to the discussion on avoided deforestation.

This has encouraged the Bank to open a second Tranche of the BioCarbon Fund which will have similar objectives and structure to the first Tranche. It will include a window for Kyoto non-eligible carbon assets with projects targeting sustainable land management. This will continue the efforts initiated by the BioCarbon Fund to ensure that the poorest communities can also benefit from the carbon market.”

A photograph of a forest stream with mossy rocks and a fallen log. The water is flowing over the rocks, creating small cascades. The surrounding forest is dense with green foliage and trees. The scene is captured in a soft, natural light, emphasizing the textures of the moss and the vibrant colors of the forest.

**Land use, land-use change and forestry (LULUCF)** activities can significantly contribute to mitigate climate change. LULUCF activities include afforestation and reforestation activities, and forest and cropland restoration and management activities.

*One-third of greenhouse gas build-up in the atmosphere is estimated to result from changes in land use.*

# Introduction

## THE GLOBAL CONTEXT

Reducing greenhouse gas emissions caused by our oil- and coal-driven economies is critical to tackling climate change. With both the European Union Emissions Trading Scheme (EU ETS) which began on January 1, 2005 and the Kyoto Protocol which came into force on February 16, 2005, greenhouse gas emission reductions became international commitments. Industrialized country signatories to the Protocol are obligated to reduce their greenhouse gas emissions by an average of 5.2 percent compared with 1990 emissions, during the period 2008 to 2012. Under the Kyoto Protocol, Annex 1 (industrialized) countries may achieve these reductions either domestically or through three international market-based mechanisms:

- Joint Implementation (JI), or purchasing greenhouse gas emission reductions from projects in other Annex 1 countries (generally, countries with economies in transition);
- Clean Development Mechanism (CDM), or purchasing emission reductions from projects in developing countries; and
- Emissions trading among Annex 1 countries.

Through the first two mechanisms, the Kyoto Protocol enables countries and companies in countries that have committed to reductions to supplement their domestic efforts to reduce emissions by purchasing greenhouse gas emission reductions generated by projects in developing countries and countries with economies in transition. These are countries where emissions can be reduced at lower cost, while contributing to sustainable development. The emerging global carbon market is predicated on the fact that greenhouse gases mix uniformly in the atmosphere, which makes it possible to reduce emissions at any point on the planet and have the same effect.

## REDUCTIONS THROUGH LAND USE, LAND-USE CHANGE AND FORESTRY (LULUCF)

One-third of greenhouse gas build-up in the atmosphere is estimated to result from changes in land use. Land use, land-use change and forestry (LULUCF) activities can significantly contribute to mitigate climate change. LULUCF activities include afforestation and reforestation activities, and forest land, rangeland and cropland restoration and management activities. They mitigate climate change by removing carbon from the atmosphere or by preventing further releases of greenhouse gases from vegetation and soils.

LULUCF can create benefits for the local environment and biodiversity. For example, projects help restore natural habitat for wildlife and protect soil against erosion; agroforestry increases the vegetative cover and helps diversify crop mixes, which reduces susceptibility to pests; watershed management enhances water infiltration; and reduced tillage improves agricultural yields by retaining moisture, helping soils regenerate and limiting the need for chemical inputs.

LULUCF can also create social benefits for local communities, including additional, more stable, or less physically taxing employment. It can provide new sources of revenue, in cash or in kind, from the sale of greenhouse gas emission reductions from the project, and/or from the project's activities—for instance the acquisition of free or cheaper fuelwood and timber, sale of fruit or other agroforestry and non-timber forest products. LULUCF can promote the diversification of economic activities—the creation of long-term savings and the acquisition of new knowledge and techniques, for example for tree planting or conservation agriculture.

The great variety of LULUCF projects makes them suitable for most types of ecosystems, which they can help conserve and enhance and to which they can add greater economic value. These activities are mostly implemented in rural areas and represent one, if not the only way, for the poorest populations to participate in the carbon market and reap some of its benefits.

## LULUCF IN THE MARKET

The share of LULUCF-based transactions has been declining in the carbon market. Although LULUCF projects represented 41 percent of the emission reductions sold between 1996 and 1999, their share declined to just seven percent in 2003, three percent in 2004 and one percent in 2005 and 2006. The share of LULUCF is expected to stay small as large-scale transactions reducing industrial gases such as HFC-23 or nitrous oxide come onstream. The smaller number of transactions are mostly due to low demand, which results from the restrictive treatment of LULUCF in the Kyoto Protocol and other emission reduction regimes. Not surprisingly, these market imbalances create opportunities for those buyers willing to engage.

Under the CDM, Annex 1 countries have the right to purchase certificates of carbon sequestration only from afforestation and reforestation projects undertaken in developing countries and use them to offset no more than one percent of their 1990 greenhouse gas emissions. These credits are valid for five years at a time and may be renewed subject to verification of the carbon stock, for up to 60 years, after which they must be replaced with non-LULUCF credits. Afforestation and reforestation are only allowed on land that can be proven to have been without forest since December 31, 1989. A further restriction applies to small-scale projects, which are allowed to generate emission reductions of no more than 8,000 tons of carbon dioxide equivalent (tCO<sub>2</sub>e) per year.

In the EU ETS, which trades permits to emit greenhouse gases by 11,400 facilities located in the European Union, LULUCF credits are simply not allowed until 2008 at least.



## CHINA: PEARL RIVER WATERSHED MANAGEMENT PROJECT

China is a very large consumer of natural resources, including wood. China's average forest area and volume per capita represent between one-fifth and one-eighth of the world average. Deforestation has been particularly evident in the vast areas of northwestern and northern China as well as at the sources of many large rivers where the ecological environment is very fragile.

The reforestation being carried out by the project along the middle and upper reaches of the Pearl River will reduce soil erosion locally and improve the regulation of hydrological flows. The additional income from the carbon sales and the sustainable management and exploitation of the regenerated forest will further provide benefits to local farmers and communities. These improved natural and social conditions will in turn provide incentives for local communities for a more sustainable and stable use of the land on which the project will be developed.

As the first full scale LULUCF project in China, it will test how reforestation activities can generate high-quality emission reductions in greenhouse gases that can be measured, monitored and certified. The project also sets an example for the entire CDM since it developed, with the support of the BioCarbon Fund, the first approved baseline and monitoring methodology (for reforestation of degraded land with no leakage risk). The project also became the very first LULUCF project to be registered by the CDM Executive Board in November 2006.

The purchase agreement was signed in June 2006. The BioCarbon Fund will purchase emission reductions of 462,000 tCO<sub>2</sub>e from the project.



A man with a mustache, wearing a white long-sleeved shirt and a dark hat, is crouching in a field of tall grass and trees. He is holding a white measuring tape against a tree trunk. The background shows a line of trees with yellow fruit hanging from them. The foreground is filled with out-of-focus green and brown foliage.

**Worker for the Pico Bonito Foundation in Honduras** measures baseline carbon absorption of existing trees in preparation for a multi-year project.

# Tackling Climate Change at the World Bank

At the G8 summit in Gleneagles, Scotland in July 2005, the World Bank was asked to create a new framework for mobilizing investment in clean energy and development. Carbon finance is one instrument in that framework. The World Bank sees its role as ensuring that the carbon market becomes an instrument to help achieve sustainable development in its client countries and that the least developed reap the benefits of the emerging market. In the last seven years the World Bank's involvement in carbon finance has grown from the initial conception and development of the pioneering \$180 million Prototype Carbon Fund to nine carbon funds and facilities as of February 2007, that represent around \$1.93 billion, with 62 private sector companies and 13 governments as participants.

The World Bank also manages several programs to foster adaptation to climate change. These programs use an integrated approach to reduce the vulnerability of areas of the world to climate change consequences. For example, such a program in the Caribbean region has led to the design and implementation of a sea level and climate monitoring system, coral reef monitoring protocols and vulnerability assessment tools for coastal ecosystems.

In 2005 the World Bank developed CF-Assist, a capacity building and technical assistance program to enable the full engagement in the carbon market of developing countries and economies in transition.

## WHAT IS THE BIOCARBON FUND?

The BioCarbon Fund commenced operations in May 2004 to foster the role of LULUCF in the carbon market and the CDM and therefore extend benefits of the carbon market to the poorest rural areas and to the local environment. It targets projects that sequester or conserve greenhouse gases in forests and agro-ecosystems to mitigate climate change. These projects also represent an opportunity for the BioCarbon Fund to develop clear and robust methodologies for carbon sequestration calculations and to address outstanding issues regarding permanence of the project providing the carbon emission reductions and the crediting of biological carbon. It focuses on learning-by-doing, to build up substantial experience as the rules regarding eligibility of land-use activities are further developed.

### **BioCarbon Fund Tranche One**

Most of this booklet (including the projects described throughout) deals with Tranche One, which was closed to participation on August 31, 2005. Contributions to Tranche One, from 14 governments and companies from Japan, Europe and Canada, amount to \$53.8 million—54 percent from private companies and 46 percent from government entities. Tranche One received about 150 project proposals, of which 24 were approved for advanced preparation. Nineteen emission reductions purchase agreements are expected to result for Tranche One.

## BioCarbon Fund Participants (Tranche One)

The participants in the BioCarbon Fund can be called true pioneers. Most of the BioCarbon Fund participants chose the BioCarbon Fund as opposed to other funds because it is "greener". Closer to rural populations, its projects produce multiple benefits. It explores a new market segment with attractive prices to a buyer, and it also explores activities that might become eligible after 2012 (e.g., avoided deforestation).

## BIOCARBON FUND PARTICIPANTS

**Government of Canada**

**Government of Italy**

**Government of Luxembourg**

**Government of Spain**

**Agence Française de Développement (AFD)**

**Eco-Carbone**

**Idemitsu Kosan Co., Ltd.**

**Japan Iron & Steel Federation (JISF)**

**Japan Petroleum Exploration Co., Ltd. (JAPEX)**

**The Okinawa Electric Power Company, Inc. (OEPC)**

**Sumitomo Chemical Co., Ltd.**

**Sumitomo Joint Electric Power Co., Ltd.**

**Suntory**

**Tokyo Electric Power Company (TEPCO)**

## Tranche Two

The interest spurred by Tranche One of the BioCarbon Fund among both private and public sector participants, host countries and carbon market experts has encouraged the Bank to launch a second Tranche. It is the logical next step coming on the heels of a particularly exciting and fast moving time for the BioCarbon Fund, with the realization of its first projects. With the approval of the first methodologies and the effective preparation and negotiation of several transactions, the BioCarbon Fund is beginning to fulfill its promise to bring the social and economic benefits associated with LULUCF activities to many rural communities worldwide, along with local and global environmental benefits and quality, as well as long-term carbon emission reductions to its participants. The BioCarbon Fund is proving to be a model for demonstrating the powerful role that forests and agricultural lands can play in mitigating climate change and improving the lives of the most vulnerable communities. Tranche Two opened to contributions in November 2006, and became operational in March 2007.





## BIOCARBON FUND ACHIEVEMENTS

### Putting Africa front and center

The active project portfolio of the BioCarbon Fund is distributed over the regions where the World Bank is operating. A distinguishing feature of the BioCarbon Fund is that Africa occupies a large part of the portfolio. This feature signals a deliberate commitment by the World Bank and is at a strong variance relative to the entire carbon market.

Overall in the carbon market, Sub-Saharan Africa represents three percent of all the transactions concluded. By allocating a large part of its portfolio to Africa, the BioCarbon Fund makes good on its promise to extend the benefits of the carbon market to rural, less affluent communities.

### Turning rules into contracts and deals

The rules for LULUCF activities adopted at the ninth Conference of the Parties (CoP9) in December 2003 provide the operating framework for the BioCarbon Fund. This framework, however, has been characterized by many uncertainties. The BioCarbon Fund set out to develop workable commercial contracts within these rules. Using the expertise of the World Bank, the BioCarbon Fund assembled the necessary financial, legal and regulatory expertise to produce sample contracts (emission reductions purchase agreements, ERPAs) to make LULUCF transactions a reality. Twelve purchase agreements have been signed as of February 28, 2007 and the remaining seven agreements are expected to be signed by July 2007. The work until now represents more than the signing of these agreements—the type of contracts developed by the BioCarbon Fund clearly sets an example of how LULUCF projects can be concretely implemented.

## Methodology breakthroughs

Methodologies for establishing baseline scenarios, which are necessary to calculate the emission reductions attributable to projects and for monitoring emission reductions from projects, are complex and represent a bottleneck in the development of the carbon market. This difficulty is even greater for LULUCF projects given their own specific challenges and complexity and the fact that the rules governing LULUCF projects in the CDM were only adopted in December 2003.

The World Bank has been at the forefront of developing methodologies since the beginning of the carbon market, and is making a significant contribution to LULUCF methodologies. The BioCarbon Fund has developed most of the approved LULUCF methodologies to date. The first one ever to be approved was the methodology for the Pearl River Watershed Management Project in China, which applies to reforestation of degraded land where no economic activities are present. Additional methodologies for projects in Albania, Honduras and Moldova have been approved by the Executive Board, that supervises the Clean Development Mechanism. These methodologies now belong to the public domain and can be used by any project developer wishing to do so.

## Creating and sharing knowledge

The creation and dissemination of valuable tools and knowledge is not limited to methodological issues. The BioCarbon Fund has a commitment to knowledge creation and sharing. It has made this commitment a reality and occupies a leading and central role in the development of new knowledge in the various aspects of the carbon business and of the CDM. Thanks to financial and technical support from the BioCarbon Fund, Winrock International issued a "Sourcebook for LULUCF Projects", which gathers and organizes the latest existing information on the subject. This publication, which is available on-line at no cost ([www.winrock.org/Ecosystems/tools.asp](http://www.winrock.org/Ecosystems/tools.asp)), highlights the BioCarbon Fund's broad effort to facilitate project development and maximize synergies among the various international efforts.

The BioCarbon Fund also addresses the crucial need for capacity building. A specific structure, *BioCFplus*, has been created to coordinate these efforts. The BioCarbon Fund seeks to maximize the return on these investments by making training materials available on the public domain of the BioCarbon Fund website. These presentations and technical notes are practically oriented and can be widely used.

The BioCarbon Fund website contains a description of the projects included in the portfolio that allows the reader to discover the world of LULUCF, including some specific issues such as leakage and non-permanence, through practical examples. The BioCarbon Fund website represents a "one-stop" shop for anybody interested in LULUCF. The private domain provides an efficient forum for discussions among fund participants ([www.biocarbonfund.org](http://www.biocarbonfund.org)).

## NIGER: ACACIA COMMUNITY PLANTATIONS PROJECT

The Republic of Niger is one of the largest countries in West Africa, but one of the least densely populated. Over 90 percent of the population of Niger lives in the southwest corner of the country near the fertile Niger River basin. The remaining two-thirds of Niger are covered by desert, which presents a tremendous agricultural challenge for the local people. Drought and famine have had serious effects on human health and the environment in recent years.

The Acacia Community Plantations Project is based on the exceptional capacities of the tree species, *Acacia senegalensis*. This endemic species from the African Sahel is superbly adapted to harsh ecological conditions and produces several environmental benefits. Its rooting system is very powerful, which makes it efficient for dune stabilization as well as wind and water erosion control. Its nitrogen-fixing ability improves the fertility of extremely degraded soils. In addition, it will be used to produce gum arabic and re-introduce agricultural activities through intercropping with groundnuts and cowpeas. Gum arabic is a natural gum from the acacia tree, which is used primarily in the food industry as a stabilizer. The vast majority of the plantations will be developed by small local farmers on communal desert lands under partnership agreements with a private company that would also harvest the gum arabic.

The project implements the National Niger Strategy for the development of *Acacia senegalensis* plantations. This strategy deals with the disappearance of natural dry forests caused by clearing much beyond regeneration capacity to meet growing demand for firewood. The pilot project could be replicated across Africa from Senegal to Sudan. The purchase agreement was signed in December 2006. The BioCarbon Fund will purchase emission reductions of 500,000 tCO<sub>2</sub>e from the project.

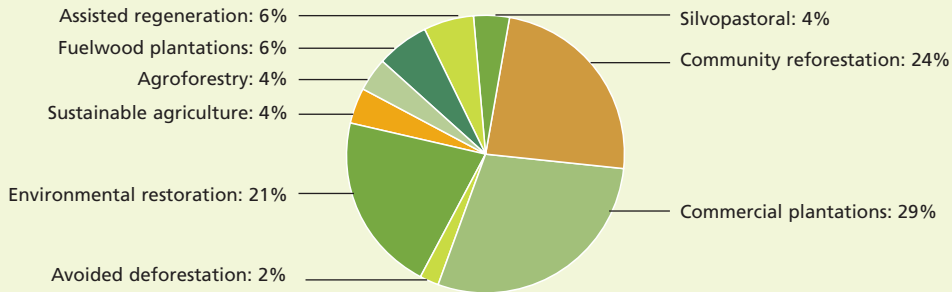


## BIOCARBON FUND PORTFOLIO

As of February 28, 2007 the BioCarbon Fund has nineteen projects worth an estimated \$27 million spread across continents and asset classes (see charts below). The first emission reductions purchase agreement (ERPA) was signed for the 'Precious Woods' project in Nicaragua. Since then eleven other agreements were successfully negotiated. Although the fund is a market maker in the still underdeveloped LULUCF segment, it seeks to offer fair prices that are reflective of risks and benefits, and, in the case of CDM projects, the temporary nature of the credits that will be generated.

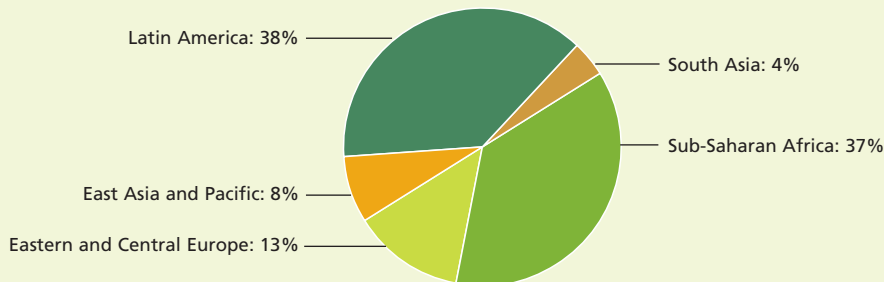
### Asset Class Distribution

Nominal ERPA Value, including options



### Geographic Distribution

Nominal ERPA Value, including options





## ALBANIA: ASSISTED NATURAL REGENERATION PROJECT

Current forest and land-use trends in Albania point to an acceleration of forest degradation. Total forest area has been declining for decades. Rising populations, resurgence of forest-related industries, increasing animal population, increasing energy consumption and inappropriate management practices all combine to threaten the productivity and long-term sustainability of forests and grazing and agricultural lands.

This project aims to afforest and reforest highly degraded land and develop a multi-functional high forest of native species. It replicates a successful pilot financed by the World Bank. A deliberate effort is necessary to induce natural regeneration, prevented currently by the excessive grazing by goats. The project will use existing alternative grazing areas to foster the improvement of pasture management to solve this issue.

The project will be implemented on communal forest lands for which the rights to profits from the properties are transferred to local communes. It will provide an opportunity to bring critically needed sustainable revenues directly to poor rural communities in exchange for environmental services. The reforestation will also help to halt the ongoing degradation of forest lands, loss of vegetative cover and soil erosion. This project is part of a broader effort to establish sustainable, community-based natural resource management practices in Albania. The methodology for this project type has been approved by the Executive Board of the CDM.



India: Improving Rural Livelihoods Project—preparing seedlings in a greenhouse.



# Shaping Tomorrow's Carbon Market

## WINDOW TWO OF THE BIOCARBON FUND

The BioCarbon Fund is not limiting its involvement to existing CDM rules—it also contributes to shaping tomorrow's carbon market. Window Two was created to explore and pilot LULUCF activities that produce climate, social and environmental benefits, but are ineligible in the first commitment period of the Kyoto Protocol, e.g., forest management, avoided deforestation, sustainable agriculture and revegetation. Window Two activities can pertain to projects that are also included in Window One for other activities. The approach followed by the BioCarbon Fund results in a diverse set of LULUCF activities, some of which may not be eligible under the current rules of the Kyoto Protocol, but are nonetheless important for their environmental and development benefits. Window Two activities acquire special importance given the regained interest in avoided deforestation and avoided degradation since the first meeting of the Parties to the Kyoto Protocol in Montreal in December 2005, where several developing countries successfully placed avoided deforestation back on the negotiating table.

## DEALING WITH LULUCF ISSUES

### Permanence

A major concern about using LULUCF to comply with Kyoto targets regards the length of time that stored carbon will remain sequestered. Practically, the carbon sequestered in trees or in the soil might be lost to the atmosphere through fires, pests or management actions. The BioCarbon Fund uses several options to mitigate this risk in its CDM projects. In each project, an assessment of the “non-permanence risk” is done and specific mitigation measures identified. However, the most effective option is to support projects where the new activities sufficiently reward local people so that they will be encouraged to continue engaging in those activities in the future.

### Replacement

CoP9 introduced the system of temporary crediting for CDM LULUCF projects. Carbon credits from such projects are temporary and necessitate verification of the continued storage of carbon at least every five years. If a project does not retain enough stored carbon, steps can be taken to replace the existing credits with emission reductions or sequestration from elsewhere. This provides the guarantee that no credits will be issued for carbon stocks that were lost, and

therefore secures the environmental integrity of the crediting system. In the BioCarbon Fund this replacement can be done by various measures including procuring credits from energy and infrastructure projects from other carbon funds administered by the World Bank. Note that JI LULUCF projects are not subject to the same rules to the extent that the credits they generate do not have to be replaced.

### Leakage

Some sequestration projects may lead to an increase in emissions in areas outside the project boundaries. For example, reforesting an area that has been used for agriculture could displace farmers who may then deforest lands elsewhere to resume farming, a consequence known as leakage. However, most BioCarbon Fund projects will be community-based. The boundaries of these types of projects can be established with good authority and leakage outside those boundaries will usually be small and contained. The projects often include measures to offset leakage, such as the provision of wood biomass for timber or fuel, or the creation of alternative sources of income, for example through agroforestry (the combination of trees and agricultural crops) or silvopastoral systems (the combination of trees and grazing activities). In all cases, any leakage can and will be monitored and will be conservatively compensated for by discounting the emission reductions claimed. Baseline and monitoring methodologies have been specifically designed to factor in leakage. The BioCarbon Fund will continue to innovate in the area of leakage prevention and management.



## MADAGASCAR: ANDASIBE-MANTADIA BIODIVERSITY CORRIDOR PROJECT

Sometimes referred to as an “island continent”, Madagascar, located off the coast of Africa, is the fourth largest island in the world. It has a great variety of climatic zones, including both tropical and temperate climates, and a unique biological diversity. 85 percent of the island nation’s plants and animals are found nowhere else in the world. This diversity is threatened by population growth and unsustainable exploitation of Madagascar’s ecosystems and resources.

This project represents an exceptional attempt at an integrated approach to reverse the ongoing degradation of the primary forests of Madagascar. The overall goal is to enhance livelihoods and native biodiversity to ensure sustainability. Therefore strong emphasis will be given to the training of local communities to modify their behavior.

Forest corridors that are crucial for many threatened species among the Analamazaotra Reserve, Maromizaha Private Forest and Mantadia National Park in east-central Madagascar will be rehabilitated. At the same time, sustainable forests and fruit gardens will provide significant alternative livelihoods to local communities and a buffer around the corridors. Finally, the project will implement a set of actions to protect 80,000 hectares of primary or degraded forest north of the corridor, so as to maintain continuity up to Zahamena National Park. This last component will pilot avoided deforestation. This project is supported by the Third Environment Program of the Republic of Madagascar. The purchase agreement was signed in December 2006. The BioCarbon Fund will purchase emission reductions of 200,000 tCO<sub>2</sub>e.

“The Madagascar Biodiversity Corridor project will respond to the top priority of local communities by ensuring their access to the land. At the same time, the project is a key tool for Conservation International to protect Madagascar’s biodiversity, one of the richest internationally.”

—*Jeannicq Randrianarisoa, Project Manager  
Conservation International*



The **BioCarbon Fund** will build experience with avoided deforestation through its Window Two projects.



# Changing Environment: Regained Momentum

There are a number of initiatives and potential changes that are underway, to which the BioCarbon Fund could contribute, that could help move LULUCF up the climate change and emission reductions agenda. These include:

## AVOIDED DEFORESTATION

Deforestation and forest degradation are major sources of carbon dioxide emissions, globally equivalent to the entire fossil fuel emissions of the United States. Addressing this issue has however been highly controversial in previous climate change negotiations and in 2001 resulted in the exclusion of forest protection projects from the list of eligible CDM LULUCF activities.

Four years later, the climate change talks at Montreal in December 2005 witnessed a strong change of attitude from many countries. The proposal of the Coalition for Rainforest Nations, led by Papua New Guinea, to the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) to address emissions from deforestation and create incentives to reward developing countries for bringing these emissions under management was warmly welcomed by most Parties and observers.

In Nairobi in November 2006 the Conference of the Parties called on Parties and accredited observers to submit technical and policy proposals on reducing emissions from deforestation and forest degradation in developing countries and to analyze these proposals at a workshop before the 26th meeting of the Subsidiary Body for Scientific and Technological Advice (SBSTA).

The BioCarbon Fund will build experience with avoided deforestation through its Window Two projects. Even though the talks on avoided deforestation under the UNFCCC are likely to focus on systems for avoiding deforestation at the regional or national level in order to internalize leakage problems, on-the-ground activities will involve investment projects for which the project-level experience of the BioCarbon Fund will prove useful.

## REVIEW OF RULES ON LULUCF IN THE CDM

As more practical experience is gained from the implementation of projects, it should become apparent that several aspects of the rules governing CDM LULUCF projects could be improved. First, LULUCF activities other than afforestation and reforestation could be deemed eligible for credits. Second, the rule that CDM LULUCF projects can only supply one percent of Annex 1 1990 emissions could be lifted or relaxed. Third, the Parties to the Kyoto Protocol may wish to reconsider the rule mandating the replacement of all CDM LULUCF credits at the end of 60 years, as this rule may create perverse incentives to cut trees in order to be able to buy the replacement credits—an



outcome which would clearly negate the principle of environmental integrity that led to the adoption of temporary crediting. Fourth, the 8,000 tCO<sub>2</sub>e emission reductions limit on small-scale projects could be relaxed.

## REVIEW OF RULES IN EU ETS

Credits from forestry projects currently have no value in the European Union's Emissions Trading Scheme (EU ETS). These credits were excluded by the rules adopted in 2003-2004 to regulate the import of certified emission reductions and emission reduction units from CDM and JI projects by European firms. This was mostly due to the absence of rules governing LULUCF in the Kyoto Protocol.

The regulatory uncertainty surrounding LULUCF at that time has been considerably reduced since then. CoP9 adopted clear rules on monitoring CDM LULUCF activities, which have been further defined by the CDM Executive Board. As noted earlier, the first baseline and monitoring methodologies have now been approved and more methodologies are in the process of being reviewed and approved. Several CDM LULUCF projects have been validated and/or registered.

In terms of JI LULUCF projects, now that the Supervisory Committee is in place, JI LULUCF projects can also start to be validated and registered. The continued exclusion of LULUCF credits from the EU ETS restricts demand for these types of credits despite their potential benefit to hundreds of millions of poor rural dwellers—LULUCF is often the only way for them to participate in the carbon market. The main advantage of including LULUCF credits is the flexibility provided by temporary credits in meeting compliance targets. For example, a company expecting to replace an ageing power plant in five years can buy temporary credits for five years and replace those with the emission reductions that will ensue from the investment five years later.



## HONDURAS: PICO BONITO FOREST RESTORATION PROJECT

Honduras suffered the greatest percentage loss of forest cover of any country in Latin America over the past generation. Between 1990 and 2005, over 37 percent of the forests of Honduras disappeared. Worse, since the end of the 1990s, Honduras' rate of forest loss has increased by nine percent. This deforestation touches all of Honduras' varied ecosystems—from mountainous forests to rainforests to mangrove swamps—and threatens its ecological richness. Honduras' high rate of deforestation stems from its poverty. Despite its natural wealth, both mineral and biological, Honduras is one of the poorest countries in Central America. Deforestation results from agricultural colonization by subsistence farmers, clearing for cattle pasture, collection of fuelwood (65 percent of the country's energy comes from fuelwood), mining activities, timber harvesting and forest fires.

This project will implement a range of community pilot activities in the Pico Bonito National Park buffer zone. The Park's natural resources have been seriously degraded due to marginal agriculture and cattle grazing. Sustainable forestry management will be introduced along with other agroforestry production techniques to reverse this situation.

Five types of activities will be supported: agroforestry for small-scale producers, reforestation for conservation, reforestation for sustainable commercial forestry under certification, forest preservation and community-based sustainable forest management. These activities will benefit communities living in this zone and provide employment for many more. Reforestation and the development of sustainable economic activities will enhance the park's ability to sustain threatened biodiversity and improve the integrity of important local headwaters. The methodology for dealing with leakage monitoring and mitigation in this type of project has been approved by the Executive Board. The purchase agreement was signed in June 2006. The BioCarbon Fund will purchase emission reductions of 450,000 tCO<sub>2</sub>e.

“This project will bring crucially needed employment and income to communities around the park. These communities really need extra income, and they are currently getting it from slash and burn practices or extracting illegal wood or poaching wildlife.”

—Ricardo “Fito” Steiner, *Presidente Fundacion Pico Bonito*



# Fulfilling the Promise of Land and Forests

**“Many have argued that forests, for whatever reasons, should not be part of the climate change solution. We should use all means available today to deal with climate change—forests are one of them. This is an urgent situation that needs our urgent attention.”**

*—2004 Nobel Peace Prize Laureate, Professor Wangari Maathai,  
Founder Green Belt Movement*



It is crucial that the poorest countries and the poorest communities have access to the benefits of the carbon market. It is those countries that will feel the greatest negative impact of climate change which threatens to undermine development efforts. As this booklet has shown, through the BioCarbon Fund the World Bank has sought to enhance the access of such communities to the market. Right now 37 percent of the BioCarbon Fund's portfolio supports projects in Sub-Saharan Africa.

In Nairobi, Kenya in November 2006, Nobel Peace Prize recipient Professor Wangari Maathai took the tree planting work of the Green Belt Movement a step further when she signed an emission reductions purchase agreement with the BioCarbon Fund. The Kenya Green Belt Movement Reforestation Project will reforest 1,876 hectares within the Mount Kenya and Aberdares regions of Kenya in 2007 and 2008. The project is co-financed by Agence Française de Développement, which is also a participant in the BioCarbon Fund. From this project, the BioCarbon Fund will purchase emission reductions of 375,000 tCO<sub>2</sub>e between 2007 and 2017 with the option of purchasing an additional 150,000 tons.

The reforestation will bring important environmental benefits by reducing the erosion process, protecting the water sources, and regulating water flows. Biodiversity including plants and fauna, primates and birds will also benefit from the reintroduction of a wide range of natural tree species.

With examples like this, the BioCarbon Fund is living evidence that forest and community-based land-use projects are proving to be one of the best ways for poorer countries to access the carbon market. These types of projects operate in the interface between poverty reduction at the community level, climate change mitigation and adaptation. They are a sign of what could be.

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