



*Empowered lives.
Resilient nations.*

International Guidebook of Environmental Finance Tools: A Sectoral Approach

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

CHAPTER 1: OBJECTIVES, TOOLS, & DEFINITIONS

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CHAPTER 1: OBJECTIVES, TOOLS & DEFINITIONS

Objective of the *Guidebook*

The objective of the *International Guidebook of Environmental Finance Tools* is to analyze and define finance tools that have been implemented in developing countries to protect the environment and promote sustainable development in four sectors. Understanding what works is just as critical as knowing what stands in the way. This *Guidebook* is designed to present a wide array of case studies and analyses to help decision-makers identify their opportunities, define their barriers, and understand the systemic conditions that either support or inhibit their financial decisions.

The *Guidebook's* goal is to provide guidance for countries to develop and implement the most common financial tools currently in use that support sustainable agriculture and forestry, pro-poor energy access, and protected areas. Climate change is addressed through the inclusion of carbon-based finance mechanisms in all four sectors.

The sectors included in the *Guidebook* were chosen because they are considered pivotal to a Green Economy, are aligned with UNDP's development mandate and will benefit from improved application of finance instruments for environmental management.

The *Guidebook* aims to show the patterns around successful finance tools in the sectors examined, and to delineate the systemic conditions that need to be in force for long-term financial stability and impact of the tools.

Target Audience

The *International Guidebook of Environmental Finance Tools* is intended for decision-makers and practitioners in government, NGOs and industry who are considering how best to develop and apply financial tools for environmental management in developing economies.

Finance Tool Choice

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 *Guidebook* did not attempt to assess innovative new financial tools, such as forest bonds, or tools with limited application, such as debt for nature swaps.

Financial Tools Included In the *Guidebook*

The *Guidebook* takes a sector approach (as opposed to tool focused) to the analysis because financial decisions tend to be based within a sectoral context. In other words, the Minister of Agriculture is unlikely to look at effective financial tools for solar energy. The sectors included in the *Guidebook* are sustainable agriculture, sustainable forestry, protected areas, and pro-poor energy access. Successful implementation of each tool requires different levels of complexity: some tools demand more time and financial sophistication than others.

While a wide array of financial tools was considered, research revealed that only a small number of options are being used the majority of the time for each sector in developing countries. Thus the *Guidebook* examines the use of the following financial tools – loans, fees and subsidies and to a lesser degree, taxes and payments for ecosystem services (PES).

In addition, the following tools are included in the analysis because they have the potential to address climate change concerns: market-based mechanisms (MBM), clean development mechanisms (CDM), and voluntary emission reductions (VERs). Depending on the sector, each financial tool has different degrees of effectiveness and use.

Case Studies

Each financial tool was explored through numerous case studies in the applicable sectors. Financial tool case studies were evaluated for the effectiveness of the tool including its level of success, community impact, pro-poor focus, environmental and biodiversity sustainability (including the potential to reduce carbon emissions), and financial sustainability. Criteria for selecting case studies included:

- Significant environmental benefit, either accrued or intended;
- Replicable in other developing countries;
- Financially sustainable over the long term; and
- Pro-poor emphasis that provides community level benefits.

Some patterns have emerged from the case studies: Table 1 shows that certain sectors tend to rely on some financial tools more than others. Indeed, for the most part, each sector relies on just one or two financial tools: for instance, loans and subsidies are most commonly used in energy, while fees predominate and PES serves as a secondary tool in the Protected Areas sector.

Overall, both energy and agriculture rely more on loans and subsidies. Sustainable agriculture and energy benefit from the up-front capital from loans and/or subsidies to allow scaling, implementation and market growth, but can ultimately become self-sustaining financially. Energy also benefits from the ability to extend patient, long-term loans and credit to its customers, without which affordability would be an insurmountable barrier.

Protected Areas and Sustainable Forestry focus more on the collection of fees, and to a lesser degree, PES for support. By their nature, protecting habitat and forests – and encouraging their restoration—often requires financial flow from the collection of up-front fees for preservation from users (such as industry or tourists) and potential users. Only a few developing countries use taxation as a tool to preserve forests and protected areas.

TABLE 1				
Table 1: Financial Tools	Sustainable Agriculture	Protected Areas	Sustainable Forestry	Pro-Poor Energy
Fees	●	●	●	○
Loans	●	○	○	●
PES*	○	○	●	○
MBM/CDM/VER**	○	○	○	○
Subsidies	○	○	○	●
Taxes	○	○	○	○
<p>● – predominant tool ● – secondary tools ○ = rarely used tool</p> <p>* Payment for Ecosystem Services (PES)</p> <p>** Market-Based Mechanism (MBM) Clean Development Mechanism (CDM) Voluntary Emission Reduction (VER)</p>				

Financial Tool Definitions and Case Studies

Below is the definition and general discussion of each financial tool, and the challenges and risks to successful implementation of the financial tools covered in this *Guidebook*. The case studies are from the 32 developing countries below:



FEES

Fee Definition – A fee is a compulsory charge levied by a governing body (government or organization) for a specific purpose and for which a specific return (quid pro quo) is provided to the payer. Examples of fees include: membership fees, entry fees, annual fees and user fees. Guidebook case studies that include fees are listed in the table below.

RELEVANT FEES CASE STUDIES			
Country	Sector	Tool	Case Study
Senegal	Agriculture	Membership Fee	Organic Banana Farmers Target Financial Independence in Senegal
Cambodia	Agriculture	Membership Fee	An Organic Producers' Association Provides Marketing Assistance, but Member Fees Fall Short
Belize	Protected Areas	Departure Fee	Fifteen Years of Revenue: "Conservation Fee" Portion of Departure Tax Funds Protected Area Trust
Indonesia	Protected Areas	Entry Fee	Decentralization and Tags: Effective Fee Collection in Bunaken Marine Park
Kenya	Protected Areas	Entry Fee	Technology and Entry Fee Collections: More Options for Revenue
Cameroon	Forestry	Annual Fee	NGO Oversight Required To Ensure Annual Forestry Fee Revenues Reach Village Level
Nepal	Forestry	Community	Community Forest Fee is Popular but Not Enough

RELEVANT FEES CASE STUDIES

Country	Sector	Tool	Case Study
		Fee	

LOANS

Loan Definition – Distribution of asset from lender to borrower with an expectation of repayment over time. A long-term loan to purchase a solar home system is an example of a loan. Perhaps the most commonly used environmental finance tool in the developing world, there are many variations and innovations on loan structures. Loans can be short or long (patient) term and can include microfinance, credit, rent, customer advances and installments, and supplier and trade finance. Guidebook case studies that include fees are listed in the table below. In four of the case studies, loans are bundled with subsidies to make them more affordable.

RELEVANT LOAN CASE STUDIES

Country	Sector	Tool	Case Study
Bangladesh	Energy	Microfinance	Grameen Shakti Finances 500,000 Solar Homes in India
Honduras	Energy	Credit	Rural Communities Discover Biofuel as an Affordable Answer to Energy needs (GotaVerde)
Kenya	Energy	Installments	Business in a Box Thinks Out of the Box to Provide Solar to Rural Poor (ToughStuff)
Laos	Energy	Rent	Village Energy Committees Bring Light to Rural Communities (Sunlabob)
India	Energy	Patient Loan	Biogas Domes Reduce Waste and Bring Light (Ministry of New and Renewable Energy)
Haiti	Energy	Subsidized Loan	Entrepreneurs Bring Light to Rural Haiti (Sirona Cares)
Tunisia	Energy	Subsidized Loan	Subsidizing Solar in Tunisia (PROSOL)
India	Energy	Subsidized Loan	Indian Solar Home Program (UNEP)
Ghana	Energy	Subsidized Loan	Achieving the 4 “E”s: Energy, Efficiency, Employment and Environmental Protection (Toyola)

RELEVANT LOAN CASE STUDIES

Country	Sector	Tool	Case Study
Bhutan	Forestry	Patient Loan	Organic Lemongrass Oil Certification Supports Sustainable Forestry Practices and Boosts Village Revenues
India	Forestry	Patient Loan	Soft Loan Supports Forests While Alleviating Poverty
Morocco	Agriculture	Customer Advance	Consumer Bridge Loans: Community Supported Agriculture Aids Farmers and Develops Local Market
Uganda	Agriculture	Supplier Loan	Taking Money Out of the Equation: <i>Fruits of the Nile's non-monetary loans to farmers</i>
Peru	Agriculture	Trade Finance	Supporting Cocoa and Coffee Over Cocaine through Trade Finance Loans
Tanzania	Agriculture	Trade Finance	Built to Last: A Long-Term Lending Relationship Leads to Sustainable Local Enterprise

PAYMENT FOR ECOSYSTEM SERVICES (PES) AND MARKET-BASED MECHANISMS (MBM)

MBM Definition – For the purposes of this Guidebook, Market-based Mechanisms are processes that match buyers and sellers of intangible ecosystem products in which prices fluctuate, for example the market for carbon offsets.

PES Definition – A definition for PES that has become fairly well accepted is put forward by Sven Wunder: “A payment for environmental services scheme” is:

1. a voluntary transaction in which
2. a well-defined environmental service (ES), or a form of land use likely to secure that service
3. is bought by at least one ES buyer
4. from a minimum of one ES provider
5. if and only if the provider continues to supply that service (conditionality).” (Wunder, 2005)

PES and MBM variations include ecotourism, ecosystem service certificates, preservation incentives and carbon credits. Guidebook case studies that include PES/MBM are listed in the table below.

RELEVANT PES/MBM CASE STUDIES

Country	Sector	Tool	Case Study
Cambodia	Protected Areas	Ecotourism	Nest Eggs: Payment for Ecosystems Services (PES) – Ecotourism Builds Linkages Between Conservation and Economic Improvement
Mexico	Protected	Premium	Premium Offsets: Sierra Gorda Carbon/Integrated Offsets

RELEVANT PES/MBM CASE STUDIES

Country	Sector Areas	Tool Carbon	Case Study
Madagascar	Protected Areas	Carbon Credits	Carbon Credits Bring Benefits to Forest Villages
Ecuador	Forestry	Preservation Incentives	Paid to Preserve: Ecuador's Programa Socio Bosque Incentivizes Landholders to Halt Deforestation
Paraguay	Forestry	Carbon Credits	Oil Industry Service Provider Seeks Carbon Neutrality by Funding Preservation of Paraguay Rainforest

CLEAN DEVELOPMENT MECHANISMS (CDM) AND VOLUNTARY EMISSION REDUCTION (VER)

CDM Definition – CDM allows a country with an emission-reduction or emission-limitation commitment under the Kyoto Protocol to implement an emission-reduction project in developing countries. Such projects can earn saleable certified emission reduction (CER) credits, each equivalent to one ton of CO₂, which can be counted towards meeting Kyoto targets. A CDM project must provide emission reductions that are additional to what would otherwise have occurred. (UNFCCC)

VER Definition – VER is a general term used to describe a class of carbon credits produced outside of a legal framework such as the Kyoto Protocol. In the past decade, the VER market has grown rapidly in response to an increased demand for VERs in the voluntary offset market. Project developers generate VERs. They are then usually sold to retailers or aggregators, who can sell them to individuals and organizations as carbon offsets, in which case they are taken off the market and cannot be resold, or to investors who hold them for future use. (Climate Lab)

Guidebook case studies that include CDM/VER are listed in the table below.

RELEVANT VER/CDM CASE STUDIES

Country	Sector	Tool	Case Study
Mexico	Protected Areas	VER	Premium Offsets: Sierra Gorda Carbon/Integrated Offsets
Brazil	Energy	VER	Subsidizing Efficient Cookstoves with Carbon Credits
Bolivia	Forestry	CDM/VER	CDM-Approved Investments Fund Saplings in Bolivia
China	Forestry	CDM	Restoring Degraded Land: The World's First Clean Development Mechanism Forest Project in Southern China

SUBSIDIES

Subsidy Definition – Subsidies come in many forms and are usually used to supplement another financial tool such as a loan. Subsidies may be a direct payment from the government, or a tax reduction to a private party, for implementing a practice the government wishes to encourage. (UNDP, 2011) Subsidies can also be realized through CDM and VERs when carbon reduction revenue is used to lower the price of a product, or through start-up grants and other tools such as a sliding scale where wealthier clients pay more to offset prices for those with less. Guidebook case studies that include subsidies are listed in the table below.

RELEVANT SUBSIDY CASE STUDIES			
Country	Sector	Tool	Case Study
Brazil	Energy	VERs	Subsidizing Efficient Cookstoves with Carbon Credits
Brazil	Energy	Sliding Scale	Hydro System Lets Users to Pay What they Can (CRELUZ)
Haiti	Energy	Grant	Entrepreneurs Bring Light to Rural Haiti (Sirona Cares)
Tunisia	Energy	Grant/Govt.	Subsidizing Solar in Tunisia (PROSOL)
India	Energy	Govt. Subsidy	Indian Solar Home Program (UNEP)
India	Energy	Govt. Subsidy	Biogas Domes Reduce Waste and Bring Light (Ministry of New and Renewable Energy)
Ghana	Energy	VERs	Achieving the 4 “E”s: Energy, Efficiency, Employment and Environmental Protection (Toyola)
Kenya	Agriculture	Insurance Premium Sharing	Input Insurance Program Grows with Shared Premiums and Mobile Technology
China	Agriculture	Input	Community-wide Conversion: Local Government Supports an Entire Township’s Transition to Organic
Tunisia	Agriculture	Investment	Applying Foreign Investment Incentives to Organic Agriculture
Philippines	Agriculture	Govt. Subsidy	Supporting Urban Agriculture by Providing Plastic Pots and a Savings Scheme

TAXES

Tax Definition – Compulsory charge levied by a government on an individual or organization’s product, income or activity to finance government activity. A departure tax that supports protected areas is an example of an environmental finance tax. There are myriad variations and innovations of taxes worldwide including departure, fuel and hotel taxes. Guidebook case studies that include taxes are listed in the table below.

RELEVANT TAX CASE STUDIES			
Country	Sector	Tool	Case Study
Palau	Protected Areas	Departure	Gone but Not Forgotten: Addition of “Green Fee” to Departure Tax Support Protected Area Network
Macedonia	Protected Areas	Hotel	”Bed Tax” to Support Protected Areas in Macedonia Starting in 2011
Costa Rica	Forestry	Fuel	A Little Goes a Long Way: Small Percentage of Fuel Tax Pays for Sustainable Forestry

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