

# Making Carbon Finance Work for the Poor

## Integrating Social Co-benefits into Carbon Finance Operations: Lessons from the Community Development Carbon Fund (CDCF) Experience



Carbon finance is an important tool for mitigating climate change. A key challenge however is to ensure that carbon finance operations combine development dividends with emission reductions. This note focuses on the role of carbon finance in contributing to pro-poor development. It explores how social co-benefits can be effectively integrated into carbon finance operations, and highlights lessons from the World Bank's Community Development Carbon Fund (CDCF) experience. The note summarizes key findings from a recent assessment of the Fund's performance on social co-benefits and sustainable development with a view to documenting outcomes, good practice examples and lessons learned.

### Introduction

Over the past decade carbon finance has emerged as an important tool for supporting climate change mitigation. Market-based mechanisms established under the Kyoto Protocol, such as the Clean Development Mechanism (CDM), allow industrialized countries with emission-reduction commitments to implement emission-reduction projects in developing countries. CDM was intended to provide developing countries with additional financial resources for investment in clean technologies while contributing to their sustainable development priorities. However, a general concern about CDM is that it focuses primarily on emission reductions, and many CDM projects fail to deliver on development benefits.<sup>1</sup> Furthermore, there is an uneven geographic distribution of projects, with China, Brazil and India dominating the CDM market. Poor countries, especially in Africa, have found it difficult to attract CDM investment dollars due to the high transaction costs and financial risks.<sup>2</sup> Thus a key challenge in carbon finance operations is designing programs and

projects in a manner that not only reduce greenhouse gas (GHG) emissions, but also provide tangible development benefits to poor communities and poor countries.

The Community Development Carbon Fund (CDCF) was created in March 2003 to extend the benefits of carbon finance to the poorest countries and poor communities in all developing countries, which would otherwise find it difficult to attract carbon finance. The CDCF supports small scale projects that measurably benefit poor communities and their local environment, and generate Kyoto-compliant emission reductions under CDM. CDCF projects are unique because they are an opportunity for small communities in poorer countries to obtain clean water, improve health conditions, and create jobs as much as they are an investment in clean technologies that help reduce GHG emissions. The CDCF also emphasizes community dialogue and participation in project design and implementation processes.

The Fund is a public/private initiative designed in cooperation with the International Emissions Trading Association and the United Nations Framework Conven-

The Community Development Carbon Fund is one of several carbon funds administered by the World Bank's Carbon Finance Unit.



tion on Climate Change (UNFCCC). The first tranche of the CDCF is capitalized at \$128.6 million with 9 governments and 16 corporations participating in it. The two key eligibility criteria for CDCF projects are: (i) The CDCF will give preference to small scale projects that are compatible with the definition of “small-scale CDM project activities” in accordance with a UNFCCC decision<sup>3</sup>; (ii) Each project must lead to improvements in the material welfare of the community or communities involved in it. As of October 2009, the CDCF had signed 31 Emission Reduction Purchase Agreements (ERPAs) with a corresponding Emission Reduction (ER) volume of 8,939,535 ERs.

## Integrating Social Co-benefits: Key Assessment Findings

The CDCF supports projects that integrate social co-benefits with emission reductions to create “development plus carbon” credits. Co-benefits describe parallel or ancillary benefits (non-climate change benefits) of climate mitigation policy. All projects supported by the Fund benefit local communities either directly or indirectly. Benefits are typically meant to arise from the project itself: village electrification, improved air quality or increased employment and income. In some cases, where there are limited benefits or no identifiable benefits integral to the project, an additional benefits package (indirect benefits) may be put together. Examples of the types of goods and services which may be provided as additional benefits include equipment for schools, health clinics, training workshops etc. Such packages are financed by a price premium to cover the cost of the additional community benefits and a separate Community Benefits Plan (CPB) is prepared which is included in the ERPA. The CDCF portfolio currently has 19 projects with indirect benefits, 10 projects with direct benefits, and 2 projects which provide both direct and indirect benefits.<sup>4</sup>

### **Main categories of community benefits**

While the community benefits provided by CDCF projects often include a range of activities, the key community benefit activities in CDCF projects can be categorized as follows:

*Improving local infrastructure* – There are a total of 15 projects in the CDCF portfolio that provide community benefits geared towards improving local infrastructure. This includes a range of activities such as construction

of sewage facilities, potable water connections, construction and rehabilitation of local roads, renovations to local schools and health clinics, construction of parks, community centers etc. These benefits are typically provided as part of an additional CBP.

*Improving access to clean energy for heating and cooking* – 3 projects in the CDCF portfolio focus on the provision of cleaner energy for cooking and heating. These projects not only contribute to providing poor rural households with cleaner and more affordable energy solutions, they also contribute to decreasing the negative impact on health of using firewood or inefficient heating systems.

*Improving livelihood and employment opportunities* – 6 projects in the CDCF portfolio focus on employment creation and livelihood security as the primary community benefits. In most cases, the emphasis of the CBP activities is on improving the quality of working conditions for the informal laborers who typically work in these industries, such as brick workers and waste pickers. In some cases, the CDCF project seeks to directly benefit the labor force employed in the industry by enhancing sector productivity and thus increasing incomes. In addition, almost all CDCF projects have some tangential impact on employment creation at the local level as the construction and operation and maintenance of CDCF projects often entails the hiring of community residents.

*Improving access to electricity and energy efficient lighting* 12 projects in the CDCF portfolio focus on the provision of electricity or energy efficient lighting as one of the primary community benefits. This includes renewable energy projects such as micro-hydro and solar, and energy efficient lighting programs that focus on installation of compact fluorescent lamps (CFLs).

### **Welfare impacts on local communities**

Evidence suggests that CDCF projects can contribute to pro-poor development outcomes by providing a range of important co-benefits. These co-benefits include improved health and environmental outcomes; economic co-benefits such as reduced fuel costs and increased income generating opportunities, and developmental benefits such as improved rural infrastructure. For example, installing new energy efficient boilers in Moldova resulted in a significant reduction in respiratory diseases due to a decrease in local air pollution. In Nepal, installation of micro hydro plants has reduced kerosene consumption and costs. And with more reliable supply of energy, small

## Project Examples

**Nepal Biogas Program** – The project aims to provide rural households with a clean and energy efficient option for cooking by installing 162,000 small-sized biogas plants across the country. The CDM project is part of an ongoing nationwide program—the Biogas Support Program that is funded by international donors and coordinated by the Alternative Energy Promotion Center (AEPCC). Key impacts include reduced indoor pollution, enhanced agricultural productivity, reduced consumption and therefore expenditure on firewood, improved sanitation, and time saving for women. One of its most significant impacts has been on improving the health conditions of both women and children in the households by reducing respiratory illnesses and other diseases associated with using traditional cook stoves that operate with fuel wood.

**Moldova Biomass Heating and Energy Conservation Project** – In Moldova, the quality of community infrastructure had deteriorated severely in the last ten years and most public buildings such as schools and hospitals were supplied with heat from inefficient boilers. Through this project, 153 new boilers and heating systems have been installed in a number of public buildings across 116 rural communities. This project is implemented within the framework of the Moldova Social Investment Fund (SIF) project, which empowers rural communities to plan, implement, operate and maintain the heating systems. Installation of energy efficient boilers has resulted in increasing the heating period in buildings and enhancing thermal comfort. Greater comfort has improved attendance in schools. The installation of energy efficient boilers also reduced respiratory diseases and improved local air quality due to a reduction in noxious fumes from inefficient boilers. The new boilers have also decreased consumption and expenditure on fossil fuels such as coal and gas.

**Senegal Rural Area Energy Efficient Lighting Program** – The project is a component of a rural electrification plan that will provide affordable access to power for Senegal's rural communities. The Energy Efficient Lighting Program will provide energy efficient lighting in newly electrified households and buildings. The project is being implemented by Agence Senegalaise d'Electrification Rurale (ASER) who will install about 1,500,000 Compact Fluorescent Light bulbs (CFLs) within five years. These light bulbs can work up to five times longer than a conventional light bulb and result in cost savings for households as they decrease electricity use. They also help optimize the demand for energy at a time when generation capacity is limited.

businesses such as milling units, tailoring shops, and bakeries have expanded. In Argentina, the CDCF project resulted in the provision of potable water connections to rural households.

Many CDCF projects that focus on developing renewable energy and energy efficiency can be particularly appropriate for addressing energy poverty in developing countries. Nearly 1.6 billion people across the developing world remain without electricity. A significant portion of this population resides in small or dispersed communities or far from the national grid where transmission and distribution of energy generated from fossil fuels can be difficult and expensive. Producing renewable energy locally can thus offer a viable alternative.

### **Community participation and dialogue**

While the specific requirements for community participation and consultation depends on the type of community benefit, all CDCF projects involve the communities in identifying the benefits and establishing partnerships with representative community organizations or local gov-

ernment entities. The level of community dialogue and participation in projects with direct benefits tends to be high when they are embedded in ongoing programs that are based on principles of community empowerment. In the Pakistan Micro Hydro Project, the program builds on the previous successes achieved by the Aga Khan Rural Support Program (AKRSP) in micro-hydro development. Individual project development is done through a three-part dialogue process with the local communities. Once the micro-hydro plant is constructed, the community is in charge of the operation and maintenance of the systems including collection of user fees. In projects which are required to prepare an additional Community Benefits Plan (CBP), the participatory process tends to be stronger when the consultation process involves a range of key stakeholders including local government administrations and is linked to broader local development priorities.

### **Poverty Targeting**

As compared to other CDM projects, most CDCF projects are targeted towards communities with high levels of

poverty. Currently 50% of the projects are targeted toward CDCF priority countries, and of this almost half the projects are located in Africa.<sup>5</sup> Furthermore, most of the projects are targeted towards communities that either lack essential services such as roads and health care, or have a very poor quality of service delivery.

## Challenges and Lessons Learned

The CDCF experience demonstrates the viability of a co-benefits approach to carbon finance by linking climate change mitigation tangibly to the poverty reduction and development agenda. However, it also highlights some of the challenges in this approach. The key lessons that emerge from the CDCF experience are:

- Greater emphasis needs to be placed on identifying projects that have intrinsic benefits i.e. where there is a strong synergy between local development goals and achieving emission reductions. Currently there is a large unmet need for carbon finance projects that address core development priorities in poor countries. However, low emission factors and high administrative costs in many poor countries, especially in Africa, preclude them from taking advantage of carbon finance opportunities.
- There is a need to design projects in a manner that maximizes scale and sustainability, and minimizes transaction costs. This entails leveraging additional partnerships, integrating carbon finance projects within a larger local development framework, and supporting capacity building initiatives for participatory community development. The transaction costs of implementing additional CBPs in CDCF projects can be fairly high if they are designed in an ad-hoc and isolated fashion. Furthermore, the resources available through carbon revenues alone are often not enough to address critical community development needs. Projects that work on the grass-roots level also require continuous support, capacity building and follow-up. However, in many carbon finance operations, project sponsors typically have limited experience with participatory planning. Thus, embedding CBPs within a supporting policy and institutional framework is important to ensuring scale and sustainability in the delivery of community benefits.
- It is important to address procedural and regulatory constraints in the CDM. There is an urgent need to streamline procedures in the CDM project cycle and

ensure smooth flow of funds. Even though small scale projects are supposed to benefit from simplified CDM procedures, in practice this is often not the case. The delays in project registration and implementation cause resentment in the communities as their expectations are unduly raised during the initial consultations. Furthermore, in many projects, sponsors receive CBP resources as and when they generate verified ERs. The sporadic flow of funds creates a bottleneck for implementing CBP activities in a timely manner. On the regulatory front, programmatic approaches to CDM can open the door for scaling up dispersed small scale activities in areas such as energy efficiency, renewable energies for rural households etc. Inclusion of suppressed demand for energy services in CDM baselines could also better enable less developed countries to benefit from CDM.

- There is a need to strengthen attention to monitoring and evaluation of community benefits and incorporate indicators for social benefits into the project design itself. Most projects reviewed did not have robust monitoring systems for CBPs as the monitoring typically focuses on the emission reduction component of the projects. In order to make real and measurable contributions to sustainable development, carbon finance projects need to emphasize not just emission reductions, but proactively incorporate social co-benefits into project design, implementation and monitoring processes.

—**Aditi Sen, author**  
Carbon Finance Unit, 2009

**For more information:**  
Haddy Jatou Sey, Task Team Leader  
hsey@worldbank.org  
www.carbonfinance.org  
www.worldbank.org

- 1 Jessica Ayres, Maryanne Grieg-Gran, Lizzie Harris and Saleemul Huq. 2006. Expanding the development benefits from carbon offsets. London. IIED.
- 2 Gouvello, C., Dayo, F and Thioye, M. (2008, Low-carbon Energy Projects for Development in Sub-Saharan Africa: Unveiling the Potential, Addressing the Barriers. Washington: World Bank .
- 3 See <http://unfccc.int/cdm/ssc.htm>
- 4 Many CDCF projects are still in early stages of implementation. Currently only 11 projects have begun implementation of community benefits.
- 5 These are defined as (i) International Development Association (IDA) list of countries; (ii) "IDA blend" with a population of less than 75 million; or (iii) countries designated as Least Developed Countries (LDCs) by the United Nations.