



**CLEAN DEVELOPMENT MECHANISM FORESTRY
FOR RURAL POVERTY REDUCTION AND BIODIVERSITY CONSERVATION**

MAKING THE CDM WORK FOR RURAL COMMUNITIES

THE CLEAN DEVELOPMENT MECHANISM FORESTRY FOR RURAL POVERTY REDUCTION AND BIODIVERSITY CONSERVATION

In 1992, at the Earth Summit in Rio de Janeiro, the United Nations Framework Convention on Climate Change was signed and the issue of climate change came to the forefront of international environmental discourse. In 1997, the convention produced the Kyoto Protocol, requiring industrialized nations to reduce their greenhouse gas emissions 5 percent below 1990 levels, by 2012. These countries, thereby, set national standards to place caps on company emissions and establish a framework by which they may trade their emissions credits. In order to reduce emissions by least cost, the protocol provides “flexibility mechanisms”: greenhouse gas emissions trading and the Clean Development Mechanism (CDM). The CDM allows companies in industrialized nations to fulfill part of their obligation to reduce emissions by investing in greenhouse gas reduction or sequestration projects in developing countries. This grants investors emissions credits at lower cost than domestic abatement, while providing host countries with an additional source of economic investment. The CDM will go into effect following Russia’s ratification of the Kyoto Protocol, expected soon. Because tropical deforestation and other land use change contributes approximately 20 percent of global carbon dioxide emissions, forestry projects are one mechanism for achieving Kyoto goals. As forests grow, they sequester carbon from the atmosphere and turn it into woody biomass. Various types of carbon sequestration projects are eligible for the CDM. The CDM will also be used to finance energy efficiency projects.

The CDM could be a very important contributor and catalyst for rural development and ecosystem restoration in low-income countries. This brochure provides an overview of the CDM for the rural development community and demonstrates how it can benefit your work. **The Rural Development Community is called to take action** to ensure that the international rules governing the CDM, and national policies for implementation, will provide the maximum possible opportunities for rural development co-benefits, as well as mitigating climate change.



*The United States has decided not to ratify the Kyoto Protocol and therefore will not be participating in the CDM at this time. Other markets for carbon do exist outside of Kyoto, including a possible parallel US carbon market and programs to promote carbon-neutral activities outside of a crediting framework. These schemes often seek to follow Kyoto rules, but may include types of projects that are not allowed under the CDM.

CLIMATE CHANGE: WHAT IS THE PROBLEM?

“Greenhouse gases are accumulating in Earth’s atmosphere as a result of human activities, causing surface air temperatures and subsurface ocean temperatures to rise.”

-Climate Change Science, U.S. National Academy of Sciences, 2001

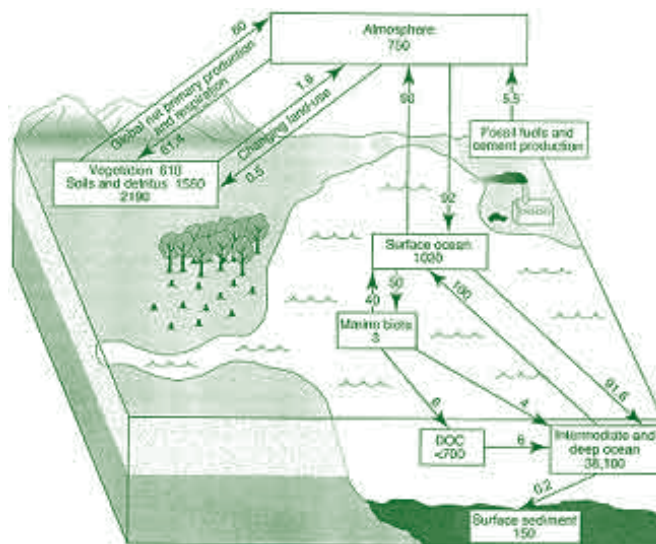
There is overwhelming evidence and international scientific consensus that climate changes caused by human activity is a real and global dilemma. During the 20th century, the warmest in the past 600 years, global temperatures increased by 1 degree Fahrenheit. The ten warmest years have all occurred in the past fifteen years, the 1990’s being the hottest decade on record.

Human activities, including fossil fuel combustion, industrial processes, and land use change, have led to rising levels of greenhouse gases, most notably carbon dioxide, in the atmosphere. The increased rate and magnitude of these gases have manipulated the “greenhouse effect,” a natural system that regulates the earth’s temperature regime, to warm the earth to such a degree that will have devastating ecological, social, and economic consequences.

The impacts of climate change go beyond warming. Experts expect more variable and extreme climatic events. Both regional and global assessments have indicated the profound impacts that climate change will have on water supplies, agricultural productivity, biodiversity and human health. Low-income nations are most vulnerable to these impacts and less able to adapt.

THE CARBON CYCLE

Carbon is cycled naturally between the earth’s atmosphere, the oceans, and the vegetation and soils of terrestrial ecosystems. Human activities emit about 8,000,000,000 tons of carbon each year, in the form of carbon dioxide. Forests play an important role by absorbing carbon dioxide and releasing oxygen to the atmosphere. Through the natural process of photosynthesis, carbon dioxide is converted to carbon and stored in the woody tissue (biomass) of the plant. The rate at which carbon is sequestered varies by the site, age, management and species characteristics of the forest.



The Carbon Cycle
Woods Hole Research Center

HOW CAN THE CDM CONTRIBUTE TO THE MILLENNIUM DEVELOPMENT GOALS?

The CDM is required, under article 12 of the Kyoto Protocol, to contribute directly to sustainable development by improving human, natural, physical, financial, and social capital in developing countries. It is required to be consistent with all other environmental conventions, including the Convention on Biological Diversity (www.biodiv.org), the Convention to Combat Desertification (<http://www.unccd.int/main.php>), and the Ramsar Convention on Wetlands (www.ramsar.org). The CDM could generate between \$150 to \$300 million/yr for forestry and rural development during the first commitment period from 2008-2012. This is a significant source of co-financing for reaching the Millennium Development Goals in low-income countries. If used effectively, the CDM will be a remarkable financial mechanism for mitigating climate change, enhancing biodiversity, and meeting the Millennium Development Goals.

The Millennium Development Goals

The Millennium Development Goals were developed at the UN Millennium Summit in 2000 as a means to improve the lives of poor people. They establish a framework by which developing countries may tackle some of their biggest development issues and industrialized nations may fund and implement such initiatives. Among the Millennium Development Goals are to:

- Eradicate extreme poverty and hunger
- Ensure environmental sustainability
- Develop a global partnership for development



HOW MIGHT FOREST CARBON PROJECTS AFFECT THE RURAL POOR AND BIODIVERSITY?

Forest carbon projects have the potential to either contribute great benefits to the rural poor and biodiversity or do great harm.

Potential Contributions of CDM Afforestation and Reforestation Projects to Reduce Rural Poverty and Enhance Biodiversity

- **Help farming communities most affected by climate change** to adapt to the stresses caused by increased climate variability and changing climates
- **Establish higher productivity** and more sustainable farming, agroforestry and forestry systems for local livelihoods
- **Provide cash income** that can be used by local people for consumption or investment purposes
- **Rehabilitate degraded ecosystems and revitalize the local services** of forests and agroforests, such as watershed maintenance, pollinator species, and soil erosion control
- Provide a resource for community **social investment**, such as community social services, etc.
- Contribute to **improved business and market organization** in local communities
- Provide **training and technical assistance** for agroforestry and forestry projects and improve environmental knowledge and appreciation
- Conserve biodiversity by **creating “ecological corridors”**, areas of forest or agroforestry cover that provide and connect critical wildlife habitats.

CDM forest carbon projects also have the potential to impose great **risks** for local communities and for natural biodiversity. Such risks may be avoided by careful project selection, design and implementation. Potential risks include:

- **Loss of ownership and access rights.** A project may deny local people their traditional rights to access land or forest products or services critical to livelihoods. Where local land ownership is informal, more powerful entities may claim land rights for the objective of receiving payments for carbon sequestration.
- **Loss of employment.** Local jobs may be lost when commercial harvesting rights are terminated.
- **Loss of local control.** Local communities may lose control and flexibility over development and conservation options and directions, if projects require rigid commitments on future land uses.
- **Threats to biodiversity.** Use of inappropriate tree species, sites, or management systems could introduce invasive species, damage wildlife habitat, or reduce water quality or supply.

WHAT KINDS OF FOREST CARBON PROJECTS ARE ELIGIBLE UNDER THE CDM?

Forest carbon projects must be either of the **afforestation** or **reforestation** type to qualify for CDM financing. Article 3 of the Kyoto Protocol defines these types as the following:

Afforestation	The direct human-induced conversion of land that has not been forested for a period of at least 50 years to forested land through planting, seeding and/or the human-induced promotion of natural seed sources.
Reforestation	The direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human-induced promotion of natural seed sources, on land that was forested but that has been converted to non-forested land. For the first commitment period, reforestation activities will be limited to reforestation occurring on those lands that did not contain forest on 31 December 1989.

Many kinds of projects qualify as afforestation and reforestation. One type of project is large-scale, fast-growing industrial plantations, for wood or non-wood production or for conservation. These projects may sequester carbon at a low cost per hectare if grown where opportunity costs for land are low. However, most such projects do little to restore biodiversity or benefit poor communities. Other types of eligible projects offer more promising co-benefits that can help to achieve the Millennium Development Goals.

Types of Eligible Projects Which Should Dominate the CDM	
Small Scale Woodlots	Develop small scale farm and community forest plantations
Forest Ecosystem Restoration and Regeneration	Restore and reforest natural forests for local use and ecological corridors
Agroforestry	Establish trees in and around crops, pastures, and underutilized spaces on farms
Rehabilitation of Degraded Lands	Rehabilitate severely degraded natural forests on community lands or farms
Agroforests / Secondary Forest Fallows	Convert pastureland and annual cropland to multi-species forest gardens and secondary forest fallows. Eg. plant shade trees in a coffee plantation.

WHAT KINDS OF PROJECTS ARE NOT ELIGIBLE IN THE CDM?

Many types of carbon sequestration activities are **NOT** eligible for CDM support at this time, although they may contribute to carbon sequestration or emissions reduction. These include: **averted deforestation** (protection of existing forests and creation of parks), **fire control** (manipulation of fire regimes to reduce greenhouse gas emissions), **forest management** (reduced impact logging, understory management, and trimming), and **soil carbon sequestration** (adoption of farming methods that increase soil organic matter which already is high in carbon).

DESIGNING A PROJECT FOR HIGH LOCAL LIVELIHOOD AND BIODIVERSITY BENEFITS

Projects with the greatest positive impacts should dominate the CDM. These kinds of projects should:

- **Ensure strong local participation.** Local people should participate actively in project planning, design, implementation and monitoring. The most successful projects are likely to be in communities with strong local organizations and participatory development programs in place that have already assessed priority livelihood and conservation needs.
- **Enhance the profitability and sustainability of new land uses.** Site-appropriate technologies, improved forest product markets, and supportive policies can help local people to generate income, livelihood and conservation benefits from new land uses and project activities.
- **Select the most suitable compensation mechanisms.** Options may include direct payments to individual producers or associations of producers, provision of social services and infrastructure, price premiums for products, financing investments to improve resource management or develop resource-based enterprises (for example, ecotourism), technical assistance and support for commercialization, or expansion of rights over natural resources.
- **Ensure transparency in investor-community partnerships.** Carbon contracts must be developed carefully and with full understanding of commitments, and of the distribution of responsibilities, benefits and risks.
- **Reduce project marketing costs and risks.** Projects need to find innovative ways to market and manage projects that involve large numbers of low-income people. Projects can “bundle” a number of diverse projects within a country to market to investors; investors can pool diverse projects to reduce their risks.
- **Brand projects as socially and environmentally responsible.** Projects can use site-labeling or certification to demonstrate to carbon buyers that they have large social and conservation, as well as climate benefits.

DESIGNING A PROJECT TO QUALIFY FOR THE CDM

The CDM was designed to be a market-based mechanism. It allows industrialized nations to invest in carbon projects in developing countries, and then apply the credit from the resulting emissions reductions or offsets towards their own targets. The applied credit is called a **certified emission reduction (CER)** and is administered equivalent to each metric ton of carbon dioxide reduced. The CDM operates according to **commitment periods**, the first being the target date of 2008- 2012. Only nations that are party to the Kyoto Protocol may participate in the CDM.

Forest carbon projects must be designed to meet several crucial criteria in order to obtain financing from the CDM. Projects must demonstrate:

- **Additionality.** Greenhouse gas reductions that occur in the project activity must be *additional* to what would have taken place without CDM involvement. For example, the use of CDM financing to establish conservation corridors when other financing is inadequate, clearly demonstrates additionality. CDM-initiated agroforestry projects are eligible if they would not occur without CDM financing because of institutional constraints, such as access to high quality seeds and other materials. The resulting carbon sequestered is “additional” because the infrastructure necessary to provide seed and extension services would not have existed without involvement of the CDM. If a project is already underway with alternative financing, it will not likely be eligible for CDM financing, although an extension of the project may be eligible. There is ongoing discussion about what kinds of co-financing may be considered additional.
- **Permanence.** The project must be designed to sequester carbon for the *long-term*. This does not mean that no harvesting can take place, but the net carbon sequestered must be of long-term duration. Because many forest carbon projects cannot guarantee permanence, the CDM is developing specific mechanisms to deal with these issues, such as temporary certified emission reduction credits (TCERs) and insurance. Projects covering large areas or a large number of producers may be able to provide some land use flexibility, while still making a secure long-term commitment to sequester a defined level of carbon.
- **Absence of leakage.** Leakage is the change in greenhouse gas emissions that occurs *outside* of the project boundary, as a direct result of the project itself. For example, if an afforestation project displaces farmers and induces them to clear a forest elsewhere, the project has leakage. Projects should be selected that have no leakage problem (for example, agroforestry projects to meet local woodfuel and construction needs may both sequester carbon and reduce pressure on adjacent forests). Alternatively, the project’s carbon accounting must reflect “leaked” emissions.
- The **project boundary** must be clearly defined and encompass all emissions and reductions of greenhouse gases attributable to the project itself. There is ongoing debate about the scale of project boundaries and how multi-plot or non-contiguous landscapes will be treated in the rules.
- Projects must contribute to **sustainable development**. As of yet, criteria for social and environmental impacts have not been decided in the CDM. While host countries have national sovereignty in defining sustainable development, some international principles may be established. Projects must contribute to **sustainable development**. As of yet, criteria for social and environmental impacts have not been decided in the CDM. While host countries have national sovereignty in defining sustainable development, some international principles may be established.

KEY PARTNERSHIPS REQUIRED FOR A CDM PROJECT

Although each CDM project is different, several key partnerships are necessary for a project's implementation. A **buyer** is a greenhouse gas emitter required under Kyoto to reduce emissions, such as a public utility, private company, or a company or agency voluntarily seeking to make its operations carbon neutral. The buyer may work through an **intermediary** who handles international contracts, payments and documentation. The intermediary contracts with a **nongovernmental organization (NGO) or public or private agency** to monitor and help execute the project. This agency works directly with the **community** to develop the necessary infrastructure and provides the technical assistance needed for project implementation and acts as an intermediary in the distribution of payments to **farmers and landowners**. There are a number of ways in which a project can be organized. For example, the Government of Kenya could organize a project and sell the credits on the international market. Local communities or NGO's could take the initiative to organize the project and market the carbon credits.

THE CDM PROJECT CYCLE

The CDM has three overseeing bodies which monitor, verify, and validate project activities. They are: 1) delegates to the Conference of the Parties (COP), 2) an executive board established by the COP, and 3) independent auditors to verify project activities. There are also designated national authorities (DNAs) which will have to certify that a given project fulfills national development goals. A number of formal steps must be taken to implement a CDM project.

CDM Project Cycle

- 1) **Design** – Project participants submit a project description to the CDM Executive Board, with evidence of how they will meet criteria and estimate carbon sequestration.
- 2) **Validation** – The project description is independently reviewed and authorized.
Registration – The project is formally accepted and registered by the Executive Board.
- 3) **Monitoring** – Data recording the project's greenhouse gas reductions is collected and archived by the agency contracted for that purpose. Several different methods for monitoring have been approved by the CDM Executive Committee. (eg. remote sensing of forest cover)
- 4) **Verification** – The monitored reductions are periodically reviewed by a third party.
Certification – The reviewer gives written assurance that during the specified time period, the project achieved the contracted level of carbon sequestration.
- 5) **Issuance** – The CDM registry administrator issues a Certified Emissions Reduction (CER) for the project activity and deducts the corresponding amount of greenhouse gases from the participating country's greenhouse gas registry.

EXAMPLES OF RURAL DEVELOPMENT AND CONSERVATION PROJECTS POTENTIALLY ELIGIBLE UNDER THE CDM

- **Creating Small Scale Woodlots: The PROFAFOR Project in Ecuador**

In the highland Andes of Ecuador, the PROFAFOR project has helped communities to establish 23,000 hectares of small scale pine, eucalyptus, and indigenous species plantations on community lands and smallholder farms. The woodlots were put in areas where they could control erosion and prevent landslides and are estimated to sequester 2.49 million tonnes of carbon dioxide during the project life-span. The project has provided local communities with 600,000 days of employment and capacity building in nursery and plantation management.

- **Restoring the Shinyanga Landscape in Tanzania**

In the Shinyanga and Mwanza regions of central Tanzania, frequent droughts, uncontrolled livestock grazing, and excessive cropping have led to rapidly declining food supplies and land productivity. The Sukuma, an agro-pastoral people native to the area, are using an indigenous method, called “ngitili,” to restore and regenerate the degraded forests. The method promotes the natural regeneration of vegetation through conservation of fallow areas and range-land and controlled livestock grazing. The method has restored 70,000 hectares of important woodland in the area. It has increased the abundance of fodder, fuel wood, and species diversity, while reducing soil erosion and increasing agricultural productivity.

- **Agroforestry: The Scolel-Té Project in Mexico**

In Mexico’s poorest state, Chiapas, small-scale farmers have switched from swidden agriculture to agroforestry, either combining crops with trees or enriching fallow lands. Interested buyers who wish to offset greenhouse gas emissions, such as the International Federation of Automobiles, then buy carbon credits from the local trust fund, Fondo BioClimático. About 17,000 tonnes of carbon have been sold at \$10/tC to \$12/tC. Fondo BioClimático support projects including live fences, shade grown coffee, plantations, tree enriched barren areas, and intercropping of forestry and agricultural crops. These activities all provide substantial income to farmers to cover the costs of implementing new farming systems, purchase foods and medicines, and improve households. The new system has utilized local knowledge to make significant contributions to agriculture, biodiversity, and livelihoods.

- **Protecting Brazil’s Atlantic Forest: The Guaraqueçaba Climate Action Project**

Due to excessive deforestation, the Atlantic forest of Brazil has been reduced to ten percent of its original size. The Guaraqueçaba Climate Action Project has sought to regenerate and restore natural forest and pastureland. Companies such as American Electric Power Corporation, General Motors, and Chevron-Texaco have invested US \$18.4 million to buy credits from the approximately 8.4 million metric tons of carbon dioxide that the project is expected to sequester during its lifespan. The project has initiated sustainable development activities both in and outside the project boundary, including ecotourism, organic agriculture, medicinal plant production, and a community craft network. The project has made significant contributions towards enhancing biodiversity in the area, creating economic opportunities, such as jobs, for local people, restoring the local watershed, and substantial climate change mitigation.

- **Red Cross Mangrove Restoration in Vietnam**

In Vietnam, tropical cyclones have repeatedly brought overwhelming destruction to vulnerable coastal communities. Because they act as a buffer interface between the land and the sea, mangrove wetlands protect against such storms by stabilizing the shoreline and preventing erosion. Since 1994, the Vietnam National Chapter of the Red Cross has been working with local communities to plant and protect nearly 12,000 hectares of mangroves in northern Vietnam. Nearly 7,750 families have been protected by the mangroves and have enhanced their livelihoods by selling crabs, shrimp, and mollusks that inhabit mangrove root systems.



CALL TO ACTION

All forest carbon projects must have positive co-benefits for biodiversity and local livelihoods.

The operational modalities for the implementation of CDM forest carbon projects are under negotiation by the delegates of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change. At the next meeting of the COP (COP-9 in Milan, December 2003), representatives will finalize the rules regarding the sustainable development criteria of the CDM. Rules on additionality, permanence, and eligible project types will also be finalized. If socioeconomic and environmental impacts are not appropriately accounted for in its structure, the CDM could pose substantial risks for local communities. It is essential that the principles and rules adopted, encourage investment in projects that benefit the poor and biodiversity.

The CDM has enormous potential to co-finance various development and conservation projects. **The rural development community must get involved in the debates and contribute their expertise and perspective to ensure that the CDM realizes its potential.** As leaders in the rural development community, you could have an influential voice in the ongoing dialogue on CDM forest carbon projects. Thus far, rural development has been little discussed and socioeconomic issues have received little attention from the CDM. Without your involvement, the CDM could finance projects for the sole purpose of carbon sequestration alone, without much needed co-benefits.

You have the opportunity to ensure that the international rules that govern the CDM will provide the maximum opportunity for rural development and conservation co-benefits. The coming months are a critical time for your participation and enthusiasm.

What You Can Do

- 1) Assess the potential for integrating forest carbon projects in your own rural development programs
- 2) Make sure that the CDM is included in development agendas as a source of co-financing for rural development and biodiversity conservation
- 3) Contact your country delegates at the Ninth Conference of the Parties (COP 9) to the United Nations Framework Convention on Climate Change, in Milan, December 2003, where decisions on the CDM will be made, and tell them the potential that forest carbon projects have for reducing poverty and contributing to the Millennium Development Goals
- 4) Contact your country strategists for the Millennium Development Goals to encourage them to build CDM projects into national policies

JOIN THE FOREST CARBON ALLIANCE

The Forest Carbon Alliance is a coalition of leaders in the rural development and environmental communities who seek to strengthen the social and environmental benefits of forest carbon projects. The Alliance is coordinated by Forest Trends (www.forest-trends.org) and The Katoomba Group (www.katoombagroup.org). We are harmonizing our expertise to educate our communities about the potential that CDM financing poses for realizing the Millennium Development Goals of developing countries. We are also coordinating our efforts to advocate with Delegates of the CDM to use the Millennium Development Goals as the overarching criteria for eligibility of individual carbon projects. We are seeking to ensure that the rules result in a predominance of projects that benefit the poor and the environment.

TO JOIN THE ALLIANCE, CONTACT:

Campaign Coordinator: Sara Scherr
Director, Ecosystem Services
Forest Trends

Please Contact: Mira Inbar
Program Associate, Ecosystem Services
Forest Trends
1050 Potomac St, NW
Washington, D.C. 20007
minbar@forest-trends.org
(202)298-3000; Fax: (202) 298-3014



ADDITIONAL SOURCES OF INFORMATION:

For more information on the Forest Carbon Alliance:

<http://www.katoombagroup.org/Katoomba/forestcarbon.htm>

For general information on the United Nations Framework Convention on Climate Change and the Kyoto Protocol:

www.unfccc.int

For general information on the Clean Development Mechanism:

www.unfccc.int/cdm

For the latest negotiating text on the Clean Development Mechanism (SBSTA18):

<http://unfccc.int/sessions/sb18/index.html>

For information on how carbon sequestration projects can conserve biodiversity and contribute to rural development goals:

Smith, Joyotee and Sara S. Scheer. Forest Carbon and Local Livelihoods: Assessment of Opportunities and Policy Recommendations. Center for International Forestry Research (CIFOR). Occasional Paper No. 37. Bogor, Indonesia. 2002.

http://www.forest-trends.org/whoweare/pdf/pubs/Forest_Carbon_Local_Livelihoods.pdf

Orlando, Brett et al. Towards the Integrated Management of Carbon Sequestration, the Environment and Sustainable Livelihoods. The World Conservation Union (IUCN). Cambridge: UK 2002.

<http://www.iucn.org/bookstore/forests-1.htm#B1195>

Swingland, Ian ed. 2002. Capturing Carbon and Conserving Biodiversity: The Market Approach. Earthscan: London.

For guidance on developing a forest carbon project:

The Prototype Carbon Fund of the World Bank.

<http://prototypecarbonfund.org/router.cfm?Page=Operations>