Empowered lives.
Resilient nations.

International Guidebook of Environmental Finance Tools: A Sectoral Approach

Protected Areas, Sustainable Forests, Sustainable Agriculture, and Pro-poor Energy

CHAPTER 6: SUSTAINABLE FORESTRY

August 2012

United Nations Development Programme

ENVIRONMENT AND ENERGY

CONTENTS

CHAPTER 6: SUSTAINABLE FORESTRY

Introduction and Definition

Forests cover 30 percent of the earth's land surface, and lie at the heart of the global economy and the global ecosystem. Sustainable Forestry comprises the forest policies, practices and market mechanisms designed to enhance ecological, economic and social sustainability. As in sustainable development, Sustainable Forestry seeks to stem the pace of forest destruction, while meeting the needs of the present generation without jeopardizing the needs of future generations.

Forests provide multiple benefits including timber, biodiversity, livelihood, carbon sequestration, watershed catchment, recreation/ecotourism and they help prevent erosion. Deforestation impacts poverty levels, climate change, species loss, and ecological health; however net loss of forest area was reduced to 5.2 million hectares per year between 2000 and 2010, down from 8.3 million hectares annually in the 1990s. (FAO)

Sustainable Forestry embraces and overlaps the three other key areas of sustainable management included in this Guidebook:

- Sustainable Agriculture, with its emphasis on alternative practices of farming and land use,
- Protected Areas, which stresses even more refined land use policies., and
- Energy Access for Poor Communities, which seeks alternatives to fossil fuels (including forest wood burning) for the delivery of energy.

Current estimates indicate that 16 percent of total global greenhouse gas (GHG) emissions are directly attributed to the destruction of tropical forests. Collectively, the global community has become acutely aware that Sustainable Forestry (SF) must be a critical component of any attempt to reduce the rate of greenhouse gas (GHG) emissions. With their concentration of rainforest and forested area, the developing countries of the world play a critical role in SF.

Financial Tools

FINANCIAL TOOL CHOICE

As discussed in Chapter 1 above, this Guidebook focuses only on financial tools most commonly implemented in and most applicable to developing countries.

In addition, because climate change is an overarching concern in all four sectors, the efficacy of financial tools that addressed carbon emission reductions was also analyzed. Thus, this chapter did not attempt to assess innovative new financial tools, such as forest bonds, or tools with limited application, such as debt for nature swaps. Instead, the sustainable forestry analysis includes:

- Tools in most common use to finance sustainable forestry throughout the developing world: fees, loans and PES,
- Common tools that hold the most promise for sustainable forestry: taxes, and

- Tools that directly address climate change: market based mechanisms such as PES.

In Sustainable Forestry, Fees, Loans, and PES predominate. There has been significant growth in CDM and market-based mechanism (MBMs) financed projects, however, given the price fluctuations and uncertainties in the carbon markets it is unclear how quickly these projects will advance (see China, Ecuador, Guyana). Many cases (PES, CDM, VER) focus on the transfer of funding from nations or entities that do not have significant forest cover to those that do, in order to preserve the benefits of forests (carbon sequestration, biodiversity, etc.) that accrue globally as well as locally. Other tools are designed to act as brakes to maintain forest cover while regulating extraction (forestry fees and taxes.) Scale of tool implementation is also a factor in the level of success and impact. In general, tools such as MBM/PES and taxes tend to be implemented at the national government level and can impact large geographic areas (see Ecuador), while CDM, VER, fees and loans tend to be project-level tools that may bypass national governments entirely (see Bolivia).

Forest benefits accrue over time, and trees grow slowly. Any effective forestry management finance must hold a long time horizon; investing for short-term gains and other quick fixes are unlikely to succeed: payoffs need to be defined in terms of decades, not fiscal years.

Tools used in Sustainable Forestry finance include the following.

LOANS

Overview

Environmental finance loans can range from multi-million dollar World Bank investments in national energy projects to micro-finance programs that offer small loans to individuals. Loans may also take the form of credit, in which a buyer receives a product up front and pays back the cost, plus interest and/or fees, over time. Patient loan programs have proven successful, allowing borrowers to take several years to bay back relatively small amounts. In some cases, long-horizon repayment terms have turned some loans essentially into grants, particularly in the Sustainable Forestry area. Some of the challenges with implementing a loan include the following.

Setting loan amounts and terms: Loans are a financial investment and thus require sophisticated contractual agreements that must be appropriate to the potential borrower and attractive to the lender. Like fees, it must be determined in advance how much a borrower can and is willing to accept in debt, and how long they can/will take to pay it back. Lenders must determine the level of risk they are willing to assume, the interest loan rate or fee, and what return on investment they need in order to maintain a sustainable program.

Defining collateral: Loan programs normally require collateral to help guarantee repayment and reduce risk. Collateral is a borrower's pledge of specific property against which a loan is made. The property could be a home or any other item that has equal or greater resale value than the original loan. In developing countries, many borrowers have no collateral to offer, which raises the level of risk to the lender.

Risk pooling: Because the availability of collateral is unlikely in developing countries, some borrowers have formed risk pools, which combine the uncertainty of individuals into a calculable risk for large groups. While this is a complicated approach that requires the cooperation and participation of several borrowers (often through the form of a local cooperative), it can reduce risk for both the lenders and borrowers.

Delinquent payments: Delinquency is always a concern for a lender and terms need to be established for when a borrower is delinquent and what the penalties may be before a loan program is implemented. Lenders must also develop protocols for repossession of products when buyers become delinquent.

Developing financial infrastructures: Because so many developing countries lack local banks to provide credit and accept payment, grassroots financial infrastructures frequently need to be developed before loan programs can be launched.

Sustainable Forestry and Loans

Loans can be applied successfully in forestry projects, although the best examples seem to center on small amounts (less than $500,000) with patient terms (over five years) and low to zero interest (Bhutan, India). In general, forest communities cannot provide collateral and like Pro-Poor Energy finance, forestry loan projects require significant capacity building, and in the case of sustainable forestry even longer repayment horizons. Because of the growing time it takes from sapling to harvest, especially with hardwoods, major lenders may need to consider the possibility that loans will never be repaid and are more like investments in long term health and well being of forests, communities, and country/company/entity reputation (China). At the very least, because of the low income levels of so many forest dwellers, lenders will likely need to set extremely low (India) to zero (Bhutan) interest rates which means accepting negative returns from the beginning.

Small targeted loans may be the best financial bet when investing in communities that will need extensive capacity support, can provide no collateral, and cannot afford interest or short term payback periods. However, investors should be patient and willing to accept a small financial return but a larger social and environmental impact. Thus, private sector, social impact investors may be the best option for financing sustainable forests in the future.

TAXES

Overview

Taxes usually require large-scale, national-level implementation and developing countries face many challenges when they attempt to establish taxes. Taxing their own citizens can be extremely difficult if most workers are employed in agriculture or in small, informal enterprises and their earnings are largely "off the books." At the same time, tax development and administration requires experienced and highly trained staff, and ideally computerized systems to collect statistics and track revenue. Even those taxes that may be relatively easy to implement because the collection mechanisms are already in place (e.g. departure taxes where revenue is collected at the airport from departing tourists), may still face opposition from a legislature that is beholden to its own special interests or businesses that are wary of losing customers.

Some of the other challenges with implementing taxes include the following.

Collection and distribution: Because most developing countries lack sophisticated tax systems to track and monitor the collection and distribution of funds, monies often get diverted to non-intended uses. Taxes also fall prey to competing legislative agendas that seek to reassign revenue to other areas.

Relying on future revenue: Reliance on a steady stream of tax revenue can be risky if the tax amount is fixed and not structured with a formula to respond and adjust to economic fluctuations and inflation.

Taxes should be implemented so that they can rise and fall as necessary in order to guarantee a certain level of income.

Taxes in lieu of funding: Once a tax is implemented there is a risk that funds originally assigned to environmental sustainability will be redirected elsewhere. If tax revenue falls the environment will suffer.

Financial auditing: Most developing countries do not have the capacity to perform the necessary financial audits to track revenue generation and distribution.

Sustainable Forestry and Taxes

Taxes, specifically fossil fuel taxes, would seem to be an ideal way to generate revenue for forest management programs and improve livelihoods of forest dependent inhabitants. Yet, like Protected Areas, there are few examples of effective implementation of forestry-supporting taxes, particularly over time. Taxes are challenging to levy, as they require either strong central government support (in less democratic nations) or stakeholder consensus to pass (or to be revised) in legislatures. Even once imposed, tax revenues do not always flow to the intended beneficiary. The jurisdiction (federal, regional, local) imposing the tax must have some existing entity on which to levy the tax. In the case of Costa Rica, that was the oil refining industry and gas stations.

FEES

Overview

Fees can be self-assessed or imposed on others. As presented in the case studies below, explaining and demonstrating the value of the fee to the payer has been shown to reduce resistance, especially if the payer perceives a benefit from the fee. While fees are a useful stream of revenue, they are rarely sufficient to cover the full costs of a project (e.g. community forest fees). Some of the challenges with implementing a fee include the following.

Setting/determining the fee: While seemingly straightforward, it can take years to establish stakeholder support to implement a fee. Determining the appropriate amount a potential user will pay may demand significant research, require stakeholder input, and remains an inexact science at best. Fee analyses such as willingness-to-pay studies are time consuming yet critical to setting the right amount and maximizing revenue.

Collecting the fee: A fee collection infrastructure should be established that ensures transparent and accurate accounting of revenue.

Ensuring distribution of monies for originally intended purpose: As with taxes, when fee revenue is delivered back to a central government, it can be redirected to other purposes. A local third party organization established to manage the fee collection and distribution can help ensure that the conservation target is reached.

Corruption/crime can threaten collection/distribution: Fees can generate millions of dollars of revenue and are susceptible to corruption and crime. Again, implementing an accountable and transparent system can help support a fee system of collection and distribution.

Sustainable Forestry and Fees

The imposition of fees upon forest service users, if properly implemented, can be an effective way of raising revenue from those who benefit most directly from the resource, such as timber companies (Cameroon). Fees are most effective if locally administered and monitored; the more remote the fee collection and distribution (e.g., by regional or central governments), the less direct benefit accrues to forest communities. As with taxes, fee revenues can be diverted from their original intent; community groups or NGOs need to agitate and provide oversight to ensure that the original intent is honored. As in Sustainable Agriculture, association fees collected from members (as in Nepal's Community Forest Groups), even when widely adopted, often underwrite only a fraction of the true cost of forest preservation or of the association's total activities.

MARKET BASED MECHANISMS/PES

Overview

Market-based mechanisms are generally large-scale, voluntary or involuntary, with potential for long-term financial sustainability, but subject to market uncertainty. In the new frontier of applying value the future price of carbon, risk is inherent.

In contrast, PES transactions focus on behavior change at the individual level (e.g., not farming on protected land) that maximizes environmental protection. Overall, considering the time and money invested, Payments for Ecosystem Services and Market-based Mechanisms have been slow to achieve anticipated revenue levels.

Some of the challenges with implementing MBM and PES include the following:

Global vulnerability: Market-based Mechanisms' revenue flow is vulnerable to global trends and interests (such as droughts or a decrease in global tourism) and drastic price fluctuations as is evidenced by the carbon market over the past decade. Regulatory changes and international accords (e.g., Kyoto Protocol or REDD+) can create or destroy mechanisms for the trade of ecosystem services, which are dependent on agreed-upon certification standards. The vagaries of the international carbon and other ecosystem credit markets (voluntary and involuntary) lend a high degree of risk and uncertainty to these types of financing.

Complex tools: MBMs and PES are complex to set up and run. They require an international infrastructure, since the revenue stream usually flows from developed to developing countries. They are financially sophisticated (but are often applied in countries that lack financial capacity) and normally incorporate third party involvement for certification, verification and monitoring.

High risk: Because of the vulnerabilities and complexity, both MBM and PES are seen as potentially risky endeavors, especially when applied to developing countries that may not have the capacity to track and ensure results. In response, PES and MBM projects often request additional reporting requirements, creating yet another hurdle for developing countries.

Sustainable Forestry and MBM

The vision of international markets providing needed capital to preserve forests has not always been realized and there are few large successes. Some promising tools evaluate the ecosystem services of a forest and attach that value to a tradable security (Guyana). These tools have great potential to generate revenue for and from Sustainable Forest Management programs. However, market-based mechanisms

are subject to the risks of price fluctuations and changes in international policy; they have yet to prove their long-term value for sustainable forestry in most cases (Guyana, Ecuador, China).

As of December 2011, international carbon markets are under strain, and their instability will affect current and future effectiveness of market-based mechanisms to support sustainable forestry. A World Bank report in June 2011 confirmed that only $1.5 billion in global carbon credits was traded in 2010, the lowest amount since the market began in 2005.

In addition, the success of sustainable forestry has been somewhat hampered by forestry credits being banned from the European Union Emission Trading Scheme (EU ETS) and some national trading schemes as well. While they are acknowledged under the Clean Development Mechanism (CDM), they only account for reforestation and afforestation projects and are far from being competitive with other types of CDM projects. With carbon sequestered by trees being considered 'temporary', as forests will at some point cease to exist, they have a disadvantage to other projects and make up only 0.1 per cent of proposed projects under the CDM.

However, the growth of the voluntary market could be a significant turning point. With forestry credits being much more competitive on this market, the percentage of them is much larger than under the CDM and demonstrates the existing appetite from the private sector. Good examples include Bolivia below, and Sierra Gorda in the Protected Areas Chapter.

Sustainable Forestry and PES

As stated above in the Protected Areas Chapter, high expectations for revenue generation from PES and market based mechanisms, especially as an economic benefit for rural, forest dwelling communities, have been slow to come to fruition. Long project life cycles need to be taken into consideration when choosing PES as a finance mechanism and many factors affect the multi-year life cycle of such complex projects including:

- Technical and business skills gaps at the state, regional and local level;
- Availability of financial and technical support from outside organizations to build capacity and provide project viability assessments;
- Arduous nature and cost of forest certifications;
- Processing and approval time to manage governmental policy and regulations for land tenure/land use rights changes and equitable compensation structures;
- Establishing authorized community representation that reflects community demographics;
- Establishing legal enforcement capability, roles, and responsibilities;
- Setting up a Trust fund or mechanism to oversee and manage revenue collection and disbursement.

The skills and knowledge needed to design and implement a PES project are transferable for REDD+ and other climate change incentive mechanisms, which can bring additional funding opportunities. A description of REDD+ has been included in the box below. Because REDD+ does not fit the tool choice criteria – it has not been widely implemented – it was not included in this *Guidebook*.

WHAT IS REDD+?

Reducing Emissions from Deforestation and Forest Degradation (REDD) is an effort to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. "REDD+" goes beyond deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks. An integral part of REDD is the development of a payment system that goes directly to landowners to prevent deforestation.

It is predicted that financial flows for greenhouse gas emission reductions from REDD+ could reach up to US$30 billion a year. This significant North-South flow of funds could reward a meaningful reduction of carbon emissions and could also support new, pro-poor development, help conserve biodiversity and secure vital ecosystem services.

Source: United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries, www.un-redd.org

Challenges

FOREST CERTIFICATION

Various types of forest certification are often critical to the implementation of certain financial tools, especially PES, MBM, CDM and VERs. Forest certification is a system of voluntary standards used to demonstrate the practice of Sustainable Forestry. The standards typically require that environmental damage from tree felling be minimized, and establish criteria for the number and nature of trees that can be felled. Reforestation and social and economic requirements also can be included. Several sustainable forest management certification systems exist, including the Forest Stewardship Council (FSC) and those endorsed by the Programme for the Endorsement of Forest Certification (PEFC). FSC standards have specific criteria for responsible forest management, including an emphasis on environmental health, the amount of clear cutting and the use of chemical pesticides.

Certification adds necessary cost to Sustainable Forestry. According to the 2010 State of Sustainability Initiatives report, "Observed examples of direct certification costs—e.g., certification, inspection and auditing fees—for sustainable forestry initiatives were found to range between $0.12 and $2.00 per hectare, with evidence of certification costs decreasing significantly with the size of the certified forest." (Cole et al., 2010 p.51)

In addition to the SF Certification, forestry projects that wish to pursue carbon credits face additional requirements. In order for a project or product to qualify for CDM, a rigorous monitoring process must be implemented, strict rules and guidelines must be followed and complicated deals, including terms and prices, between buyers and sellers need to be negotiated.

VERs do not have to follow the same requirements as CDM, however, to maximize revenue and the highest possible (premium) price per ton of CO2, many project developers that generate VERS are following the same guidelines as CDM and using the same third party certifiers such as the Gold Standard. Gold Standard certification is an internationally recognized best practice methodology that provides a high quality carbon credit label for both Kyoto and voluntary markets. Thus the challenges of

implementing both CDM and VERs are virtually the same and require baseline studies, long-term monitoring and expensive third party certification.

Overall, forest certification requires significant financial outlay, which in turn most often requires external support, expertise and management, further raising the expense.

PRIVATE INVESTMENT'S ROLE

Public investment will not be sufficient to meet forestry goals. The UN Environmental Program has called for private investment of $40 billion per year in order to meet the goal of cutting deforestation in half by 2030. (UNEP) However, few private investors will be attracted to the sector while the carbon markets are so uncertain. If the carbon markets fail, or the price of carbon drops to an unsustainable level, then large forestry projects are in jeopardy. As a result, the majority of private investment may fall back to small impact investors and NGOs working with specific communities to help develop revenue-generating projects that support forest protection and regeneration.

As discussed above and in the Agriculture Chapter, sustainable forestry may want to further engage impact investors who are more willing to accept longer-term repayment horizons, forgo collateral and accept social and environmental impacts as viable returns on investment. In addition, unlike other conventional investors, impact investors frequently take a hands-on approach, assisting with building capacity.

DECENTRALIZED AUTHORITY

As each country in these forested regions realizes its responsibility for effective resource management, unifying themes have emerged. Among these themes is the recognition that in order to achieve more effective SF, countries need to rapidly adopt a policy of decentralization. In effect, the central authority, usually at the national government level, would devolve management of forest resources to the regional, sub-regional, community and ideally to the village level. It is well established that stakeholders at these decentralized levels carry out sustainable forest practices that not only reverse resource degradation, but also enhance the livelihoods of indigenous forest dwellers. However, with decentralization comes the need for capacity building, which adds time and cost to any project.

CORRUPTION

The best-designed investment system is no match for corruption, and the enormous revenue potential of logging and other extraction industries is an incentive to "cheat." Forestry ranks among the world's most corrupt sectors, mostly in terms of illegal logging. Countries where forestry is a large economic driver also rank poorly on Transparency International's Corruption Perceptions Index. Corruption threatens Forest Certification, which in turn jeopardizes the success of financial tools such as PES and the carbon based mechanisms.

Case Studies

Below is a list of case studies included in this chapter.

Tool	Country	Title
Loan	Bhutan	*Organic Lemongrass Oil Certification Supports Sustainable Forestry Practices and Boosts Village Revenues*
Loan	India	*Soft Loan Supports Forests while Alleviating Poverty*
PES	Ecuador	*Paid to Preserve: Ecuador's Programa Socio Bosque Incentivizes Landholders to Halt Deforestation*
PES/VER	Paraguay	*Oil Industry Service Provider Seeks Carbon Neutrality by Funding Preservation of Paraguay Rainforest*
Tax	Costa Rica	*A Little Goes a Long Way: Small Percentage of Fuel Tax Pays for Sustainable Forestry*
Fee	Cameroon	*NGO Oversight Required To Ensure Annual Forestry Fee Revenues Reach Village Level*
Fee	Nepal	*Community Forest Fee is Popular but Not Enough*
MBM/PES	Guyana	*Mainstreaming PES: Experimental Ecosystem Service Certificate (ESC) Debuts*
MBM/CDM/ VER	Bolivia	*CDM/VER-Approved Investments Fund Saplings in Bolivia*
MBM	Ecuador	*Paying Not To Extract: Yasuni Carbon Bond Initiative*
CDM/Loan	China	*Restoring Degraded Land: The World's First Clean Development Mechanism Forest Project in Southern China*

Summary of Findings

- Sustainable Forestry efforts need to focus on providing alternative sources of income and livelihood for indigenous populations that can establish revenue streams and attract more mainstream financial tools in the form of loans and equity investment. Attracting private sector finance in the form of impact investment should be pursued.

- There are a number of challenges facing sustainable forestry finance and not many successes on a large scale when grants (including unfunded government finance) are removed from the analysis. In addition, as the carbon market continues to evolve, the levels of sophistication required to implement and the complexity of maintaining and monitoring may limit the application of these tools.

- Small projects that rely on patient loans, minimal interest and no collateral requirements may be the best option for sustainable forestry, however the impact is small. Determining how to bring this approach to scale is the challenge.

- Investors may need to accept that returns from forest projects will be minimal and possibly negative and be willing to accept social returns instead.

- For programs that have already achieved CDM accreditation but are concerned about the viability of the market, pursuing VER certification can be an important step towards re-entering the market at a more stable point.

- Because fees are most often generated by the forest communities, achieving a sustainable level of financial support has proved difficult.

- Governments that have the capacity to do so (i.e., Costa Rica) should consider a sustainable forestry tax that can be attached to a good or service (such as hotels or petroleum products) or to tourists and other visitors (such as a departure tax).

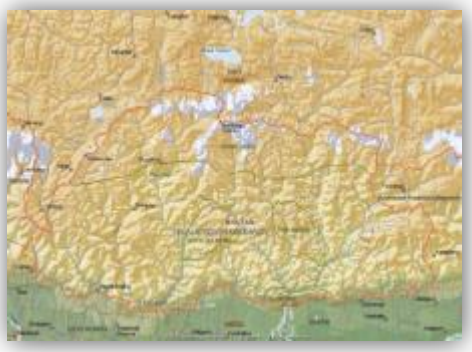
- PES programs where forest dwellers are paid directly to protect their forests have been proved successful, however, the reliance on government funding with no additional revenue generating tools (e.g., a tax) to subsidize the costs, is unlikely to be sustainable over the long term.

- The relationship of sustainable forestry finance and the fossil fuel industry is complex but represents multiple opportunities. From a fossil fuel tax in Costa Rica to an oil industry service provider funding forest preservation, preserving the carbon embedded in forests represents a trade-off between near and long-term interests. Most interesting is the “pay us not to drill” model being tried in Ecuador’s Yasuni Carbon Bond Initiative; it remains to be seen whether this project will succeed as the revenue raised has only been a fraction of what is needed.

SUSTAINABLE FORESTRY CASE STUDIES

Sustainable Forestry: Loans

Organic Lemongrass Oil Certification Supports Sustainable Forestry Practices and Boosts Village Revenues



Case Study: ***Bio-Bhutan***

Loan Type: ***Loan***

Country: ***Bhutan***

A key source of livelihood in rural Bhutan is the collection of Non-Timber Forest Products (NTFP). Bio Bhutan, a private enterprise, identified a high potential for income generation and sustainably managed forest resources through the organic certification of lemongrass oil. Bio Bhutan received a loan of $163,655 from the NGO Helvetas (Swiss Association for International Development) for operational and certification expenses to develop and export organic lemongrass oil (LGO) to the international market. Helvetas recognized both the economic and high social value of this project and extended very favorable loan terms to Bio Bhutan. The loan repayment period is six years with no collateral required and is an interest free loan. The loan was paid in full six months before the end of the repayment period.

Financial Instrument

Funding for LGO certification was financed by a loan from Helvetas in January 2005 for $163,655. The funding timeframe was January 2005 to December 2011. Funding for LGO certification is part of the on-going Helvetas Bhutan Country Program, currently funded through 2012. Bio Bhutan received the funding and is responsible for contracting with INDOCERT, an Indian-based internationally recognized organic certification agency. Annual cost for INDOCERT certification is $3,974. The balance of the loan amount was allocated for production, administrative and marketing expenses, including:

- Maintenance of the production facility.
- Labor expense to deliver raw materials.
- Administration staff expense.
- The cost to develop packaging.
- Export licensing fees.
- Regulatory compliance fees for the EU and United States markets.

Helvetas determined this was an exceptional project for sustainably managed forests and poverty alleviation. As a result, Helvetas extended very favorable loan terms that had never been granted to any loan recipient before. These terms were:

- A repayment period of six years.
- The loan was interest free.
- No collateral was required.

The loan was paid in full six months early with no late payments during the course of repayment.

2005-2011: Support to Develop Financial Instrument

As an integral part of Bhutan's Millennium Development Goals (MDG) and its 10th Five Year Plan, the Community Forestry Program aims to empower rural communities to sustainably manage local forest resources and contribute to poverty alleviation, income and employment generation in rural areas. A key source of livelihood in rural Bhutan is the collection of Non Timber Forest Products. There is a high potential for income generation and sustainably managed forest resources through the organic certification of lemongrass oil in Eastern Bhutan's rural areas. A program has been implemented to offer incentives to rural households through higher premium prices and increased market share of certified lemongrass oil (LGO). Partners include: Bhutan's Social Forestry Division of the Department of Forests and Park Services, Bio Bhutan (BB), a private enterprise based in Bhutan, the Swiss Agency of Development and Cooperation (SDC), the Swiss-based NGO Helvetas (Swiss Association for International Development), and the Asian Development Bank Institute (ADBI). The key to this program is the certification of LGO.

Results

Revenues: Exports of organic certified LGO by Bio-Bhutan increased from 250kg in 2005 to 4 metric tons in 2008. As of 2007, annual revenue from LGO was $170,000. In 2006-2007, average seasonal net income for distillers in the organic lemongrass management group was $716, compared to $208 for distillers in the conventional group.

***Environmental Impact*:** Through intervention and regular training, guidelines for the sustainable management of lemongrass have been established and now form part of the Community Forest Management Plan (CFMP). Before the development and implementation of CFMPs, local people believed that forest fires stimulate the growth of lemongrass. The education component of CFMP taught local inhabitants that forest fires do not stimulate growth of lemongrass. As a result, there has been a significant decrease in the amount of forest fires.

Community-Level Impact: Organic management of lemongrass resources significantly lengthened the duration of seasonal employment. Bhutan is considering the establishment of a Lemongrass Cooperative to address equality of workers. The Bhutan Ministry of Agriculture is currently developing a model for Bhutan-based certification.

Guidance for Replication

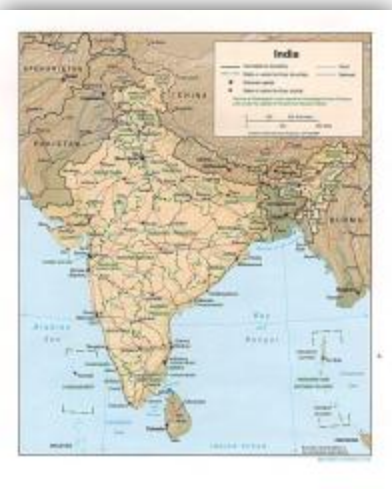
- The lack of a domestic organic certification agency in Bhutan results in higher costs, since it necessitates bringing in foreign inspectors.
- There was no clear understanding of EU and United States import regulations, which delayed export revenue.
- An inefficient cost-of-production analysis led to a double charge for some processes, increasing costs unnecessarily.

- There was little awareness of competition from neighboring countries producing similar organic LGO.
- Community Forest Management Plans revealed major discrepancies in compensation rates between men and women rural farm workers.
- Bhutan could reduce firewood consumption at LGO processing facilities by introducing renewable forms of energy, especially solar installations.

Further Information: http://www.adbi.org/discussion-paper/2008/05/22/2541.bhutan.millennium.development.goals/

Sustainable Forestry: Loans

Soft Loan Supports Forests While Alleviating Poverty



Case Study: ***Uttar Pradesh Participatory Forest Management and Poverty Alleviation Project (UPPFMPA)***

Loan Type: ***Loan***

Country: ***India***

In March 2008, the Japan International Cooperation Agency (JICA) under its Official Development Assistance (ODA) program loaned the Indian state of Uttar Pradesh $160,000 to fund the Uttar Pradesh Participatory Forest Management and Poverty Alleviation Project (UPPFMPA). JICA issued an Environmental Soft Loan (ESL), which is a special purpose loan that specifically supports programs that address forestry degradation and poverty alleviation, primarily in developing countries. The ESL carries with it special terms, including: below market interest rates, extended loan repayment periods, and enhanced loan grace periods. Under terms of the UPPFMPA ESL, the interest is 0.55 percent, with a repayment period of 40 years and a grace period of 10 years.

Financial Instrument

The Japan International Cooperation Agency (JICA) made a loan of $160,000 to UPPFMPA under its Environmental Soft Loan (ESL) program after determining the goals of UPPFMPA were consistent with the two priorities of JICA's Medium-term Strategy of Overseas Cooperation: 1) regional development that benefits the poor and 2) response to environmental Issues.

UPPFMPA qualified for the ESL because its mission is to help alleviate poverty through sustainable forest management policies by local stakeholders.

The ESL carries very favorable terms, including:

- A below-market interest rate of 0.55 percent.
- An extended loan repayment period of 40 years.
- An enhanced loan grace period of 10 years.

The schedule of the loan is 2008-2016, followed by a two-year evaluation period, ending in 2018.

The executing agency for the loan is the Forest Department of the State of Uttar Pradesh. The total loan proceeds are sent directly to the Forest Department, which in turn disperses the loan proceeds to the UPPFMPA Project Management Unit (PMU). Within the PMU, the Finance Controller is responsible for all oversight and auditing of loan amounts.

2008-2016: Support to Develop Financial Instrument

Within recent years, India has experienced many dynamic changes in forest management policy. One of these key changes has been the major shift to a decentralized and people-oriented forestry policy. India recognized that rapid destruction of forest resources for timber, fuel wood, cropland and urbanization had a direct impact on the livelihoods of the rural poor. India also recognized that local communities need to be involved in the development of sustainable forest management systems. Under its 1988 National Forest Policy, The Ministry of Environment and Forest created a 20-year plan for forest protection and conservation known as the National Forest Program-India (NFP). One of the central goals of NFP was to bring 33 percent of the country's total area under forest/tree cover by 2020.

In order to ensure sustainable use of forests to meet local needs while ensuring environmental sustainability, the Ministry created the Joint Forest Management Program (JFM) in 1990. The plan laid out the guidelines for joint management of forest resources by the state government and the local people, who would share the responsibility of managing the forest and the benefits accruing from that responsibility. The central idea behind JFM is that local women and men, who are dependent on the forests, have the greatest stake in sustainable forest management. Under the plan, village communities are entrusted with the protection and management of nearby forests. These communities are required to establish forest protection committees, village forest committees and village forest conservation committees. In 2008, the Northern Indian State of Uttar Pradesh established its eight-year Uttar Pradesh Participatory Forest Management and Poverty Alleviation Project (UPPFMPAP). The project is a three-phased (preparatory, implementation, and closing) program to restore degraded forests and to improve the livelihoods of local forest dependent people by promoting sustainable forest management thereby improving the environment and alleviating poverty. To support this effort, the Japan International Cooperation Agency (JICA) agreed to provide Official Development Assistance (ODA) under its Environmental Soft Loan (ESL) program.

Results

Revenues: In 2008, the JICA made a loan of $160,000 directly to the Indian State of Uttar Pradesh to implement the UPPFMPAP. The loan monies will fund a series of livelihood enhancement income-generating activities.

***Environmental Impact*:** As of May 2010, twenty forest divisions spread over 14 districts, comprising 80,000 hectares have implemented Joint Forest Management guidelines with the participation of local people.

Community-Level Impact: Livelihood Enhancement Activities (LEA) proposed in the project are directed towards training of rural workers to increase their skills. These activities include:

- Medical care camps.
- Promotion of indigenous social medical practitioners.
- Development of peer health groups.
- Development of village agricultural extension officers.

- Development of village masons for better housing.
- Promotion of micro-insurance.
- Extension of school buildings.
- Construction of JFMC office buildings.
- Small-scale infrastructure improvement such as improvement of link roads.
- Promotion of biogas and improved stoves.
- Promotion of solar lamps.
- Installation of drinking water facilities.

The project also provides for the implementation of Income Generating Activities (IGA) through the 3,760 established Self Help Groups. There are three types of IGAs.

1. Forest-based IGA/micro enterprises including:

   - Scientific harvesting of cane for processing into cane sticks and furniture,
   - Harvesting of sabi grass for processing into ropes and bale making for the paper industry, and
   - Scientific harvesting of honey and wax for processing into filtering agents.

2. Natural resource-based IGAs/micro enterprises, including:

   - Bee keeping,
   - Developing nurseries, and
   - Production of compost and vermicompost.

3. Non-natural resource-based IGAs/micro enterprises, including:

   - Carpet making,
   - Pottery production, and
   - Agrabatti (incense) production.

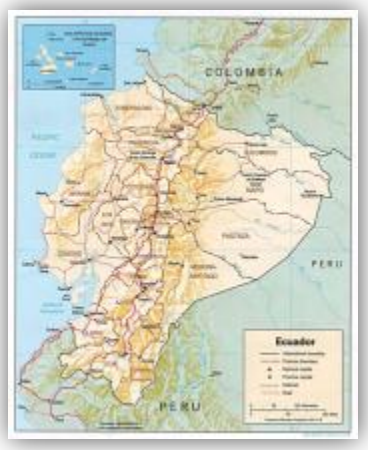
Guidance for Replication

- In order to implement JFM, it was important to prepare, in comprehensive and easy-to-understand language, guidelines that indicate the scale of JFM and a system for getting people to take responsibility.
- Although this is a statewide program, the most beneficial social impact was realized by concentrating efforts in the Terai region, which has a higher rate of poverty than the state average.
- Applications for environmental soft loans need to directly address the goals of the funder, in this case both environmental and pro-poor conditions.
- Soft loans from overseas governments can be jeopardized by domestic events; future loans from JICA may be imperiled due to internal funding needs following the earthquake/tsunami in March 2011.
- Soft loans add to the debt burden of over-stretched regional/state governments, and may have political repercussions.

Further Information: http://www.uppfmpap.org/about.htm

Sustainable Forestry: Payment for Ecosystem Services (PES)

Paid to Preserve: Ecuador's Programa Socio Bosque Incentivizes Landholders to Halt Deforestation



Case Study: ***Programa Socio Bosque (The Forest Partner Program, PSB)***

PES Type: ***Trust Fund***

Country: ***Ecuador***

The government of Ecuador has endeavored to develop policies and programs that arrest the country's rapid deforestation rate while enhancing the livelihoods of forest dwellers and members of indigenous communities in the affected regions. The Progama Socio Bosque (PSB), launched in 2008, is a pioneering program in Latin America and acts as an incentive mechanism to preserve forest resources and fight poverty. The program provides a direct monetary incentive of $30 per hectare per year to all participants. From 2008 to 2010, over 64,000 beneficiaries have received payments totaling $5.9 million, and 800,000 hectares of forest are under protection.

Financial Instrument

In September 2008, the government of Ecuador established the national *Programa Socio Bosque* (Forest Partner Program, PSB) as a component of its new forest governance model. Ecuador's Ministry of Environment (MAE), as the National Forest Authority, is implementing PSB in an effort to manage the country's forest resources in a sustainable fashion. *Programa Socio Bosque* has three main goals:

1. To conserve 4 million hectares of forests within 7 years (2008-2015).
2. To reduce the deforestation rate by 30 percent by 2013.
3. To enhance the livelihoods of 500,000 to 1 million members of indigenous communities, peasant communities and other local inhabitants.

In order to accomplish these goals, PSB will provide a direct monetary incentive of $30 per hectare per year for up to 50 hectares to all participants who enter into an agreement to conserve and protect their forest lands. PSB is a voluntary arrangement in terms of participation. Forest landowners, both individual

and communities, sign an agreement, which is valid for 20 years. PSB is publicly financed through fiscal funds from the general State budget. The fiscal funds are held in a national trust fund. Payments are made two times per year directly from the trust fund into the bank account of the beneficiary.

Under the program, all individuals, legally established communes, indigenous communities or nationalities that have the appropriate title deeds to their land may participate in the program.

Programa Socio Bosque is financed though allocation of public fiscal funds from the general Ecuadorian State budget. Each year, the government of Ecuador makes an assessment of various programs and prioritizes them according to the benefits derived. Because the government of Ecuador recognizes the high social and environmental value of *Programa Socio Bosque*, PSB has received a high priority since its inception and has been allocated the following amounts:

- 2008: (Inception) $1 million.
- 2009: $3 million.
- 2010: $4.5 million.
- 2011: $6 million.

These allocated funds are held in a national trust fund with the Ecuadorian National Bank, which disperses incentive payments to PSB participants two times a year directly into the beneficiary's bank account.

Under terms of the signed agreement between PSB and the participants, the incentive is $30 per hectare per year for the first 50 hectares and less per hectare thereafter. For example:

- 1 to 50 hectares = $30 per ha
- 51 to100 hectares = $20 per ha
- 100 to 500 hectares = $10 per ha
- 501 to 5000 hectares = $5 per ha
- 5,001 to 10000 hectares = $2 per ha
- 10,000 hectares = $0.50

From its inception in 2008 to 2011, the Government of Ecuador has invested $14.5 million into the national trust fund. Seventy percent (~ $10.2 million) of this amount went for incentive payments to PSB beneficiaries. Twenty percent (~$2.9 million) was used for monitoring conservation areas across the country and the remaining 10 percent (~$1.4 million) was used for operating expenses. The government of Ecuador estimates that $60 million will be needed annually to fund the incentive plan for the four million hectares of protected forest land under PSB.

2008-ongoing: Support to Develop the Financial Instrument

PSB is a voluntary program whereby participants agree to set aside land holdings and refrain from deforestation practices. In order to enter the program all participants are required to provide documents including:

- Legible copies of identity cards,
- Proof of active bank account,
- Legible copy of deed proving registration with the land registry,
- Geo-referenced map of the area, and
- An investment plan indicating how incentive payments will be spent.

After all documents are compiled, they are submitted to MAE for processing. Upon completing MAE registration processing, all participants enter into a signed agreement. At that point, incentive payments commence and are deposited directly into the participant's bank account twice a year. The agreement is valid for 20 years.

Under the terms of the agreement, all participants are required to submit a report of accountability prior to each payment. The report indicates expenditures for implementing activities defined in their previously submitted Investment Plan.

In order to ensure compliance of forest use, areas under agreement are monitored by satellite observation and on-site sample checks.

PSB is publicly financed by allocated fiscal funds from the government's general budget. It should be noted that Ecuador's new Constitution, passed in 2008, recognizes the inalienable rights of nature. The document affirmed that nature: "has the right to exist, persist, maintain and regenerate its vital cycles, structure, functions and its processes in evolution." (NYT)

At the beginning of PSB in 2008, the government established a national trust fund with an initial investment of $1 million. Subsequent investments have been allocated to this fund. All incentive payments are made from the fund.

Results

***Revenues*:** As of December 2010, there were a total of 988 existing agreements with 64,119 beneficiaries. Both the number of agreements and beneficiaries exceeded the goals set in 2008, which were 574 and 50,000 respectively by the end of December 2010.

The total amount of incentives paid to those beneficiaries in 2010 was $3.3 million. The total amount paid to beneficiaries from 2008 to 2010 was $5.9 million.

***Environmental Impact*:** As of May 2011, the total amount of hectares under conservation was 800,000. The projected goal in 2008 was to have a total of 516,000 hectares under conservation by the end of 2010.

***Community-level Impact*:** Individual beneficiaries have specified in their investment plans how they plan to spend the incentive payments. Incentives are invested in:

- 42 percent for family consumption: food, clothing, education, health, rent.
- 27 percent for land conservation: reforestation, restoration, maintenance of boundaries.
- 19 percent for improvement of existing savings.
- 7 percent to cancel existing liabilities.
- 5 percent to acquire home assets: housing, furniture, furnishings, vehicles.

Community beneficiaries have specified how they will allocate their incentive payments. Incentives are invested in:

- 21.4 percent for conservation and land consolidation: control and monitoring systems, training the community on environmental issues, zoning, land conflict solutions.

- 21 percent for productive activities: improvement in agriculture, fisheries, livestock, development of ecotourism.
- 20.6 percent for organizational strengthening: administrative and financial training, purchasing radios, computers and other equipment, paying administrative expenses.
- 16.2 percent for housing and infrastructure: improved housing, community infrastructure (piped water, latrines, communal house), electricity.
- 8.1 percent for health: medical clinics, dispensaries, hiring health promoter, emergency fund.
- 7 percent for education: payment for teachers, improve school infrastructure, bus, materials, student scholarships at various levels.
- 5.7 percent for transportation and other: purchase of motorized canoe, cultural activities, sports.

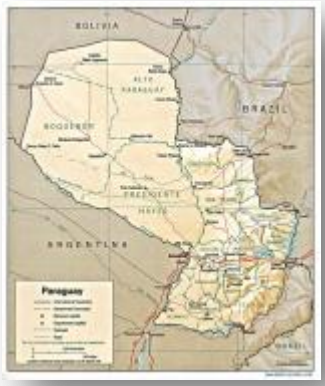
Guidance for Replication

- Originally, all incentive payments were dispersed three times a year. This arrangement proved too complex. As a result and beginning in 2010, incentive payments are made twice a year (May and October).
- To guide implementation of the Program, an Operational Manual was adopted in 2008. The Operational Manual had to be revised in 2009 to adjust some of the implementation procedures so participants could better understand the requirements.
- Forestland tenure conflicts developed since land title documents were not available from indigenous communities and individuals residing on ancestral land holdings.
- The registration information had to be simplified due to high demand and difficulty of processing.
- A number of participants had no technical capacity to meet some Program requirements. As a result, more *Programa Socio Bosque* personnel had to provide extra support.

Further Information: http://www.ambiente.gob.ec

Sustainable Forestry: Payment for Ecosystem Services (PES/VER)

Oil Industry Service Provider Seeks Carbon Neutrality by Funding Preservation of Paraguay Rainforest



Case Study: ***The Paraguay Forest Conservation Project***

PES Type: ***Long Term Management Fund***

Country: ***Paraguay***

A Singapore-based company that provides services to the oil and gas industry is investing in preserving Paraguay rainforests in return for the rights to Voluntary Carbon Offsets. Swire Pacific Offshore (SPO) will make a donation of US $1.5 million to the World Land Trust (WLT) for the purchase of land parcels in northeast and southeast Paraguay. SPO will make annual donations into the Long-Term Management Fund (LTMF) for the first five years of the project. Proceeds from LTMF will pay for the Project's operational expenses over its 20-year life (2010-2020). Funds from LTMF will support a Payment for Environmental Services (PES) scheme for 150 small farmers (campesinos) and indigenous tribes in two areas of Paraguay. The funds will pay individuals and communities to refrain from deforestation practices. In return, SPO will obtain the exclusive right to Voluntary Carbon Offsets (VCOs) to offset its unavoidable emissions, estimated at a minimum of 800,000 tCo2e over 20 years.

Financial Instrument

The Paraguay Forest Conservation Project (PFCP) is a multi-party collaboration between a business, NGOs and indigenous peoples. Swire Pacific Offshore (SPO), a leading service provider to the off-shore oil and gas industry, is working with The World Land Trust (WLT), a London-based international NGO with expertise in developing voluntary carbon offset programs that benefit local communities, Guyra Paraguay (GP), a non-profit specializing in the management conservation programs in Paraguay, and the La Amistad and Ishir indigenous communities.

SPO will make an initial donation of $1.5 million to the program manager, World Land Trust. WLT will in turn donate the monies to its project partner, Guyra Paraguay, for the purchase of title to the designated parcels of forested land in two areas of Paraguay. Funds will be deposited into the Long-Term Management Fund (LTMF). Following the purchase of targeted land parcels, SPO will donate $4.2 million

over the first five years of the project to support Payments for Ecosystem Services and administrative costs.

San Rafael area project

One designated project area is San Rafael in the eastern (Atlantic Forest) region, site of the La Amistad small farmer community. Each member of the community voluntarily agrees to contribute part of their land holdings to a community forest reserve. In return, the Fund will pay $170 per hectare per year for standing forest and $65 per hectare for reforestation. These payments are designed to compete with cotton as an alternative land use. It is proposed that 75 percent ($ 127.50/ha) of the payments will be made to individual land occupiers and 25 percent ($ 42.50/ha) will go to actions benefiting the community as a whole. Of the community benefit funds, $ 8.50 per hectare will go to each household in the community, regardless of land ownership, to promote cohesion and individual interest in protecting forest resources in general. $17 per hectare will go to the village council for works or activities benefiting the community as a whole. Examples include; support for schools, improved access of communications, and access to health services. $ 17 will go to a community fund for small-scale capital investments. Total estimated annual costs for PES are $47,600, assuming community participation covers 275 hectares of standing forests and an additional 10 hectares of reforestation area.

Chaco Pantanal area project

The other targeted project area is the Quebracho forest in northeast Paraguay, which is inhabited by the Ishir indigenous community. Project funds will be used to purchase title to 12,000 hectares of forested land threatened with clearance. Terms provide to maintain forest cover in perpetuity. Funds from the LTMF will provide $1/ha/year ($12,000 per year) over the 20-year life of the project. The payments go to members of the Ishir community, to be used at their discretion to improve quality of life.

Total Project Cost

Total cost to SPO for the 20-year project will be $5.6 million. SPO will deposit $872,000 annually in 2011-2014 and $712,000 in 2015 into the LTMF (totaling $4.2 million). Proceeds from this fund (after PES payments) will cover estimated annual project management expenses, including:

- Staff,
- Local consultants,
- Monitoring,
- Running costs, and
- Administration.

Proceeds from the LTMF also paid for third party verification and certification, at a cost of approximately $120,000.

The LTMF is designed as a sinking fund, i.e., it will provide all operating expenses for the 20-year life of the project and will be drawn down to zero by project's end.

2010-2020: Support to Develop Financial Instrument

The Atlantic Forest, or Mata Atlântica, is considered one of the world's biodiversity hotspots. Because of severe deforestation practices and unregulated soy production, it is estimated that less than 2 percent of

the Paraguayan Atlantic Forest stands today. The Paraguay Forest Conservation Project (PFCP) was created in 2008 in an attempt to preserve some of the remaining rainforest.

As stated in its Corporate Social Responsibility report, SPO has committed to operate in a "carbon neutral" status. To further that goal, SPO initiated a program to offset its unavoidable emissions, estimated to be 800,000 tCO2e over a 20-year period. A PES Trust Fund will be set up and disbursements will go to local indigenous community members. In return, the local communities agree to retain and improve the forests on their land. The communities also agree to set aside a portion of their land into community forest reserves. Each member of the Ishir community participating in the project will receive annual payments of $12,000 over the full 20-year project life. The La Amistad community would receive annual payments of $170 per hectare for standing forest and $65 per hectare for any reforested land. As proposed, 75 percent of all proceeds would go to individual land dwellers and 25 percent will go to actions benefiting the community as a whole.

During the public review period, it was argued that the project might have violated the rights of both indigenous tribes under the UN Declaration on the Rights of Indigenous Peoples (UNDRIP). The NGO Guyra Paraguay had a well-developed outreach program (supported by UNDP) with these communities, and conducted field audits consisting of interviews with community members. As a result, the project strategy was modified to respond directly to community concerns. After being presented to indigenous community leaders in August of 2009, community leaders signed an agreement in support of the project.

Certification & Start of Payments

In April 2010, the PFCP project was submitted to the Rainforest Alliance for validation against the Climate, Community & Biodiversity Alliance (CCBA) Gold Standard guidelines, including the assessment of the voluntary carbon offset potential.

In December of 2010, the PFCP project received Rainforest Alliance partial validation against the Gold Standard guidelines of CCBA. PFCP is currently in advanced stages of validation and SWO anticipates initial funding of LTMF to commence in late 2011.

Return On Investment

The total cost to SPO for participation in the project is $5.65 million. In return, SPO will receive an estimated minimum of 925,000 Voluntary Carbon Units (VCU), at a maximum cost of $6.108 per VCU produced. SPO's account at TZ1/Markit (environmental services registry) is to be credited with approximately 50,000 VCU each year for 20 years.

Results

Revenues: Each member of the Ishir indigenous community participating in the project will receive $12,000 annually for 20 years. The La Amistad community participating in the project will receive annual payments of $170 per hectare to maintain standing forests and $65 per hectare for reforestation.

Environmental Impact**:** The total project forested area will sequester an estimated 800,000 tCO2e over the 20-year life of the project. Although no guarantees are in place, some 275 hectares of forested land plus any reforested acreage are projected to remain as forest cover in perpetuity. Because the financial tool (PES/VER) has a 20-year time limit on implementation, there is a risk that the agreements to protect the forest will end after two decades and deforestation practices will resume. This potential to reverse the environmental gains of this effort should be addressed to ensure long term protection of the forest.

Community-Level Impact: All individual and community members participating in the project will realize a guaranteed income stream for 20 years. For members of the La Amistad community participating in the

project, local experts will provide technical support for more efficient use of agricultural land. The project also provides a budget for forest management programs. All members of the Ishir community, who transferred ownership of their land to GP during the project, will have full title transferred back to them at the end of the 20-year life of the project. The Ishir will also receive training in scientific forest management.

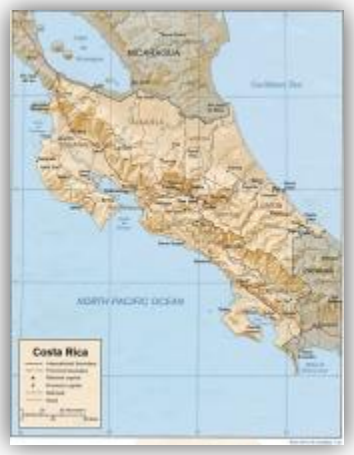
Guidance for Replication

- Mapping of carbon stock and other analyses were critical to understanding the driver behind deforestation rates, which would then inform the direction of the project. During the initial studies of the forest and its dwellers, it was confirmed that agriculture expansion, primarily for soy, was the main driver of accelerated deforestation rates.
- Surveys of the status of forest dwellers in advance of the project determined the level of poverty and annual per capita income, which then dictated annual revenue requirements.
- Unclear status of land tenure rights can delay or derail a project and lead to increased costs and complexity in order to ensure that negotiating parties have legal rights to enter into a PES agreement.

Further Information: http://www.adbi.org/discussion-paper/2008/05/22/2541.bhutan.millennium.development.goals/

Sustainable Forestry: Tax

A Little Goes a Long Way: Small Percentage of Fuel Tax Pays for Sustainable Forestry



Case Study: ***Costa Rica Fossil Fuel Tax***

Tax Type: ***Fossil Fuel Tax***

Country: ***Costa Rica***

The 1996 Forestry Law established a 5 percent "fossil fuel tax" on the sale of all gasoline and diesel fuel in Costa Rica. Some tax revenues are used to pay landowners for sustainable land management, under five-year, renewable contracts. The 1996 Forestry Law also established FONAFIFO (National Fund of Forest Financing), a semi-autonomous agency with independent legal status, to manage the revenues from the fossil fuel tax. Initially, FONAFIFO was allocated 30 percent per year of the revenue from the 5 percent fossil-fuel tax. In 2001, the law was amended to guarantee FONAFIFO's allocation at just 3.5 percent of fuel tax revenues annually. As of 2008, FONFAFIFO had disbursed an average of $17.2 million per year for forest management programs.

Financial Instrument

For decades, Costa Rica and particularly the Central Volcanic Range (CVR) experienced one of the world's fastest deforestation rates. Costa Rica's strong national parks and biological reserve programs helped to protect important areas, but ecologically important park buffer zones were heavily populated and deforesting quickly. Costa Rica struggled to develop market-based strategies to deal with this serious situation. One of the strategies adopted was a program for improving the viability of forest ownership, to be financed by proceeds from a fossil fuel tax. Article 7575 of the 1996 Forestry Law sanctioned the assessment of a 5 percent fossil-fuel tax on the sale of all gasoline and diesel fuel products in the country.

The Forestry Law of 1996 established FONAFIFO (National Fund of Forest Financing), a semi-autonomous agency with independent legal status, to manage the funds from its allocation of the revenues from the fossil fuel tax. FONAFIFO initially received an annual allocation of nearly 30 percent of

the revenues from the fossil-fuel tax, or $14 million. The amount of the allocation has varied with different political administrations. The Forestry Law was amended in 2001 to guarantee a 3.5 percent annual allocation to FONAFIFO from the revenues of the fossil-fuel tax. Of the remaining annual tax revenues, 30 percent is allocated to the National Highway Council (CONAVI), and 0.1 percent is allocated to finance organic farming. The Ministry of Finance retains the balance (66.4 percent) of the fossil-fuel tax revenues for administration expenses for the numerous departments under its jurisdiction.

The Ministry of Finance collects the revenue from the fossil-fuel tax as a sales tax at the pump imposed on all gasoline and diesel fuel products purchased by the general populace. Although all fuel products in the country are subject to the tax, the majority of the revenue ($0.34 per liter) is generated by the sale of gasoline and diesel fuel. In the first year of fully implementing the program (1997), FONAFIFO was allocated approximately $14 million. As of 2008, FONFAFIFO had allocated an average of $17.2 million per year for forest management programs.

1996-Ongoing: Support to Develop Financial Instrument

The 1996 Forestry Law stipulated that a fossil fuel tax could be assessed. The initial proposal to develop and implement the tax began in 1993, with final implementation in 1996. The first year of assessment was 1997. In 2001, the Forestry Law was amended to guarantee 3.5 percent of the fossil-fuel sales tax revenues would be allocated for forest management programs.

NGO FUNDECOR Oversees Forestry Conservation

In order to provide an infrastructure for the administration of the land conservation program, in 1991 the Costa Rican government established FUNDECOR, an NGO charged with promoting the conservation and sustainable use of natural resources, in particular forest properties, and funded by the proceeds from the fossil-fuel tax. FUNDECOR receives funding from FONAFIFO for operational expenses. FUNDECOR provides support for forest landowners who are seeking payment from FONAFIFO for sustainable management of their forests and property. Specifically, FUNDECOR assists forest owners in the preparation of five-year renewable contracts, which are required to be on file with FONAFIFO before payment is made to the forest owners. Although the scope of FUNDECOR's work is nationwide, the program's initial efforts focused on the Central Volcanic Range.

Forestry Management Contracts

As of 2008, four types of landowner are eligible for forest management contracts. They are:

1. Individual farmers; about half of individual contracts go to farms covering less than 30 hectares.
2. Companies, including:
   - Family companies (such as a farm inherited by several children who choose to keep it as one property).
   - Agriculture and reforestation groups.
   - Forest producers.
   - Ranching-related companies.
   - Eco-tourism agencies.

3. Conservation or development associations: usually not-for-profit organizations. These include:
   - Conservation associations.
   - Church and development associations.
   - Wildlife reserves.

4. Indigenous communities.

By law, contracts can cover up to 300 hectares, with the exception of Indigenous communities, which can apply for contracts covering up to 600 hectares.

Key clauses of the contracts specify: the design and implementation of a sustainable forest management plan, access to forest management technical assistance and details on how landowners can monitor the status of FONAFIFO payments. FUNDECOR submits the signed contracts to FONAFIFO, which maintains a secure database of all contracts and disperses annual payments to the forest owners. In the early years of the program (1997), forest owners were paid $43/hectare/year. Payment levels were increased in 2006 to the current $64/hectare/year. The contracts provide for equal annual payments of 20 percent of total amount due over the five-year lifetime of the contract. These contracts are renewable by mutual agreement.

Results

Revenues: The amended Forestry Law of 2001 stipulated that the gasoline tax would be adjusted three times per year. As of 2011, the tax is $1.05 per liter. From 1998 to 2010, the total amount allocated for payments to all forest management contracts was $105 million.

Environmental Impact**:** As of 2009, the total area under contract for forest management practices was 728,814 hectares. From 1997 to 2009, the total number of forest management contracts was 9,141.The annual rate of natural forest cover change for 2000-2005 was -0.42 percent, which represented an increase in the deforestation rate. From 2005-2010 that deforestation trend was reversed and there was annual increase in forest cover of 0.88 percent.

Community-Level Impact: Approximately 15 percent of the contracts signed in 2006 to 2007 were renewals for conservation activities. In 2008, contract renewals represented 28 percent of the area under conservation, suggesting certain participants were pleased with the program and wished to continue in it.

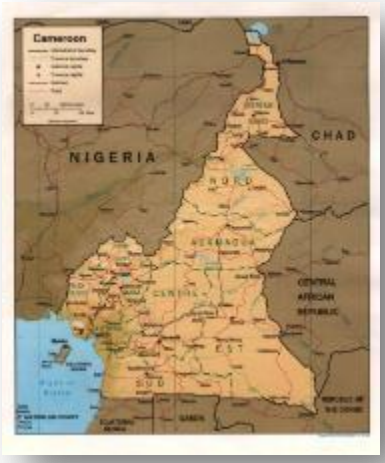
Guidance for Replication

- One of the keys to success for the program was allowing small, medium and large landholders to participate at every level of the program development and implementation.
- As demand for applications grew from more remote areas, FONAFIFO found it necessary to open regional offices.
- FONAFIFO originally intended to concentrate on reforestation activities in order to ensure timber supply to the country, but forest protection contracts were the most sought-after activity funded by the program from the outset.
- Effectively attracting participation of numerous forest stakeholders in a program of this scale depended on the political stability of the Costa Rican state.
- Access to information was crucial in encouraging participation, so the National Public Registry in Costa Rica opened an online system to check on the legal status of properties, making it much quicker and less expensive to apply for funding.

*Further Information***:** http://www.adbi.org/discussion-paper/2008/05/22/2541.bhutan.millennium.development.goals/

Sustainable Forestry: Fees

NGO Oversight Required to Ensure Annual Forestry Fee Revenues Reach Village Level



Case Study: ***CRS (Catholic Relief Services) Community Forest Project, Eastern Region, Batouri District***

Fee Type: ***Annual Forestry Fee (AFF)***

Country: ***Cameroon***

A fee designed to funnel a portion of concession monies from logging companies directly to local villages was not succeeding, despite fees being collected since 1999 under the oversight of Cameroon's Ministry of Finance. With the creation of an NGO-funded Community Forest Project in 2005, villagers were apprised of their rights and monies started to flow to the village level. However, ignorance of, and resistance to the law hampers progress. More importantly, since 2005, the national government has continued to collect the Fees but has not disbursed the village–level funds in the last two years under study. The CRS project was implemented in order to provide some oversight/enforcement of the required disbursement to regional and village levels.

Financial Instrument

Background

The forests of the Congo Basin comprise the second largest tropical forest mass after the Amazon. It is estimated that Cameroon contains 25 percent of all forest resources in the Congo Basin. Due to unsustainable forest management, Cameroon experienced a significant decrease in the amount of forested area since 1980. Cameroon passed the Forestry Law of 1994 in order to comply with its Millennium Development Goals and National Strategies for the Reduction of Poverty. Embedded in this law was a decentralized forestry taxation system, with the Annual Forestry Fee (AFF) as a key component. The AFF was designed to equitably re-distribute royalties from commercial logging concessions, with the stated goals of poverty alleviation and sustainable forest management. Four years after it was proposed, the 1994 Forest law, including the AFF, was implemented in 1998 upon the

publication of a manual of community forestry procedures that was compiled through a consultative process.

In addition to the AFF, there are a variety of other forestry-related taxes.

Fee Assessment

In 2005, annual timber production was just under 2 million cubic meters, and forestry and timber accounted for 6 percent of Cameroon's GDP and some 45,000 jobs. Government revenues from various forestry taxes reached $80 million, of which it is estimated that 30 percent, or $26 million, came from the Annual Forestry Fee assessments. In 2008, it is estimated that $28 million was collected in Annual Forestry Fees on a total area of 6 million hectares (or an average of $4.66 per hectare.)

Annual Forestry Fees are an area-based tax assessed on logging companies; the Ministry of Forests and Wildlife sets a minimum price and the companies bid on a per hectare basis in an auction for short-term or long-term logging rights. "The bids of logging companies are ranked against a set of technical and financial criteria – including a per hectare payment for the complete forest surface – and the winning bid is then multiplied by the surface of the logging title auctioned." (Cerutti)

The AFF originally comprised an access right calculated from a minimum rate of $.065 per hectare per year and an exploitation right calculated by logging area. The Fee was modified in 1998 to a Felling Fee of $5.50 per hectare; concessions fee, $3.25 per hectare; and permits, $3.25 per hectare. The Finance Law for fiscal year 2000-2001 lowered the minimum fee for concessions to a rate of $2.20 per hectare.

Based on the logging value, price per hectare for logging rights ranges from $3 - $20. Non-compliance can result in fines and penalties. While provisions for fines are clear in the Forestry law, it is not clear that they are being paid. Logging companies can negotiate fines with the government and, if no agreement is reached, either party can go to court.

Even if collected and distributed according to the approved process, revenues on a per capita basis are highly variable, since they are based on concession size, rate per hectare, and number of people in the adjacent to the concession.

Fee Collection

The Forestry Fee amounts are collected each trimester; logging companies issue three checks or bank transfers: 50 percent to the national government, 40 percent for rural councils and 10 percent for village-level development. Copies of the transfers are sent to the government department responsible for oversight. The collection system in place in 2004 required large companies to send checks to the Department des Grandes Entreprises (Large Enterprise Office) rather than to the national Forestry program office. In 2007 the Ministry of Economy and Finance ordered individual Rural Councils to open their own bank accounts, into which logging companies would directly transfer the AFF checks, thus relieving the Ministry of the collection role while leaving it to function as supervisor of the process.

2005-2011: Support to Develop Financial Instrument: Batouri District

In the complex process of redistribution of Annual Forestry Fee funds, the 10 percent intended to go to forest-edge communities was not reaching them, but was retained at higher government levels. In 2005 it was determined that village inhabitants were not being apprised of their rights to their 10 percent share of AFF royalties. In response, under the guidelines of the Central African Forest Commission (COMIFAC), Catholic Relief Services (CRS) initiated the CRS Community Forest Project in the Batouri District of Cameroon. The goal of this pilot project was to build awareness among village populations about their forest development rights, including their right to annual timber royalties. The project also provided assistance for local villagers to apply for community forest authorization, which is the first step in the process of gaining access to Fee monies.

The Batouri Community Forest Project (CFP) was funded by two main sources. The first was by a partnership formed between the Diocese of Batouri, Catholic Relief Services and two local NGOs. CRS contributed $523,049; the remaining donors contributed a total of $171,389. In 2005, Cameroon qualified to have 100 percent of its external debt cancelled under the Heavily Indebted Poor Countries (HIPC) initiative by the International Monetary Fund (IMF) and the World Bank. HIPC resources were deposited in Cameroon's *Pays Pauvre Très Endétté* (PPTE) Fund. $581,639 from the PPTE Fund was re-directed to the Community Forest Project. The total amount contributed to the Community Forest Project was $1,276,077. The CFP allocated these resources to provide an administrative infrastructure with line item budgets for:

- Vehicles (including maintenance)
- Salaries
- Administrative costs
- Cartography and environmental impact study
- Forest management planning
- Education
- Management of forest fees
- Follow-up and evaluation

In order for villages in the Batouri District to access the AFF, they needed to achieve community forest authorization. The goal of the Batouri CFP was to create 250 authorized community forests encompassing a target area of 40 community villages. Once authorized, the villages could access AFF revenues, which they could apply to community development projects. Advocacy and lobbying assistance from Project staff and Catholic Relief Services' Technical Advisor as well as the assistance of the Peace and Justice Commission of Batouri diocese enabled the eventual authorization and flow of the community-level funding.

Results

About 20,000 local farmers in 40 villages were to benefit from the Batouri project. However, while Fees have been collected, in recent years the monies have not reached the local communities they are intended to support.

Revenues: In 2004, AFF revenues for the Batouri district reached $70,000. No fee monies were received for the period 2005-07. In 2008, fees of $63,500 were disbursed, a decrease of some 10 percent. As of 2011, the CRS project manager for the Batouri district reports that the Annual Forest Fee funds designated for local and village-level use have not been disbursed by the government since 2008, though the logging companies continued to pay the Fees. Clearly, technical and financial auditing processes were not implemented adequately.

Community-Level Impact: The 10 percent of fees controlled by local villages are designated to be spent on community-chosen projects, with funding controlled by local mayors. Once apprised of their rights and with the launch of the Community Forest Project, the amount of monies was published in local newspapers. The 10 percent of the Fees designated to be spent at the Community level started to have impact with local projects, including: drilling wells, building a community center, and subsidizing university fees for some local students. One of the first community development projects funded the drilling of a well to provide potable water for villagers. The project director reports that two other mayors have not yet begun community projects, but promise to do so with the next round of funding, if/when it is disbursed.

***Environmental Impact*:** Potential environmental benefits include enhancing biodiversity and ecosystem integrity, which encourage people to invest in sustainable land use. However, it should be noted that the deforestation rate in Cameroon has climbed from an annual average of .90 percent for 2000-2005 to .99 percent for 2005-2010.

Guidance for Replication

- Per capita inequity, i.e., the variance in fee amounts from village to village, could lead to resentment or perceived favoritism.

- Even when transparency is mandated at the national level, the process of distributing funds becomes more opaque as it works down to the local level.

- The 1994 law forbade a single company from logging more than 200,000 hectares under pain of fine or imprisonment. However it has been documented that some companies work around that law by establishing subsidiaries.

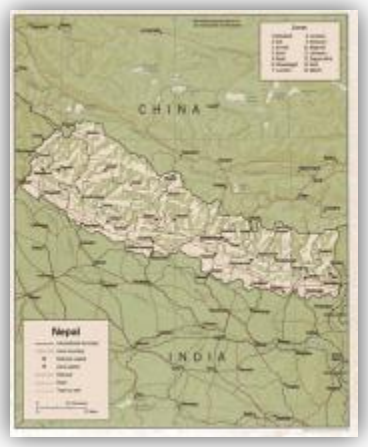
- Weak management capacity hindered collection and distribution of revenues.

- Logging companies are required to prepare detailed forest management plans (FMPs) to ensure the ecological, economic, and socially sustainable management of their forests, but in practice many plans are not created or implemented.

Further Info: http://www.spm.gov.cm/gouvernement/composition/elvis-ngolle-ngolle/mission.html?no_cache=1&sword_list percent5B percent5D=foret

Sustainable Forestry: Fee

Community Forest Fee is Popular but not Enough



Case Study: **Federation of Community Forestry Users (*FECOFUN)***

Tool Type: ***Community Fee***

Country: ***Nepal***

Nearly one in six Nepalese are members of community forest user groups and members pay fees ($10 to enroll, $3 per year) to support the efforts of the Federation of Community Forestry Users (FECOFUN), a civil society organization that educates and advocates for responsible forest management. Despite the massive participation, membership fees cover only 15% of the organization's expenses and illegal logging is a huge issue. The toll from illegal logging led the government to impose country-wide bans on logging.

Financial Instrument

FECOFUN is a national federation of Community Forest User Groups (CFUG) that advocates for user rights at the local, regional and national levels. It also ensures all CFUGs adhere to principles of sustainable forest management. Community forest fees are paid by each community forest user group member: The community forest fee is assessed on each CFUG seeking membership in the Federation of Community Forestry Users, Nepal (FECOFUN). The fees support the efforts of FECOFUN, an NGO. The main purpose of FECOFUN is to raise the awareness of forest users about their rights of access to, and responsibilities for, the management of Nepal's forest resources. FECOFUN also acts as a lobbyist, advocating on behalf of the forest users to ensure community forestry policy objectives are accomplished. FECOFUN membership now stands at about five million people (one in 6 of all Nepalese) in over 11,000 member community forest user group and is the largest civil society organization in Nepal.

The fee is set by the executive committee of FECOFUN and is collected by FECOFUN staff members. Each Community Forest User Group is required to pay an enrollment fee of US $10 and a US $3 renewal fee each year; the fee amount is unchanged since inception. These fees represent about 40% of annual income. The remaining 60% income is from contributions from an extensive external international donor base. The Ford Foundation has agreed to make a contribution of an equal amount deposited in the

membership trust fund. Other external donors include Nepal-UK Community Forest Project; Nepal-Swiss Community Forest Project and the Dandia Foundation.

Sixty percent of the fees collected are directed to district level offices for operations. The remaining 40% is deposited into a trust fund. Proceeds from this trust fund, are made available in the form of grants to poorer community forest inhabitants. All oversight and audits are conducted by FECOFUN staff members, generally at the district level.

1995-ongoing: Support to Develop Financial Instrument

During the period from the 1970s to the early 1990s, Nepal's forest policy experienced a transformation. Community Forestry, an umbrella term indicating a wide range of services that link rural people with forests, trees and the products and benefits derived from them, was embedded in the policy of both eras. In the early 1970s, Community Forests were mainly perceived as a "community resource" to be managed at the national level by government. In the early 1990s, this perception evolved into a "stakeholder-managed" policy that focused on the livelihoods of the local forest inhabitants. The Forest Act of 1993 and Forest Regulations of 1995 legitimized the concept of Community Forest User Group as an independent, autonomous and self-governing entity. After a certification process, the District Forest Office (DFO) would hand over a forest area to the CFUG to manage and protect. As the CFUG concept gained wider acceptance, forest users became dissatisfied with the pace and effectiveness of forest handover. After a number of district-level forums, the Federation of Community Forests Users, Nepal (FECOFUN) was created. On more than one occasion, the government has sought to restrict the rights and responsibilities of forest users by amending forestry laws. FECOFUN mobilized efforts to pressure the government to postpone amendments to the legislation.

Results:

Revenues: As of 2011, there is US $2 million in the FECOFUN trust fund. Currently, 85% of FECOFUN's annual budget is secured from external donors. If the membership fee could be adjusted, it would make FECOFUN less dependent on outside donors.

Environmental Impact: Twenty-five percent of the FECOFUN budget is devoted to forest management. One of the direct environmental benefits from the formation of FECOFUN is that it promotes the principles of sustainable forest management by its entire CFUG membership.

Despite the program, some lowland forest areas had such high rates of illegal logging that the Nepalese government imposed a two-month ban on all logging throughout the country in June 2010.

Community-Level Impact: Thirty-five percent of the FECOFUN budget is devoted to poverty alleviation and 40% to community development. In addition, grants have been made available to poorer community forest inhabitants. Various community development projects have been carried out including construction of village trails, schools and temples.

FECOFUN is progressive in terms of inclusion in its governing structure. Structurally it requires at least 50% of its positions are held by women from the local to national level. Similarly, there is also provision of reservations for minorities based on geography, ethnic group and so on.

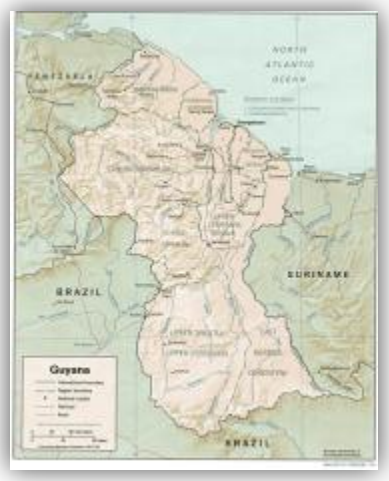
Guidance for Replication

- Because it relies on a high level of donor support at the international level, FECOFUN's attention to local interests is often distracted. Almost all FECOFUN executives are from elite sections of their communities and they are perceived as not representing the poorer households who depend more heavily on forest resources.
- Mass participation in a program does not necessarily lead to financial success; price setting needs to align with expenses as well as ability to pay. Sliding scales or other financial tools should be considered.
- Before the community forestry program, Nepal generated more than 30% of its revenue from forest products. Since FUGs do not have to give back any of their revenue generated, government income has decreased.

Further Info: http://www.fecofun.org/index.php

Sustainable Forestry: MBM

Mainstreaming PES: Experimental Ecosystem Service Certificate (ESC) Debuts



Case Study: ***Iwokrama International Center for Rainforest Conservation and Development***

Tool Type: ***Market Based Mechanism***

Country: ***Guyana***

Since 1996 the Iwokrama International Center for Rainforest Conservation and Development (IIC) has been working with indigenous communities to develop sustainable methods of forest management and timber harvesting. In 2008 ICC entered into a licensing agreement with Canopy Capital, a London-based financial services company. Canopy Capital proposed to buy a license to measure then value the ecosystem services provided by the Iwokrama rainforest for a period of five years. Canopy Capital would provide a guaranteed annual payment to ICC from the sale of the ESCs on the open market. Eighty percent of the proceeds from the sale of the ESCs would be directed back to the people of Guyana and Canopy Capital would retain the remaining 20 percent. The scheme does not yet cover a significant part of the NGO's expenses.

Financial Instrument

An Ecosystem Service Certificate (ESC) is a marketable financial instrument derived from measuring and placing a value on ecosystem services provided in this case by the Iwokrama Reserve tropical rainforest in central Guyana. The IIC is an NGO that was established in 1996 by an Act of the Guyana Parliament to manage the 371,000 hectare Iwokrama Reserve rainforest. It is administered by an international board of trustees. The Act gave the IIC the mandate to "promote the conservation and the sustainable and equitable use of tropical rainforests in a manner that will lead to lasting ecological, economic and social benefits to the people of Guyana and to the world in general".

In 2008, Canopy Capital, a London-based financial services company, entered into a licensing agreement with ICC. Under the terms of the agreement, Canopy Capital purchased a five-year license (with an option for another five years) to measure and place a value on the ecosystem services (such as rainfall

generation, climate regulation, biodiversity maintenance and water storage) provided by the ICC's 371,000 hectare Iwokrama Reserve rainforest. In return, Canopy Capital would guarantee an annual payment to ICC. In order to generate the revenue for these annual payments, Canopy Capital created a market-based financial instrument called an Ecosystem Service Certificate (ESC), which represented the value of the ecosystem services from the rainforest. The ESC was attached to a US $124 million, 10-year traded bond, which would be marketed to investors with environmental interests and concerns.

Under the revenue-sharing terms of the agreement, Canopy Capital would direct 80% of the interest from the sale of the bond back to the people of Guyana via the ICC. Canopy Capital would retain the remaining 20%. Canopy Capital was partially funded by a 20% equity position from Global Canopy Program, a UK-based alliance dedicated to the preservation of global rainforests. As an equity partner, Global Canopy Program would receive 4% of Canopy Capital's 20% profits. Under terms of the license, should the forests suffer significant degradation (either natural or through human activity), Canopy Capital can suspend its payments for ecosystem services. The IIC can also suspend the agreement if Canopy Capital does not fulfill its commitments.

2008 – ongoing: Support to Develop Financial Instrument

The forest was set aside for sustainable forestry efforts by presidential decree in 1989. An outside law firm was retained to draft the original agreement between the ICC and Canopy Capital. ICC and Canopy Capital are legally bound by the terms of the agreement.

In 1996, under a joint mandate between the Government of Guyana and the Commonwealth Secretariat, the ICC was established to ensure economic, ecological and social benefits to the people of Guyana under guidelines set up by the Guyana Forestry Commission. The ICC works closely with 16 indigenous communities (about 7,000 people) to ensure that they participate in -- and benefit from -- the proceeds from sustainably harvested timber. The ICC is supported by the Commonwealth Forestry Association and HRH Prince of Wales' Rainforests Project (RP).

Results:

Revenues: The 2009 audited statement of the IIC indicates that just 4 percent, or $89,000 of the IIC's $2.2 million in revenues, came from Canopy Capital

Environmental Impact: The revenue realized from the sale of the Iwokrama Reserve ecosystem services has helped fund the ongoing sustainable management of the timber harvest portion of the Reserve, which is less than 0.5% of the forest.

Community-Level Impact: Not only have the funds provided employment and training for the local communities, but the sustainable harvest model used by the workers has resulted in accreditation by the Forest Stewardship Council (FSC). As a result, the timber from the sustainably-managed Iwokrama Reserve has achieved a strong market identity in Europe, the United States and New Zealand. In addition Canopy Capital's annual payments to the ICC help to maintain the livelihoods of 16 communities (approximately 7000).

Benefits: One of the main benefits from the alliance between the ICC and Canopy Capital is that it demonstrates to the international community that you can use a rainforest without losing it.

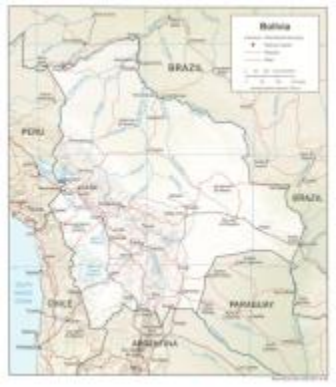
Guidance for Replication

- One of the reasons Canopy Capital chose to work with Iwokrama is because of the IIC's long standing and good working relationship with the 16 indigenous communities in and around the Iwokrama reserve.
- Canopy Capital provided additional upfront revenue to help Iwokrama build its capacity by completing its current business plan and maintaining its forest operations to ensure that present community benefits remain secure.
- Traditionally, Iwokrama has survived on a combination of donor and earned income, which at times has been insufficient to maintain all its operations. Under the business plan, the IIC is gradually moving towards financial self-sufficiency by deriving an increasing income from its four business operations and project income, while continuing to seek international support for its new generation of research, linked to the impacts of climate change on the forest, and the measurement and valuation of its eco-system services.
- The success and viability of the ESC depends in great measure on the progress of international climate talks and other outside forces.

Further Info: http://www.iwokrama.org/wp/#

Sustainable Forestry: MBM

Compensation for Oil Income Foregone



Case Study: ***Yasuni Initiative***

Tool Type: ***MBM***

Country: ***Ecuador***

The government of Ecuador initiated a program to leave 20% of the country's proven oil reserves underground in the Yasuni National Park to protect the extremely biodiverse rainforest and its inhabitants. To compensate Ecuador for the foregone oil extraction revenue, the country would issue carbon bonds in the form of Certificates of Guarantee Yasuni (CGY) that would be purchased and traded on the European Trading System (ETS). The total projected value of these bonds over a ten-year period is US $4.07 billion.

Financial Instrument

The government of Ecuador initiated a program to leave 20% of the country's proven oil reserves underground in the Yasuni National Park to protect the extremely biodiverse rainforest and its inhabitants. To compensate Ecuador for the foregone oil extraction revenue, the country would issue carbon bonds in the form of Certificates of Guarantee Yasuni (CGY) that would be purchased and traded on the European Trading System (ETS). The total projected value of these bonds over a ten-year period is US $4.07 billion. This value represents the avoided cost of approximately 407 million metric tons of CO2 (US $10/ton CO2) not emitted into the atmosphere. The proceeds from the sale of the bonds would be deposited into an International Trust Fund administered by the Ecuador government and the United Nations. Interest from the fund would support the goals of the Ecuador's National Sustainable Development Agenda. The international donor community would also contribute to the Fund. The international financial crisis has caused the project to scale back as some funders have pulled out.

Over a ten-year period, the government of Ecuador would issue Certificates of Guarantee Yasuni (CGY) equal to 407 million metric tons of CO2, which is the amount of CO2 that would be emitted into the atmosphere if proven oil reserves were extracted. The corresponding avoided cost of the CO2 would be $US 4.07 billion (at $10/ ton CO2). The objective is to have the CGY recognized as the equivalent of carbon offsets currently traded under the European Trading System (ETS). The CGY would be

considered as another type of GHG allowance credit. EU member states and other companies operating under the ETS would purchase and trade the CGY credits like any other allowance. Once the market was established for the credits, all income created would then be deposited into the International Trust Fund.

The mechanism was set after extensive negotiations between the government of Ecuador, the World Resources Institute, and members of the international development and finance community. The initial proposal to develop and implement the mechanism began in 2007, with final implementation in 2010. The government of Ecuador and the United Nations administer the mechanism. Ecuador issues the CGY and ensures proceeds from the sale are deposited into the Financial Trust Fund. Proceeds from the sale and trade of the CGY are deposited into a Financial Trust Fund in Ecuador. Interest from the Fund is disbursed to programs under Ecuador's National Sustainable Development Agenda. Oversight and audit responsibilities are conducted by the Ecuador government, the United Nations and other NGOs.

Initial donor countries include Germany, Spain, France, Sweden and Switzerland with a collective commitment of US$1.5 billion.

2009-ongoing: Support to Develop Financial Instrument

As a component of its National Sustainable Development Agenda (NSDA), the government of Ecuador has initiated a program to forgo oil extraction from the Ishpingo-Tambocoha-Tiputini (ITT) oilfields. ITT lie within the Yasuni National Park, which itself lies within 2.5 million acres of tropical rainforest and is the ancestral territory of two indigenous tribes living in voluntary isolation. Under the terms of the program, the Ecuador government would avoid extraction of oil from ITT if the international financial community compensates Ecuador for the projected forgone revenue. Compensation would be deposited into an International Trust Fund to be administered by the Ecuadorian government, the United Nations, and other financial contributors. Interest from the Fund would be used to fulfill objectives of the NSDA including, forest protection and recovery, and moving from an oil-based economy to a new energy model based on renewable resources and sustainable management of its biodiversity. Ecuador, along with the assistance of the international community, would also develop and issue carbon bonds in the form of Certificates of Guarantee Yasuni (CGY).

Results:

Revenues: On August 3, 2010, the United Nations Development Program (UNDP) and the government of Ecuador signed an agreement establishing the International Trust Fund to support the Yasuni-ITT Initiative. The fund requires a minimum $100 million payment by 31 December 2011, to remain viable. If this goal can't be met, Ecuador can refund the donations and open up the park to development. Relying exclusively on corporate and governmental donations, only a little over half the goal has been reached. As of December 2011, the ITT supporting website hosted by UNDP states that only US $1,765,189 has actually been deposited with the largest deposit form the Government of Spain ($1,400,400).

Initially, the Ecuador government requested that the international donor community contribute US $4.5 billion to initiate the International Trust Fund. That amount met strong resistance from the donor community. Although the international community has been generally supportive of the plan, Germany, which had tentatively pledged over $50 million in contribution to the initiative over ten years, withdrew its support in the summer of 2011, jeopardizing the entire plan.

Environmental Impact: If successful, the Fund would conserve and prevent deforestation of a total of 4.8 million hectares of forested area, one million of which is owned by small landholders. The total

surface area currently under State's protection amounts to 20% of Ecuador's territory, one of the highest percentages in the world.

Community Impact: Interest earned from the fund would promote social development in the ITT region with programs that include health, education, training, technical assistance and productive job creation in sustainable activities including agro-forestry. The fund would also support the voluntary isolation of indigenous cultures living in the Yasuni Park (the Tagaeri and Taromenane).

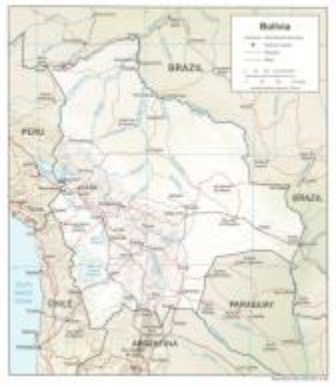
Guidance for Replication:

- Leaving oil in-place for avoided carbon emissions to protect indigenous tribes or biodiversity is not considered a valid certified emissions credit (CER) under the current UNFCCC Clean Development Mechanism (CDM).
- Dependence on international funding exposes programs to heightened risk from economic conditions beyond a nation's control. With the world's economy still on a downswing and the future of Kyoto in doubt, the project may not succeed.

Further Information: http://mdtf.undp.org/yasuni

Sustainable Forestry: CDM/VER

CDM Approved Investment Helps Fund Forest Management



Case Study: ***ArBolivia, Tunari National Park***

Tool Type: ***CDM/VER as Subsidies***

Country: ***Bolivia***

ArBolivia, is a community-based forestry project that works with small groups of farmers to stop land conversion and “slash and burn” practices. The project is funded by a London-based Industrial Provident Society that offers ethical investment opportunities in the project. Shareholders invest in hardwood tree planting in return for an annual 7.5% return and a share of harvest revenue. The project is subsidized by funds accrued through CDM and VER.

Financial Instrument

Despite supposed protection under Bolivia’s Forestry Law of 1700, since the 1990s Bolivia’s deforestation rate more than doubled, and nearly 678,000 acres of forest cover are destroyed every year. In order to halt the further destruction of its forestry resources, Bolivia entered into a reforestation program with ArBolivia, a community-based forestry project that works with small groups of farmers to stop land conversion and “slash and burn” practices. The project is administered by the Dutch investment firm Sicirec and the Bolivian sustainable agroforestry NGO Cetefor, and is funded by a London-based Industrial Provident Society (a cooperative organization that operates for community benefit through ethical investing). The Society was established in March 2009 entirely for the Benefit of the ArBolivia Community.

Society shareholders in the project agree to a minimum investment of $1,600 with an annual rate of return of 7.5%. The society shareholder funds are used to plant and pay the on-going project costs associated with growing trees until they are ready to be harvested for timber. In exchange the society is entitled to a 50% share in the future net revenues generated from timber sales, and by discounting the future value of timber revenues, the society expects to be able to offer every member a fair return on their investment. The first substantial revenues are predicted to be received in the 2014/15 season. Any surplus after paying interest to members will be used by the society to benefit the local communities in Bolivia.

Some 1,500 small farmers are participating in the program. Each agrees to plant 2.5 acres of their land with hardwood trees in exchange for 50% of the timber revenues (the other 50% is distributed to Society investors) accrued at the end of trees' maturity cycle. Farmers are paid $90 per year maintenance fees for the first three years. The project currently covers 1400 hectares and all saplings were provided by ArBolivia's own nurseries. At full scale the project will be responsible for planting approximately 5,000 hectares of commercial timber within small, isolated parcels owned by roughly 2000 smallholders who belong to co operatives within the departments of Cochabamba, Santa Cruz, Beni and La Paz. A further 1,000 hectares will be planted for agro-forestry (cocoa and citrus fruits) and a further 1,200 hectares of planting will be devoted purely for conservation.

The ArBolivia project cannot be completely sustained through Society investments. In order to subsidize the project's costs, ArBolivia obtained accreditation as a Clean Development Mechanism (CDM) in 2008 and received funding from the sale of carbon credits (Certified Emissions Reductions). The credits for the years 2008-2012 were sold to the Belgian government, which retained an option on the credits for the years 2010-2017. Cetefor also agreed to invest $305,000 for the project.

However, following the failure of talks at Copenhagen in December 2009 the Bolivian government withdrew its support for CDM, which meant that ArBolivia had to seek alternative certification in order to sell its credits in the voluntary market, where the approval of the host country is not required. VER certification was finally granted on 31st May 2011.

In consideration of its funding commitment to the society the rights to the bulk of the ArBolivia carbon credits were transferred to the Society. The Society has already signed a new agreement with the German company, Forest Finance GmbH and has received an initial payment for delivery of the first 10,000 tons. In addition, Forest Finance is assisting with a further submission for certification under the Carbon Fix Standard, which is more widely known in Germany. It has further agreed to purchase and pay for a minimum of 25,000 ton of Carbon Fix credits by 30th June 2012. The availability of marketable carbon credits means that the society is able to generate cash revenues earlier than originally anticipated.

2007-ongoing: Support to Develop Financial Instrument

Since 1995, the Food and Agriculture Organization (FAO), the European Union and the Belgian government together with the regional government in Bolivia have funded the reforestation of 2000 hectares as part of the regional sustainable development program. The aim of this program was to promote and implement economically viable and labor-intensive land-use and forest resource management practices in the Cochabamba Tropics region of Bolivia. The ArBolivia Project was established as a result of this pilot project.

In 2002 the Centro Tecnico Forestal (Cetefor), a Bolivian foundation set up to attract international investment into sustainable forestry and farming development, signed an agreement with Sicirec, an experienced firm of consultants specializing in sustainable tropical forestry from the Netherlands, as advisers to the project with the objective of creating a comprehensive program, which would qualify as a CDM activity. A joint venture organization, Sicirec, was created in order to establish contracts with individual smallholders, apply for accreditation as a CDM and receive funding from the sale of carbon credits. After 6 years of monitoring and research, ArBolivia was registered as an official CDM activity in 2009. An Emissions Reduction Purchase Agreement was signed by the Flemish government for the forward purchase of credits for the years 2008—2012, with a further option to purchase credits for the years 2013 – 17.

Results

Revenues: The Society was formed on 9th March 2009. As at 30th September 2011 the society had issued share capital of US $2.3 million and had 287 shareholders. The Society also owns the rights to a 50% share in the revenues from 1,109.4 hectares, which are expected to commence in 2013/4. In addition it also owns the rights to over 300,000 ton verified emissions reductions (as at 30th September 2011) relating to approximately 85% of the hectares planted to date.

Projected revenue from forestry sales by 2015/2016 is US $1.7 million and from carbon credits US $430,000.

Projected revenue for ArBolivia for 2015/2016 is US $1.7 million.

Environmental Impact: The project will contribute to the restoration of bare or abandoned land and has been nominated for a Gold rating by the Communities, Climate Change and Biodiversity Alliance. At full scale the verified amount of carbon captured over a 21 year period is estimated at 1,257,499 ton. By using 18 indigenous species of trees, intercropping and working with over 2,000 farmers on widely distributed plots, as well as creating wildlife corridors, biodiversity is substantially enhanced. In addition, a conservation project has been initiated to plant 400,000 trees in designated conservation areas. The objective is to counter the loss of biodiversity by repairing dedicated areas and corridors in order to provide a network of secure habitats and thoroughfares.

Social Impact: Profits are shared between local farmers and investors. The average current annual earnings of participating smallholders are only around $2,300 and the livelihood of local farmers is central to the vision and operation of the project. By participating in the project smallholders can expect to treble their earnings on their forested land over the 40 year project term. Smallholders are also benefitting from both financial and practical assistance to increase efficiency and the yields on their remaining land through agro-forestry (e.g. cocoa and citrus fruits) and through collective bargaining and fair trade accreditation. A number of new nurseries have been also established which are privately owned by local families and employ hundreds of people at the height of the season.

Guidance for Replication

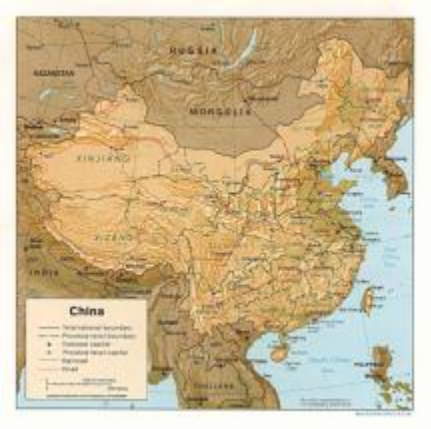
- The geographic distribution and isolation of individual parcels means that any incidence of fire, disease or insect attack is confined and will have little or no impact on other forestry parcels, providing highly effective natural, risk management.
- The cost of skilled manpower is compensated by carbon credit payments, which are only awarded if the project is able to show “additionality” the provision of social benefits (i.e. additional local employment) and environmental benefits (improved soils and biodiversity) that a purely commercial project would not consider. Thus the project is more likely to attract impact investors.
- Some of the species are faster growing but the most valuable timber is from trees, which may take 35– 40 years to mature. This is much longer than most commercial forestry enterprises will entertain so the ability to generate carbon credits and revenues from other environmental services while the trees are growing is extremely valuable.
- By aggregating and coordinating supplies for the larger timber merchants ArBolivia believes it is able to secure much higher prices than individual smallholders are able achieve by themselves. Current estimates indicate a premium of at least 300% and as much as 800% for more mature timber sold for export over that sold domestically. Smallholders therefore have a huge incentive to look after their forestry parcels.

- Small farmers had to decide to plant fast, medium or slow growing trees, which meant short, medium or long term returns on the sale of timber. The farmers chose the longer term and saw it has a sustainable forestry inheritance for their children.
- Shareholders can independently verify social and environmental improvements through ArBolivia's comprehensive online database and Google Earth. It is also possible to connect with individual farmers on the project's website (www.arbolivia.org) by viewing the individual parcels and the details of the farmers and also tree species associated with individual plots.

Further Information: http://www.arbolivia.org/index.php?mc=52*,*
http://www.3dinvesting.com/ms/cochabamba.coop/

Sustainable Forestry: CDM/Loan

Restoring Degraded Land: The World's First CDM Forest Project



Case Study: ***Guangxi Reforestation Project***

Tool Type: ***CDM/Loan***

Country: ***China***

The "Facilitating Reforestation for Guangxi Watershed Management in Pearl River Basin Project" is a program by the Government of Guangxi to establish a pilot biocarbon project of approximately 10,000 acres for carbon sequestration. The project is funded by the World Bank's BioCarbon Fund, in partnership with local government and timber companies. Under the terms of the contract, the World Bank agrees to a crediting period of 2006-2036 and a total of US $39.3 million in loans, equity and carbon finance has been invested in the project. The Project became the world's first registered CDM (Clean Development Mechanism) forest project in 2006.

Financial Instrument

The Guangxi Project, also called "Facilitating Reforestation for Guangxi Watershed Management in Pearl River Basin Project" is a program by the Government of Guangxi to establish a pilot biocarbon project of approximately 10,000 acres for carbon sequestration. The main objectives of this project are to sequester CO2 through forest restoration in small watershed areas, to improve soil and water erosion control and to improve income generation for local communities. The project is a component of the much larger Guangxi Integrated Forestry Development and Conservation Project (GIFDCP) and will operate under its guidelines.

The project is blending three types of financing from multiple sources: (i) World Bank loan of $5.15 million, (ii) loan from local commercial banks of $12.9 million, (iii) equity of $19.1 million from three sources: the Guangxi Zhuang Autonomous Region (local government), equity from the Guangxi Longlin Forestry Development Company Ltd. and participating farmers' contributions (private), and (iv) $2.2 million from carbon credits being purchased by the BioCarbon Fund as carbon is delivered. The

BioCarbon Fund is a public-private carbon Fund administered by the World Bank and amounts to a total of $39.3 million.

Resources from the World Bank loan and counterpart funds from the local government are used to cover project establishment costs, short-term loans from local commercial banks are used for covering operating and maintenance costs, and equity from Longlin Company, farmers and the local government is used for technical input, plantation management and payment for labor in the plantations.

The revenues from carbon credits, which are being generated ahead of other sources of income, serve as a stable source of income up to 2017 that contributes to the repayment of commercial bank loans in the short-term, helping to bridge the gap before revenues from timber harvesting are produced.

The World Bank, through its BioCarbon Fund entered into a contract to buy all carbon credits created by the project at the rate of US$4.50/ton C02e. The project is expected to receive its first carbon payment before the first half of 2011. Forty percent of the revenues will be used to repay the World Bank loan. From the remaining carbon income, 60% will go to participating farmers and 40% to the Longlin Forestry Development Company.

There are two key features under this project:

Barren lands are bundled from 27 villages in Cangwu and 12 villages in Huanjiang to form the total project size of 10,000 acres. A Shareholding agreement was created between the local land owners and three local forest companies: Luhuan Forestry Development Company, Kuangyuan Forest Farm and Fuyuan Forest Farms. Under this agreement, the three forest companies are responsible for all project costs, including development, monitoring, production for reforestation and forest management and product sales. The local landowners only need to contribute their individually managed or communal barren lands.

2007-ongoing: Support to Develop Financial Instrument

Developed in early 2005, the project became the world's first registered CDM (Clean Development Mechanism) forest project in 2006. In order to qualify for CDM status, the project had to identify an area with less than 20% tree cover. The World Bank stipulated that Geographical Information System (GIS) and Geographical Positioning System (GPS) had to be used to monitor the project.

Results

Revenues: Total income for the crediting period is estimated at $21.1million. Of that amount, $15million will come from added employment and $2 million will come from the sale of carbon credits.

Environmental Impact: The estimated total amount of carbon to be sequestered is 0.77megatons (Mt) of CO2 equivalent (CO2e) over a 30-year crediting period. The environmental benefits include enhancing biodiversity and ecosystem integrity, which encourage people to invest in sustainable land use.

Community Impact: About 20,000 local farmers will benefit from the project. The participation of households from four ethnic minorities brought financial benefit to underserved communities and also strengthened their ties to other stakeholders.

Carbon finance achieved by the reforestation activities has helped the project overcome investment barriers, such as lack of available bank loans for reforestation in degraded lands. Moreover, carbon finance is increasing the revenue from the land, making it economically attractive. The project is also promoting local community development by generating income to the local farmers through carbon revenues, wood products, resin and other forest products.

Guidance for Replication

The World Bank offers the following guidance, however, it is unclear that within the current world economy and taking into consideration the uncertain status of Kyoto and CDM that carbon credits will remain stable and viable and that the Guangxi Project will survive.

- A shareholding system can make this kind of project accessible to small landholders. A benefit sharing system can pool risk and extend benefits throughout participating communities.

- Carbon finance is helping to improve the economic attractiveness of the project, by increasing the internal rate of return (IRR) of the project to 10.6% (from 6% without the revenue from carbon credits). By making the project more economically attractive and increasing the confidence of stakeholders for providing equity, carbon finance is promoting public-private initiatives that is still not typical in forestry – a private company and farmers, the local government, and a local commercial bank are all participating.

- The revenues from carbon credits, which are being generated before revenues from timber harvesting, are a stable source of income that contributes to the repayment of the short-term commercial bank loan as long as carbon continues to be delivered. They are also independent from timber market risks. The fact that carbon revenues are received in hard currency (U.S. Dollars) and from a highly rated counterparty (World Bank) helps to further mitigate the loan repayment risk. By bridging the income gap and mitigating financing risk, carbon finance helped the project overcome investment barriers, namely the lack of commercial bank loans available for forestry activities in degraded areas.

- Using the equity available from the private timber company, participating farmers, and the local government for plantation management and technical input ensures the sustainability of the plantations as funds are earmarked for plantation maintenance. Solely relying on future carbon incomes for plantation maintenance might hamper the project as these could be at risk of being delayed or reduced.

- Performance-based payments such as carbon finance promote good project management and implementation. However, strategies need to be developed to ensure that these payments flow to the project in a timely and predictable manner and provide incentive mechanisms for the project entity to maintain good forestry management practices. The BioCarbon Fund provides annual payments to its projects based on implementation progress upon the completion of certain milestones. This is key to ensuring project sustainability and mitigating against non-permanence, but it involves a certain level of risk. BioCarbon Fund payments are provided before the carbon credits are certified and issued by the CDM Executive Board, which is not typical of the carbon credit business where certified credits are usually paid for upon delivery.

Further information: http://www.climatefinanceoptions.org/cfo/node/190

Cover Photo: *Ahmed Velazquez/UNDP*

Acknowledgements: This report is prepared by the Environmental Finance Center West at the School of Business & Leadership,
Dominican University of California. Special thanks go to the authors Sarah Diefendorf, Lauralee Barbaria, Nancy Roberts, and Floyd Fox, as well as Andrew Bovarnick for guiding this project onwards.

Production team: Laura Hildebrandt and Serena Bedwal, UNDP.

For more information: **www.undp.org/environment**
United Nations Development Programme
One United Nations Plaza • New York, NY 10017 USA