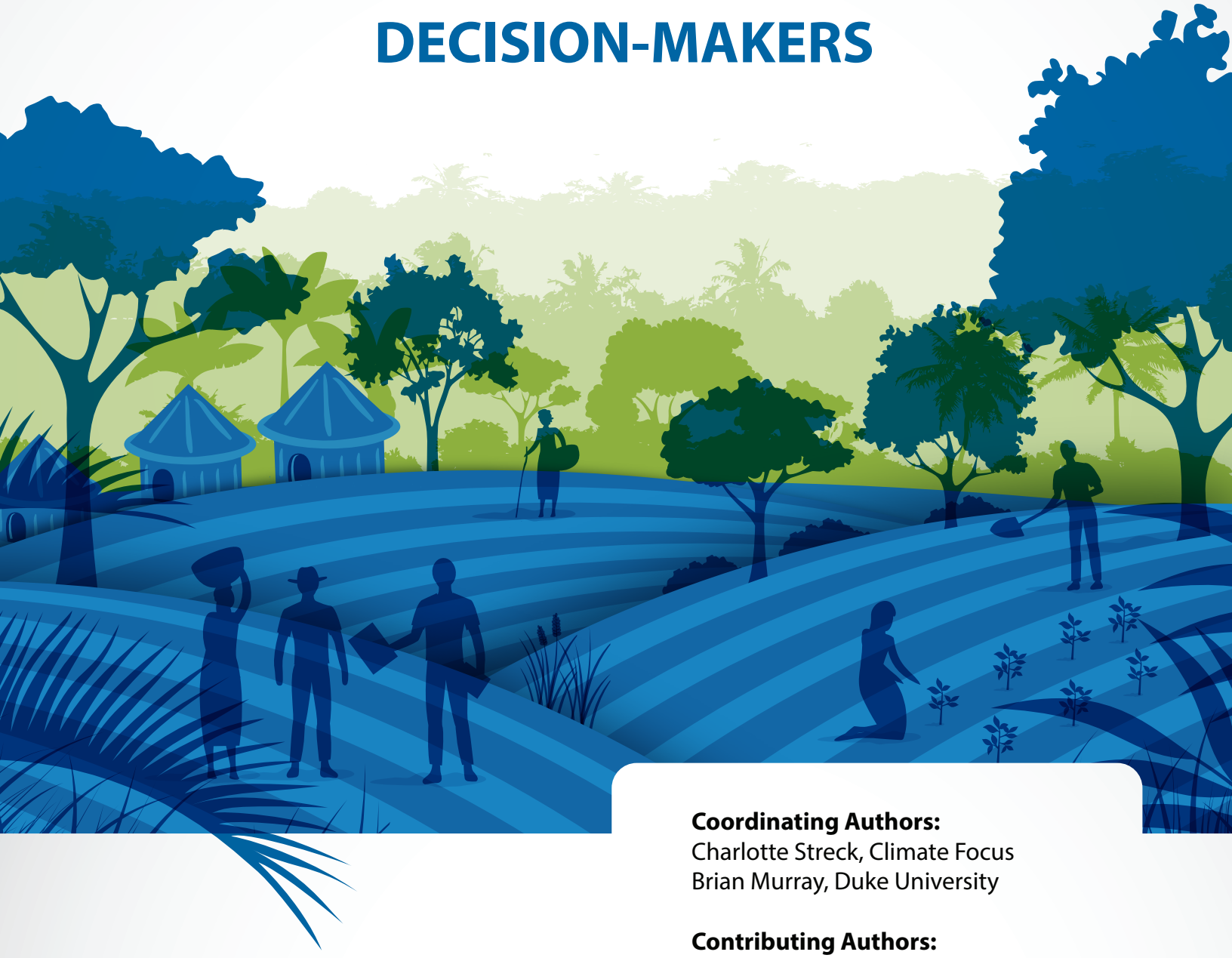
FINANCING LAND USE MITIGATION: A PRACTICAL GUIDE FOR DECISION-MAKERS



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Contents

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Glossary and Acronyms

ACGSF	Nigerian Agriculture Credit Guarantee Scheme Fund
ADB	Asian Development Bank
ADL	Local development agent (translated from Spanish *agencias de desarrollo local*)
ADLI	Agricultural Development-Led Industrialization
AECID	Spanish Agency for International Development Cooperation (translated from Spanish *Agencia Española de Cooperación Internacional para el Desarrollo*)
AEZ	Agro-Ecological Zoning
AF	Adaptation Fund
AfDP	African Development Bank
AFRP	Brazilian Atlantic Forest Restoration Pact
ARPA	Amazon Region Protected Areas Program
ATL	Local technical agents
ATREDD+	Mexican REDD+ Early Action Areas
BNDES	Brazilian National Development Bank (translated from Portuguese *Banco Nacional de Desenvolvimento Econômico e Social*)
BOA	State Bureaus of Agriculture
BMZ	German Federal Ministry for Economic Cooperation and Development (translated from German *Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung*)
Carbon credits	Credits, also referred to as offsets, are awarded to projects, organizations or governments that verifiably reduce their GHG emissions below their emission quota. One carbon credit is equivalent to an emission reduction of one metric tonne of CO_2e.
Carbon sequestration	The removal of carbon from the atmosphere into carbon stocks or sinks through physical or biological processes (e.g., photosynthesis).
CBFF	Congo Basin Forest Fund
CGF	Consumer Goods Forum
CIDA	Canadian International Development Agency
CIF	Climate Investment Funds
Climate-smart agriculture	An integrated approach seeking sustainable increase in agricultural productivity, adaptation, and climate-resilience building of agricultural and food security systems, and reduction of GHG emissions from the agricultural sector.
CO_2e	Carbon dioxide equivalent is a measure used to compare emissions from various GHGs based upon their global warming potential.

Co-benefits	Benefits arising from REDD+ policies and projects in addition to climate mitigation benefits, such as enhancing biodiversity, enhancing adaptation to climate change, alleviating poverty, improving local livelihoods, improving forest governance and protecting rights.
COMACO	Community Markets for Conservation (in Zambia)
CONAFOR	Mexican National Forest Commission (translated from Spanish *Comisión Nacional Forestal*)
CONABIO	Mexican National Commission for Knowledge and Use of Biodiversity (translated from Spanish *Comisión Nacional para el Conocimiento y Uso de la Biodiversidad)*
CRGE	Climate Resilient and Green Economy
DFI	Development finance institutions
DFID	United Kingdom Department For International Development
DPL	Development policy loan
DRC	Democratic Republic of the Congo
EBRD	European Bank for Reconstruction and Development
Ecosystem Services	Services or benefits provided to humans by ecosystems. They comprise provisioning, regulating, supporting and cultural services.
EIB	European Investment Bank
ENAREDD+	Mexican National REDD+ Strategy (translated from Spanish *Estrategia Nacional para REDD+*)
Environmental impact assessments	A process of evaluating possible environmental impacts of a proposed policy or project, taking into account inter-related socio-economic, cultural and human-health impacts, both positive and negative.
Emission reductions	Reductions in GHG emissions from a set reference level. Once certified these reductions are tradeable on carbon markets in form of certified emission reductions.
FCC	Forests and Climate Change Cooperation Package
FCPF	Forest Carbon Partnership Facility
FFM	Mexican Forest Fund
FINADE	Mexican National Financing Agency for Agricultural, Livestock, Rural, Forestry and Fisheries Development (translated from Spanish *Financiera Nacional de Desarrollo Agropecuario, Rural, Forestal y Pesquero*)
FINAGRO	Colombian fund for financing the agricultural sector (translated from Spanish *Fondo para el Financiamiento del Sector Agropecuari*)
FIP	Forest Investment Program
FLEGT	European Union Action Plan on Forest Law Enforcement, Governance and Trade
FMCA	Mexican Fund for the Conservation of Nature (translated from Spanish *Fondo Mexicano para la Conservacion de la Natraleza*)
FMO	Dutch Development Bank (translated from Dutch *Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden N.V.*)
FOMIN	Multilateral Investment Fund (translated from Spanish *Fondo Multilateral de Inversiones*)

GCF	Green Climate Fund
GEF	Global Environment Facility
GERD	Grand Ethiopian Renaissance Dam
GGW	Great Green Wall project
GHG	Greenhouse Gas
GIZ	German Corporation for International Cooperation (translated from German *Deutsche Gesellschaft für Internationale Zusammenarbeit*)
GRIF	Guyana REDD+ Investment Fund
GTP	Ethiopia's Growth and Transformation Plan
GWFP	Global Warehouse Finance Program
HDI	Human Development Index
HQ	Headquarters
IBAMA	Brazilian Institute of Environment and Renewable Natural Resources (translated from Portuguese *Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis*)
ICMS-E	Brazilian ecological value-added tax
IDA	International Development Association
IDB	Inter-American Development Bank
IFAD	International Fund for Agricultural Development
INDC	Intended Nationally Determined Contributions
IP	Investment Plan
ISFL	BioCarbon Fund Initiative for Sustainable Forest Landscapes
KfW	The German government-owned development bank (Reconstruction Credit Institute) (translated from German *Kreditanstalt für Wiederaufbau*)
LAIF	Latin American Investment Facility
Land titling	A term to describe program to enable individuals and the state to efficiently trade in rights in land and property
LED	Low emissions development
LIFT	Land Investment for Transformation Program in Ethiopia
MDBs	Multilateral Development Banks
MFIs	Microfinance Institutions
MEF	Ethiopian Ministry of Environment and Forest
MOA	Ethiopian Ministry of Agriculture

MoFED	Ethiopian Ministry of Finance and Economic Development
MoU	Memorandum of understanding
MoWIE	Ethiopian Ministry of Water, Irrigation and Energy
MRV	Measurement, reporting, and verification are essential for the transparency and credibility of GHG climate benefits. An adequate MRV system is built on protocols and methodologies, technical infrastructure and human capacities.
MSMEs	Micro, Small & Medium-sized Enterprises
NBE	National Bank of Ethiopia
NICFI	Norway's International Climate and Forest Initiative
Non-carbon benefits	A wide range of positive outcomes resulting from REDD+ activities beyond those associated with avoided GHG emissions and/or carbon sequestration
ODA	Official Development Assistance
OFL	Oromia Forested Landscape
OFWE	Oromia Forest and Wildlife Enterprise
OPIC	Overseas Private Investment Corporation
Payments for ecosystem services (PES)	A concept of payments to reward people for their efforts in improved environmental management and provision of ecosystem services
PFM	Participatory forest management
PIDG	Private Infrastructure Development Group
PPPs	Public-private partnerships
PPSA	Costa Rican Payments for Environmental Services Program (translated from Spanish *Programa de Pago por Servicios Ambientales*)
PRONAFOR	Mexican National Forestry Program (translated from Spanish *Programa Nacional Forestal*)
Protected Area (PA)	A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve long-term conservation of their recognized natural, ecological and associated cultural values.
PSA	Mexican Payments for Forest Environmental Services Program (translated from Spanish *Pagamento por Servicios Ambientales*)
PSNP	Productive Safety Net Program
REDD+	Reduced Emissions from Deforestation and forest Degradation and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks
Reference Level	A reference level, expressed in tonnes of carbon dioxide equivalent per year, serves as a benchmark for performance of implemented activities. Reference levels can be implemented at national, subnational, or project scales. Project-specific reference levels are often referred to as 'baselines.'
Registry	A REDD+ registry is a tool that helps to transparently account for GHG emissions and removals. Where linked to carbon trading programs, a registry can also provide an infrastructure for the tracking and trading of carbon credits and allowances.

REM	REDD+ Early Movers – a results-based finance initiative, commissioned by the BMZ and jointly implemented by the KFW and GIZ, to reward Early Movers – pioneers of forest and climate protection – for verified emission reductions at the national or subnational level.
Results-based finance (RBF)	An approach that conditions donor payment on the achievement of particular results. In the case of REDD+, it is assumed that results that qualify for payment are measured in reductions of forest related GHG emissions and forest carbon stocks against a reference level. RBF is understood to incentivize performance, lead to a better targeting of resources, encourage improved monitoring and evaluation of results, and transfer some of the risk of non-performance (or cost overruns) to the recipient.
Results-based payments	Provide financial incentives and disburse resources against demonstrated and independently verified results that are largely within the control of the recipient.
Safeguards	Safeguards define criteria to prevent and mitigate undue harm in the process of implementing a project, program, or policy. Safeguards may also provide operational guidelines in the identification, preparation, and implementation of programs and projects. Strategic assessments of environmental and social implications help to design effective and equitable policies.
SAGARPA	Mexican Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (translated from Spanish *Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación*)
SEMARNAT	Mexican Ministry of Environment and Natural Resources (translated from Spanish *Secretaría del Medio Ambiente y Recursos Naturales*)
SIL	Specific Investment Loan
SLMP	Sustainable Land Management Program
SMEs	Small and medium enterprises
SPS	Sanitary and phytosanitary standards
SRM	Sector Reduction Mechanism
SFM	Sustainable Forest Management
TFA	Tropical Forest Alliance
TNC	The Nature Conservancy
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
VCS	Verified Carbon Standard
ZEE-AC	Ecological and Economic Zoning Plan

Abstract

Forest loss accounts for a large share of emissions in many developing countries, often driven by pressure to feed growing populations and foster economic development. This has prompted efforts at the international level to promote policies and resources for Reducing Emissions from Deforestation and Degradation (REDD+), while promoting other sustainable land-use objectives. Developing and implementing mitigation objectives in the context of low emissions development (LED) strategies requires a commitment of financial resources to succeed. Recognizing this, international and domestic institutions in the public and private sectors have stepped forward with pledges to supply capital or otherwise create economic incentives to meet these needs. However, in order for this capital and these incentives to influence land use and emissions, those making the land-use decisions need access to the resources. The purpose of this report is to define the different categories of activities that parties take to reduce emissions and promote sustainable land use, and then to connect them to the types of financial instruments and sources of funds that can be tapped to enable the activity. The target audience for the Report includes: (i) policy-makers at the national and regional level who need to understand and facilitate the connection between the emission reducing activities that require finance and the instruments and sources of funds that can provide it, and (ii) land managers who are seeking finance for specific activities they are trying to implement. The Report distills the many potential relevant activities, instruments and sources into practical guidance so that both of these audiences can make well-informed decisions to effectively reduce forest emissions and promote sustainable land use and economic development.

1 Introduction and Overview

The world's nations are now considering how they can contribute to efforts to reduce greenhouse gas (GHG) emissions and engage in low emissions development (LED) under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC). Many countries are focusing their emission reduction efforts on actions in the land sector. These actions include: Reducing Emissions from Deforestation and Degradation, conservation of forest carbon stocks, sustainable management of forests and enhancement of forest carbon stocks (collectively called REDD+); as well as other actions toward sustainable land use. These efforts may not only reduce GHGs, but can also generate co-benefits such as improved agricultural productivity, biodiversity protection, and enhanced rural livelihoods.

There are many actions that countries can undertake in pursuit of these goals, from the establishment of national policies to investment in sustainable land management. However, while the protection of forests and other natural resources can create substantial benefits for society, they typically incur costs and therefore require finance to undertake. There is a range of potential sources of finance for these activities, as well as many alternative financial instruments to deliver the funds, but many actors are not aware of the instruments available. The purpose of this report is to: (i) help national policy-makers connect specific land-use actions to the sources of funds and instruments available for financing them, and where possible, (ii) provide a "finance guide" for parties responsible for implementing actions on the ground.

1.1 Background

The international policy framework that provides incentives for REDD+ and other climate policies focused on LED has motivated many developing country governments to review their land-use policies. To reduce emissions effectively, policy-makers have developed strategies that seek to protect forests and reduce forest-related GHG emissions while promoting economic development and preserving valuable natural resources. The acts of forming policies, implementing activities, and monitoring progress involve resource costs. Moreover, a policy of reducing emissions from forests and other land uses may incur opportunity costs, i.e., foregone income from timber, crops, and livestock.

To reduce forest-related emissions, policy-makers and actors on the ground in developing countries can define policies and measures that address drivers of deforestation and enhance forest carbon stocks. To support these efforts, actors can seek access to financial mechanisms (such as loans, grants, and other instruments) made available through national and international, public, and private finance. These instruments may be supported by additional international finance for REDD+ and LED efforts through bilateral and multilateral sources. These funds come with different conditions and timetables, have varying levels of predictability, and reward different activities. Additional funds to support these finance instruments may come from national, public, as well as private sources. Mobilizing and coordinating revenues, matching them with different policy measures, and ensuring their sustainability poses a significant challenge for policy-makers and other actors. A key issue is that those who implement measures to reduce emissions are also seeking to ensure that distribution of resources is socially and politically acceptable, and financially sound over time.

In many developing countries, GHG emissions from forests and land use are significant, thus any attempt toward a LED pathway involves addressing land-use emissions. Activities and policies that reduce forest-related emissions also have the potential to contribute significant non-carbon benefits, for example, reducing rural poverty through new livelihood options in forest areas and increased agricultural productivity. These activities and policies can also preserve economically valuable ecosystem services beneficial to local populations, including species conservation and water flow and quality. REDD+ and LED can also contribute to climate change adaptation, as many proposed actions to reduce pressure on forests also increase climate resilience, such as conservation agriculture, agroforestry, and protection of carbon-rich coastal and marine ecosystems.

To ensure sustainability, efforts to reduce forest emissions are often linked to other policy priorities. If done properly, implementation of measures that reduce forest emissions can also advance other national priorities in the forest, agriculture, and biomass energy sectors, among others. Most developing countries are currently pursuing activities and policies to increase agricultural productivity of smallholders to ensure food security and reduce rural poverty. Increased agricultural productivity is also important for effective REDD+ and LED outcomes, as most deforestation in the tropics is currently due to conversion to agricultural land. A significant portion of agriculture-driven deforestation, however, is from medium to large agribusiness and not closely related to poverty reduction.

Another example of a synergy between REDD+ and national development priorities is in expanding energy access for the poor. Increasing clean energy access or improving the efficiency of biomass energy can directly reduce forest loss and degradation. Moreover, REDD+ and LED policies emphasize improved forest governance, which can also increase government tax revenue collection and produce more equitable benefits when they are distributed among local communities. Hence, climate finance can provide incentives to implement some of the country's priorities, while contributing to global public goods and climate change mitigation.

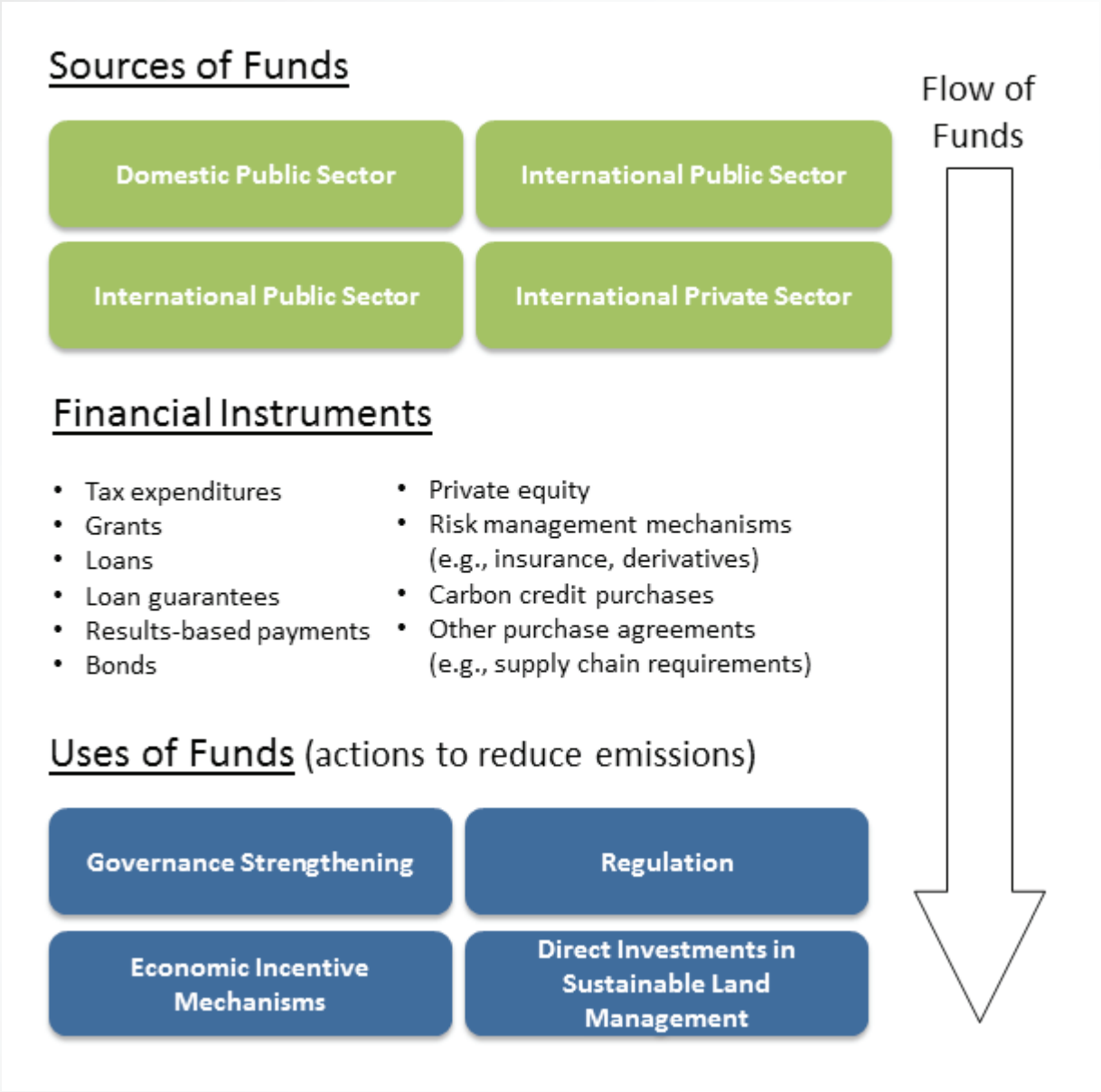
1.2 Objectives and Roadmap of the Report

The Report "Financing Land Use Mitigation: A Practical Guide for Decision-Makers" (the Report) serves as a practical guide for those seeking finance to implement specific actions to reduce emissions from land use. It is intended to assist national policy-makers and other decision-makers in accessing and leveraging financial instruments to support activities that reduce forest GHG emissions and increase forest carbon stocks. These instruments may draw from national budgets, international and national funds, and private investments as sources of funds. By categorizing, defining, and connecting activities, tools, and sources of finance, the Report offers practical guidance to land managers and decision-makers to pursue finance options. Figure 1 summarizes how actions on the ground are connected to financing decisions, as well as the structure of the Report.

The Report addresses the following questions confronting policy-makers responsible for ensuring adequate finance for achieving REDD+ and LED goals:

1. What activities and parties need finance, and why?
2. What financial instruments are available to support the activities, and what are the sources of funds, national and international, behind these instruments?
3. What are the practical financing options for parties implementing specific actions on the ground (e.g., from developing a national land-use strategy to undertaking a local reforestation effort)?
4. What can be learned from the experiences of key countries implementing forest, conservation, and LED policies to date? How did these countries decide what to finance, how to finance it, and how was finance ultimately secured?

Figure 1. Flow of funds from source to use



To achieve these objectives, the Report is organized into three parts.

Part I distills the key elements of the Report and serves as a guide for decision-makers endeavoring to arrange and implement finance for activities that reduce forest emissions and advance sustainable land use. The first chapter in Part I (Report Chapter 2) presents a rough reference guide that defines financing options for specific land-based LED actions and connects specific actions with typical finance instruments and sources of funds. While it does not provide an exhaustive list of all possible actions and options, it does lay out a basic decision-making framework, the content of which makes up the main body of the Report in Parts II and III. Chapter 3 synthesizes the Report's analytical content, identifying connections between types of activities and the specific instruments that may be available to finance them. It also develops recommendations for national policy and decision-making.

Part II contains a more detailed presentation of the potential uses and sources of funds and finance instruments that can connect the two. Chapter 4 lists the types of policies and activities that decision-makers within a country can pursue to reduce forest emissions, advance sustainable land use, and address the finance needs created by these policies and activities. Chapter 5 identifies the financial instruments and sources of funds that could be deployed to achieve the policies and measures defined in Chapter 4. These instruments draw from sources of finance dedicated to climate funds, as well as broader funding programs, tools or mechanisms that could be used to direct finance to the land sector. The latter could include the alignment and expansion of funds supporting existing programs in forestry, agriculture, Payments for Ecosystem Services (PES), and rural energy development.

Part III is an in-depth exploration of relevant experiences in raising finance for low emission, sustainable land-use activities in two countries: Mexico (Chapter 6) and Ethiopia (Chapter 7). Both countries share ambitious REDD+ and LED goals and have committed substantial effort in national policy-making to meet these goals, yet there are important differences in their respective natural environments, macroeconomic conditions and institutional experiences in financing and implementing activities of this nature. These cases provide a range of useful lessons for those embarking upon strategies to reduce emissions and promote sustainable land use.

PART I - Guidance for Decision-Makers

2 Financing Options for Policies and Measures: A Reference Guide for Decision-Makers

This section serves as a quick reference guide for decision-makers seeking to finance the development or operational costs for activities that reduce emissions from forests and other lands, and for policy-makers seeking to design a financing strategy as part of a REDD+, forest, or climate change strategy. The targeted decision-makers include a wide range of government and civil society actors such as a government agency seeking to finance the costs of developing land-use policy or a land manager seeking funds to support reforestation efforts.

Table 1 links general categories of policies and measures (e.g., governance strengthening) with specific actions (e.g., land-use planning); types of costs incurred (e.g., planning and transaction costs); common finance instruments for the type of action (e.g., grants from international donors); points of contact for access to those instruments (e.g., country coordinators); and provide specific examples from around the world.

The categories and examples are not exhaustive, but serve to offer indicative guidance on the types of financing tools which might support different activities on the ground. Table 1 also serves to provide a quick reference to the basic structure of the complex financing problem that the Report as a whole addresses.

Table 1. Basic Finance Guide for Decision-Makers

Policy/ Measure/ Action	Cost categories involved (see section 4.2.1)	Financing instrument options	Instrument providers	Typical points of contact for accessing instruments	Examples
Governance Strengthening					
Development of a national strategy	Planning and transaction costs: Inter-ministerial coordination, consultation processes, economic evaluation (cost-benefit analysis, opportunity cost assessments), legal assessments, policy design	International public finance: Grants. In the case of REDD+, often as part of readiness packages (see Table 13)	Bilateral development agencies	Country coordinators and officers, program managers (e.g., USAID, GIZ, DFID, AfD, etc.)	The development of REDD+ strategy in Ethiopia with support from the UK and Norway, and from a FCPF grant
		As part of larger sectoral investments, implementation often supported by sector loans	Multilateral development banks (MDB), UN and other international organizations	Country focal point at MDB, environment officer in the field, managers of trust funds (e.g., FCPF or UN-REDD staff), FLEG-T officers at the EU Commission	
		Domestic public finance: Ministry budgets: tax revenues or fees	Finance, planning, forest or environment ministries	Line minister and responsible staff in the ministry	
		Private finance: Philanthropy, foundations, NGOs, support for defined aspects of the planning process that are in line with the mission and strategy of the organization	Program and country staff of foundations and NGOs	Country or program officers (e.g., from foundation)	

Policy/ Measure/ Action	Cost categories involved (see section 4.2.1)	Financing instrument options	Instrument providers	Typical points of contact for accessing instruments	Examples
Land-use planning (zoning)	Planning and transaction costs: Stakeholder consultations, measurements, etc. Implementation costs: Land demarcation, participatory land-use processes, etc.	International public finance: Grants, technical assistance or public sector loans, often linked to agricultural or forestry programs	Bilateral development agencies	Country coordinators and officers, program managers	Ethiopia's participatory land-use planning supported by the Sustainable Land Management Program (SLMP) of the World Bank
			MDBs, UN and other international organizations	Country focal point at MDB, agricultural officer in the field	
		Domestic public finance: Ministry budgets: tax revenues or fees	Finance, planning, forest or environment ministries	Ministers of agriculture and/ or planning, responsible staff in the line ministry	
Clarification of title and property rights (often part of land-use planning and zoning)	Planning and transaction costs: Stakeholder consultations, setting up land registries, adoption of legislation protecting land rights, etc. Implementation costs: Land demarcation, issuance, registration of titles, etc.	International public finance: Grants often linked to technical assistance, support of legal assistance programs	Bilateral development agencies	Technical assistance and legal support programs, contact via country offices or assigned officers in headquarters (HQ)	
			MDBs, UN and other international organizations		
		Domestic public finance: Ministry budgets: tax revenues or fees	Planning, interior or justice (legal affairs) ministries	Line minister, responsible staff in the line ministry	

Policy/ Measure/ Action	Cost categories involved (see section 4.2.1)	Financing instrument options	Instrument providers	Typical points of contact for accessing instruments	Examples
Creation or enhancement of extension services, technical training	Planning and transaction costs: Definition of training needs, identification of training provider, allocation of responsibility between private and public partners Implementation costs: Delivery of the training program, farmer outreach	International public finance: Grants, technical assistance, public sector loans	Bilateral development agencies MDBs, UN and other international organizations.	Agricultural and rural development officer (in country or HQ) often to be negotiated as part of a larger rural development program	Training programs, which are necessary for participating in contract farming (outgrower) systems, are often promoted by the public sector. Training is organized through extension services. Investment comes from the private sector (e.g., Rural Income Promotion Programme and Support Programme for the Rural Microenterprise Poles and Regional Economies). Brazil's Low-Carbon Agriculture Program, Outgrower Schemes
		Domestic public finance: Ministry budgets (budgetary finance), as part of a public-private partnership (PPP), with private co-financing, as part of agricultural subsidies	Agriculture, planning, forest or environment ministries, national investment agencies (establishing links to international investors)	Line minister, responsible staff in the line ministry	
		Private finance: PPPs (see Table 6), in-kind support, off-take agreements, contract farming	Impact investors, agribusiness companies	Investment officer (impact investors), sustainability or procurement officers of supply chain companies	

Policy/ Measure/ Action	Cost categories involved (see section 4.2.1)	Financing instrument options	Instrument providers	Typical points of contact for accessing instruments	Examples
Improvement of law enforcement	Imple-mentation costs: Increase institu-tional capacity (personnel), build new agencies, decentralize, procure equip-ment, train staff	International public finance: Grants, technical assistance, public sector loans (as part of sectoral programs and investment packages), payments from results-based finance programs	Bilateral devel-opment agencies	Investment officers, coun-try or HQ staff, programs that support REDD+ (e.g., Germany's REM program)	Kenya's forest law enforcement and governance, including detec-tion, prevention and suppression, to enhance com-pliance with for-mal regulations that endorse sus-tainable forest management (SFM[1]) ; the EU's FLEGT program to promote SFM, through measures that tackle illegal log-ging countries[2]
			MDBs, UN and other internation-al organizations	Investment officers who develop sectoral programs, administrators of special programs, (e.g., EU FLEGT)	
		Domestic public finance: Ministry budgets: tax revenues or fees	Finance, planning, forest or environ-ment ministries	Line minister and responsible staff of the ministry	

[1] Mathu, W., (2001). Forest Law Enforcement and Governance in Kenya. Kenya Forest Service. Retrieved from: http://www.profor.info/search/google/law%20enforcement?query=law%20enforcement&cx=014516580788237218894%3Acyz3fatw1j0&cof=FORID%3A9&sitesearch=.

[2] EU FLEGT Facility, (2014). Evaluation of the EU FLEGT Action Plan. Retrieved from: http://www.euflegt.efi.int/eu-flegt-evaluation

Policy/ Measure/ Action	Cost categories involved (see section 4.2.1)	Financing instrument options	Instrument providers	Typical points of contact for accessing instruments	Examples
Regulation					
Establishment of logging bans and other land-use restrictions	Planning and transaction costs: Often in coordination with implementation of land-use planning and zoning and/or establishment of protected areas (PAs) Implementation costs: Through law enforcement, institutional strengthening, capacity building, training, additional human resources, vehicles and equipment	International public finance: Grants, loans, results-based finance (conditional on successful implementation of command-based regulations), linked to the establishment of PAs or forest sector reform programs	Bilateral development agencies	Country coordinators and officers, program managers (e.g., USAID, GIZ, DFID, AfD, etc.) in charge of forestry sector or PAs (e.g., biodiversity experts)	Land-use or logging regulations, restrictions and bans exist in almost all countries (e.g., the Philippines' moratorium on the cutting and harvesting of timber in the natural and residual forests[3] and Indonesia's moratorium on new concessions in primary natural forest and peat land[4])
			MDBs, UN, and other international organizations	Country focal point at MDB, environmental officer in the field, trust fund officers who support protected areas	
		Domestic public finance: Budgetary finance: tax revenues or fees and fines, concession payments	Ministry in charge of forestry and/or protected areas	Line minister and responsible staff at the ministry	
		Private finance: Grants supporting the establishment and maintenance of PAs	NGOs and philanthropy that support the establishment and maintenance of PAs	Program staff of foundations or NGOs	

[3] The Philippine Government Executive Order No. 23 (2011). Retrieved from: http://www.gov.ph/2011/02/01/executive-order-no-23-4/.

[4] The Republic of Indonesia Presidential Instruction No. 10/2011 (2011). Retrieved from: http://www.unorcid.org/index.php/document-library/redd-in-indonesia?chronoform=Form_List_Pub2_Public&event=submit.

Policy/ Measure/ Action	Cost categories involved (see section 4.2.1)	Financing instrument options	Instrument providers	Typical points of contact for accessing instruments	Examples
Implementation of standards (technology- or performance-based), often combined with a certification requirement	Planning and transaction costs: Definition of performance goals or technologies to be used Implementation costs: Training, enforcement costs, certification of outcomes	International public finance: Sector loans, PPPs (see Table 6) and guarantees; banks may make the application of certain standards obligatory.	Bilateral development agencies, Development Finance Institutions (DFIs)	DFIs that support private sector investments (e.g., IFC, OPIC, DEG, etc.), investment officers for the respective country or region	Bolivia's SFM project (BOLFOR) includes SFM certification in forestry legislation[5]. Forest certification with the Forest Stewardship Council (FSC) is mandatory in order for both communities and industrial groups to obtain and maintain forest concessions in the Maya Biosphere Reserve in Guatemala.
			MDBs, UN and other international organizations		
		Domestic public finance: PPPs, private finance entities (e.g., FSC[6], CCBA[7]) or public standards are conditional on public programs (subsidies).	Environmental or forestry ministries to establish standards, agricultural and forestry ministry to support standards via land investments		
		Private finance: Private sector to finance sustainable operation with public support for training (extension), combined with certification	Impact investors, dedicated funds, quasi-public finance organization, domestic banks	Desk officer of finance organization (national) who supports an investment program, investment officer of the respective fund, potentially also timber companies (supply chain investors)	

[5] ISEAL Alliance, (2008). Case Study: Bolivia and Forest Stewardship Council Standards. Retrieved from: http://www.isealalliance.org/search/apachesolr_search/Bolivia.

[6] Forest Stewardship Council (FSC).

[7] Climate, Community and Biodiversity Alliance Standard (CCBA).

Policy/ Measure/ Action	Cost categories involved (see section 4.2.1)	Financing instrument options	Instrument providers	Typical points of contact for accessing instruments	Examples
Implementation of Environmental Impact Assessments (EIAs)	Implementation costs: Analysis, assessment of alternative sites and investment options	Domestic public finance: Budgetary resources for review and approval of EIAs EIAs are financed in the context of public programs and investments.	Ministry in charge of environmental compliance	Desk officer for environmental compliance	Almost all countries have EIA requirements, but not all of them assess climate impacts. Malaysia's EIA framework requires assessment of possible environmental impacts of intended actions, including suitable mitigation measures[8]; see also New Zealand's EIA guidelines[9].
		Private finance: Any investment triggering EIA requirements	Infrastructure and larger scale investors (also public investors)	Project developers, staff in charge of legal compliance	

[8] Malaysian Department of Environment, (2007). Environmental Impact Assessment (EIA) Procedure and Requirements in Malaysia, Revised. Malaysian Department of Environment. Retrieved from: http://webcache.googleusercontent.com/search?q=cache:dFg4QVV4UfMJ:www.doe.gov.my/eia/wp-content/uploads/2013/06/EIA-Procedure-and-Requirements-in-Malaysia.pdf+&cd=2&hl=de&ct=clnk&gl=de.

[9] Department of Conservation, (n.d.). The Guide to Preparing Your Environmental Impact Assessment (EIA) for Concession Applications. Retrieved from: http://www.doc.govt.nz/get-involved/apply-for-permits/managing-your-concession/environmental-impact-assessment/.

Policy/ Measure/ Action	Cost categories involved (see section 4.2.1)	Financing instrument options	Instrument providers	Typical points of contact for accessing instruments	Examples
Economic Incentive Mechanisms					
Creation or expansion of a Payments for Ecosystem Services (PES) program	Planning and transaction costs: Program design, selection of areas, consultations, legal and institutional assessment, opportunity costs calculation, financial planning Implementation costs: Program administration, maintenance of institutional capacity, costs associated with incentive payments	International public finance: Grants to set up PES, loans, results-based payment programs	Bilateral development agencies, DFIs	AfD, DfID, USAID, KfW program officers, REM, NICFI, FCPF, for results-based payments for REDD+ Country focal point or responsible regional / country manager at HQ, technical assistance officers (e.g., GIZ)	CONAFOR's subsidies and PES programs (see case study Mexico, Chapter 6); Ecuador's Socio Bosque Program[10]; Costa Rica's Payments for Environmental Services Program (PPSA)[11], Mexico's Payments for Forest Environmental Services Program (PSA)[12], the Sloping Land Conversion Programme or the "Grain for Green" initiative in China that pays farmers to set aside land for afforestation
			MDBs, UN and other international organizations (e.g., GEF)	Country focal point at MDB HQ, environmental, agricultural, forestry officer in country office, GEF secretariat	
		Domestic public funding: National budgets, fees and fines, user fees	Finance, forest, water, agriculture, or environment ministries, fees (e.g., water management districts, large water users, national park fees, tourism taxes)	National PFIs as PES-implementing agencies (e.g., Mexican Forest Fund, BNDES in Brazil, FINAGRO in Colombia, or FONAFIFO in Costa Rica)	
		Private sector funding: Grants (establishment of PES). Results-based payments, equity or debt investment (implementation of PES)	Philanthropy, foundations, carbon investors, sustainable timber investors	Country or program officers Investment officers at dedicated carbon funds (e.g., Althelia Ecosphere Fund), timber, impact funds	

[10] de Koninga, F., et al., (2011). Bridging the gap between forest conservation and poverty alleviation: the Ecuadorian Socio Bosque program. Environmental Science & Policy 14, pp. 531-542.

[11] Rodriguez Zuñiga, J. M., (n.d.). Paying for forest environmental services: the Costa Rican experience. FAO. Retrieved from: http://www.fao.org/docrep/005/y4744e/y4744e08.htm.

[12] Comisión Nacional de Áreas Naturales Protegidas (CONANP), (n.d.). Programa de Pago de Servicios Ambientales en Áreas Naturales Protegidas. Retrieved from: http://www.conanp.gob.mx/acciones/programa.php; This includes Mexico's Hydrological Environmental Services Program (PSAH) and Payments for Carbon and Biodiversity Services Program (PSA- CABSA).

Policy/ Measure/ Action	Cost categories involved (see section 4.2.1)	Financing instrument options	Instrument providers	Typical points of contact for accessing instruments	Examples
Tax reform: tax credits, preferential tax treatment, environmental taxes	Planning and transaction costs: Legal assessment, opportunity costs calculation, financial planning Implementation costs: System operating costs (institutions) and program costs (payments, tax credits, etc.)	Domestic public finance: Tax waiver, reduction, credits, increased taxes for activities not in line with public policy goals	Financial ministries, with the support of line ministries	Finance minister and responsible staff at the ministry	Brazil's ecological value-added tax (ICMS-E)[13]; Malaysia's tax incentives for forest plantations[14]
Establishment of loans and rural credit programs	Planning and transaction costs: Program design, opportunity cost assessment, institutional strengthening, capacity building, technical assistance Implementation costs: Program administration, maintenance of institutional capacity, costs associated with loan-making	International public finance: Loans, guarantees, public results-based programs (aid on delivery or carbon payments)	Bilateral development agencies, DFIs MDBs, UN and other international organizations (e.g., GEF)	Investment officers (e.g., IFC, DEG, etc.), results-based payments via FCPF, BioCarbon Fund, NICFI or KfW/REM	Brazilian Central Bank's rural credit in the Amazon (see Box 2); Brazil's Low Carbon Agriculture Program, a credit and capacity-building initiative that provides farmers with access to credits at low interest rates and offers a prolonged repayment period[15]
		Domestic public finance: Loans, mobilization of establishment costs via national budgets, possibly also via green bonds	National DFIs and quasi-public finance organizations, implementing agencies	Investment officer at public finance organizations	
		Private finance: Private capital	Commercial banks, investors in agricultural and forestry activities	Investment officers in private banks	

[13] GIZ, (2014) Environmental Fiscal Reform Case Studies. Retrieved from: http://www.giz.de/expertise/downloads/giz2014-en-environmental-fiscal-reform-case-studies.pdf.

[14] Ministry of Finance Malaysia, (2014). Tax incentives. Retrieved from: www.treasury.gov.my/index.php?option=com_content&view=article&id=698&Itemid=2535&lang=en.

[15] ABC Observatório, (2013). Low Carbon Agriculture: The Evolution of a New Paradigm.

Policy/ Measure/ Action	Cost categories involved (see section 4.2.1)	Financing instrument options	Instrument providers	Typical points of contact for accessing instruments	Examples
Establishment of credit guarantee programs	Planning and transaction costs: Program design, legal and financial assessment Implementation costs: System operating costs (institutions) and program costs (guarantees)	International public finance: Guarantees (and international loans to finance guarantees)	Development guarantee organizations, development banks	Investment officer (mostly at HQ) of e.g., OPIC, MIGA, KfW USAID, and other guarantors	The Agriculture Credit Guarantee Scheme Fund (ACGSF) was established in 1977 by the Central Bank of Nigeria (CBN), which also manages the system. ACGSF provides guarantees for loans to agriculture.
		Domestic public finance: Guarantees	National DFIs and quasi-public finance organizations, implementing agencies	Investment officer at quasi-public finance institutions, DFIs	
Direct Investments: Management of public lands					
Establishment and management of protected areas (PA) on public lands	Planning and transaction costs: PA design, consultations, costs assessment, legal and financial planning Implementation costs: Operating and management of PA	International public finance: Grants, loans that support sustainable rural development in and around the PA	Bilateral development agencies, DFIs	Country coordinators and officers, program managers (e.g., USAID, GIZ, DFID, AfD, etc.)	Brazil's Amazon Region Protected Areas Program (ARPA) (see Box 3)
			MDBs, UN and other international organizations (e.g., GEF)	Country focal point at MDB, environment officer in the field, managers of trust funds (e.g., FCPF or UN-REDD staff)	
		Domestic public finance: Budgetary finance to set up PA, income through user fees, tourism, sale of timber and non-timber products	Environment or forestry ministry	Operator of the PA, staff in ministry	
		Private finance: Investment (debt, equity) in sustainable sourcing of products (timber, non-timber), carbon finance	Impact and carbon investors, supply chain investors	Investment officer, procurement staff at agricultural company	

Policy/ Measure/ Action	Cost categories involved (see section 4.2.1)	Financing instrument options	Instrument providers	Typical points of contact for accessing instruments	Examples
Establishment of programs for afforestation/ reforestation, sustainable management of forests, and forest sector investments	Planning and transaction costs: Investment planning, selection of areas, financial planning, IEA Implementation costs: Staff, seedlings, maintenance of plantation, management of forest, marketing and possibly also processing of timber	International public finance: Loans, results-based payments	Bilateral development agencies, DFIs	Country coordinators and officers, program managers (e.g., USAID, GIZ, DFID, AfD, etc.), carbon buyers	Uganda's Sawlog Production Scheme (see Table 10)
			MDBs, UN and other international organizations (e.g., GEF)	Country focal point at MDB, environment officer in the field, managers of trust funds	
		Domestic public finance: Mobilization of resources via national budgets, timber sales, concession fees	Forestry ministries, investment agencies, public forest companies (e.g., OFWE in Ethiopia)	Investment officer at forest company, entity/department in charge of concessions	
		Private finance: Investment in plantation and forestry (loan, equity, debt), value-added investment, processing (e.g., construction of processing plant to add value to community-managed forestry)	Timber investors, wood product companies, carbon investors	Private managers, investment officers of funds, timber procurement lead (for country/ region), sustainability officer, investors in processing plants, carbon buyers	

3 Findings and Recommendations

This chapter draws from material presented in subsequent chapters to provide recommendations for developing country decision-makers and implementers. The information offered relates to financing activities that reduce forest GHG emissions, increase forest carbon stocks, and promote sustainable land use. The relevant decision-makers include national policy-makers devising means to attract and allocate finance for the activities, as well as those responsible for implementation of them on the ground. This chapter summarizes the Report's key findings, describes how different sources of finance can be matched with activities, and discusses how decision-makers can leverage public and private finance both nationally and internationally.

3.1 National Planning Processes

A process to attract and allocate finance at the national level can draw upon the following findings of this Report:

Implementing a sustainable land-use (REDD+, forestry, climate, LED) strategy will require the integration and leveraging of multiple funding sources. This integration process should build on a clear understanding of what is required to address the drivers of deforestation and degradation at multiple scales and across multiple agents, including the REDD+ policies, government programs, and land manger activities that will change behaviors in order to protect and enhance forests and support other sustainable and productive land uses. Determining how much finance is needed and how to maximize the sources of funds available to governments requires: (i) identifying policies, programs and measures to be facilitated and funded to support sustainable land use strategies, including LED and REDD+; (ii) identifying available and acceptable sources of finance; and (iii) matching activities with financial sources.

Financial planning requires a clear understanding of the different sources of funding and their characteristics. Some sources of finance are more reliable than others, some are easier to obtain, and some can be used freely according to management priorities, while others come with conditions attached. Public grants, loans or guarantees have conditions and financing terms that differ from private sector investments. Some funding mechanisms take a long time and much effort to establish and therefore may not meet short-term needs, but over the longer term may offer steady, reliable financing to meet recurring costs.[16]

Financing sustainable land use policies must draw on private as well as public funding sources. Forest and land use financing strategies should aim to raise additional finance, promote sustainable resource management, and align policy objectives across sectors. Leveraging private sector funds will be essential for the implementation of a successful national land use policy. It will also have to be a key consideration in defining national policies that seek to mobilize finance or incentivize behavioral change of private actors.

The financial framework should include a combination of policies that seek to achieve LED and REDD+ goals and allocate finance among them. Governments should allocate resources to incentivize and stimulate the transition toward a more productive and sustainable landscape. Fiscal and human resources should be allocated to establishing regulation that uses economic measures to direct human action away from damaging forest exploitation to more sustainable activities (sustainable forest management (SFM), climate-smart agriculture, etc.) and investment (e.g., forestation, establishment and management of

[16] Task Force on Economic Benefits of Protected Areas for the World Commission on Protected Areas (WCPA) IUCN, in collaboration with the Economic Services Unit of IUCN, (1998). Economic Values of Protected Areas: Guidelines for Protected Area Managers, No. 2. IUCN the World Conservation Union. Retrieved from: https://portals.iucn.org/library/efiles/documents/PAG-002.pdf

PAs). Economic measures that set incentives should be sufficiently flexible to:

- Accommodate local conditions that are specific to the target area and the intervention
- Mobilize sector investments
- Meet requirements of identified and potential sources of finance
- Allow for integration with other government policies (e.g., food security, energy, transport, infrastructure).

3.2 Matching Policies and Finance

Those seeking to advance policies and measures must understand which sources and instruments are best suited to fund specific activities. Public grants, loans, or guarantees come with conditions and financing terms that differ from those used in private sector investments. International donors may link their support to other results than national governments do. This section matches the policies and measures presented in Chapter 4 with the financing options, sources of funds, and financial instruments listed in Chapter 5. The analysis is supported with examples from the case studies in Chapters 6 and 7.

3.2.1 Financing governance measures

Enabling conditions are critical for the mobilization of finance for land-based investments. The investment climate can be negatively affected by a number of factors, including insufficient capacities and resources to manage finance, donor and investor concerns about governance, insecure land tenure, illegal activities, and issues associated with eligibility[17]. Measures that can improve forest governance include national policy development, strengthening of enforcement capacities, training and capacity building, technical assistance, land titling and certification. Table 2 provides some examples.

Investment into forest and land-use governance remains limited, although REDD+ readiness programs (see section 5.1.2) have brought important additional resources to developing countries. Efforts to improve awareness among legislators and policy-makers about the role of forest law enforcement and governance in national development could pay dividends in the form of an improved investment climate[18].

Improvement in governance is typically supported by grants since governance measures are unlikely to generate revenues directly and in a way that could be used to pay back a loan. It is also difficult to attribute direct climate results (emission reductions) to governance measures. This hinders the attraction of results-based finance for such activities. There are, however, a number of governance measures that increase the competitiveness of the forest sector. These measures are expected to result in increased revenues; they include the conversion of public forest institutions into semi-autonomous commercial enterprises, a tactic which has been used to improve self-financing from the forest sector[19]. Table 2 summarizes the fiscal context of governance measures.

[17] Advisory Group on Finance Collaborative Partnership on Forests, (June 2012). 2012 Study on Forest Financing, for the UN Forum on Forests. The United Nations. Retrieved from: http://www.un.org/esa/forests/pdf/AGF_Study_July_2012.pdf

[18] Ibid.

[19] Ibid.

Table 2. Overview of Policy Mechanisms Associated with Governance Measures

Policy mechanisms	Establishment of rules and institutions aimed at improving conditions for sustainable land management
Examples	Establishment of LED and REDD+ national strategies; land titling (e.g., LIFT program in Ethiopia for Land Certification); increased enforcement activities and strengthening of forest institutions (e.g., the World Bank's Philippines Environment and Natural Resource Sector Adjustment Program); technical assistance (extension) and capacity building
Advantages	Essential for the long-term success of any land-use strategy and measure condition for mobilization of investments
Disadvantages	Expenditures do not generate a direct return; emission reductions are not attributable.
Costs incurred/ financing needs	Needs assessment, program development, and development of decentralized capacities; investment in public capacity, which includes new staff, higher salaries, training; strengthening and review and reform of existing institutions
Sources of finance	Planning and administration costs: readiness funds, share of larger investment programs Implementation: sector loans from DFIs, governance programs (FLEG-T), technical assistance (e.g., GIZ)
Instruments	Grants, public sector budget allocations (e.g., to line ministry), sectoral loans from DFIs

3.2.2 Financing regulatory measures

Land-use policies and measures can be implemented via regulation, norms or special planning, and zoning ordinances. These measures are the preferred tool for forest policy in many developed countries, where they impose land-use restrictions or forest management requirements. Formulated rules have a direct influence on the behavior of actors by restricting or demanding actions by the target group. These rules have a legal basis; enforcement and control is a key element in their success.

Regulatory measures are often less effective in developing countries with low enforcement capacities. The effectiveness of regulation depends on strong governance that can promote and maintain: the rule of law, anti-corruption measures, and the resources to promulgate and enforce.

Policies such as land-use planning or restrictions in land uses can be efficient and cost-effective regulatory tools. Costs of regulatory measures often consist of planning and transaction costs, related to policy formulation and consultative processes. Implementation costs are often limited to enforcement costs. They can, however, include compensation payments, in particular where logging bans involve the cancellation of concessions. Regulatory measures can be cost-neutral or even provide income in the long-run if fees, fines, and concession payments are used to finance the measure.

When considering land use restrictions, policy-makers must consider the extent to which important economic actors may suffer harm. Land use restriction can lead to substantial social welfare distributional effects, including reduced incomes for communities depending on restricted use, and higher prices for restricted goods and activities.

Measures may be implemented to mitigate the negative effects of command-and-control measures, but care needs to be taken that these adjustments do not hinder effectiveness or raise total costs substantially.

Table 3 summarizes advantages, disadvantages, and finance considerations for command-and-control measures that focus on direct restrictions or mandated behaviors affecting land use.

Table 3. Overview of Policy Mechanisms Associated with Regulatory Measures

Policy mechanisms	Regulations, norms and standards, enforcement of zoning
Examples	Land-use restrictions: logging bans (e.g., state-owned forests in China, including the upper reaches of the Yangtze River and the middle and upper reaches of the Yellow River since 1998; Philippines since 1970; Thailand in response to devastating floods in 1989) or SFM requirements (e.g., mandatory forest certification in Russia)
Advantages	Regulation defines a predictable environmental outcome. It codifies the minimum standard of protection and resource use. Fiscally, there is little direct financial burden on national budgets. It can be funded in part by revenues raised through fees and fines.
Disadvantages	Regulation may be more costly than alternatives if restrictions are rigid and do not allow parties flexibility in compliance. Restrictions and standards are only effective in countries with enforcement capacities and an efficient rule of law. In sectors and areas where investment is desired (e.g., agriculture, energy), restrictions may not be sufficient to ensure policy outcomes.
Costs incurred/ financing needs	Planning and administration costs: Policy formulation, and consultation Implementation costs: Personnel time, vehicles, equipment, fuels, etc. to develop, communicate and enforce regulations Opportunity costs: loss in income to individuals and the government from now-restricted activities
Sources of finance	Grants for policy design, e.g., as part of REDD+ readiness or accompanying measure of an economic incentives program. Finance for program implementation often comes from national budgets, possibly supported by donors, results-based and other finance for REDD+.
Instruments	Establishment: Tax revenues or fees, grants, loans, results-based finance (conditional on successful implementation of command-based regulations) Implementation: Fees, fines, potentially concession payments

3.2.3 Financing economic incentive mechanisms and related measures

Economic incentive mechanisms influence land-use decisions by affecting the costs or benefits of an activity, good, or service that affects the environmental outcomes of interest. Relevant policies based on economic measures include PES, tradable permit systems, taxes and subsidies, use fees and other mechanisms, across different sectors (see Table 4). They can be separated into instruments that: (i) pay those who provide an environmental service (e.g., payments for hydrological services under PSA-H program in Mexico); or (ii) that charge a fee for access to an environmental service (e.g., water rights payments in Vietnam). Taxes can be structured to allow preferential treatment for activities that lead to emission reductions, carbon stock enhancement, and sustainable land use. Other forms of subsidies include loan and credit guarantees that reduce investment risk.

Economic instruments such as environmental taxes or fees can both create an incentive and raise revenue. The relative importance of these factors depends on the ability of the actors to respond to the price signal. Unlike regulations, environmental taxes allow the targeted actors to pay for damage they cause (e.g., deforestation), thus avoiding (or deferring) expenditure to mitigate the harm[20]. Taxes, on the other hand, can help ensure that users pay an appropriate share of public or government-provided goods. They can also be used to finance behaviors that support the implementation of activities that advance public goals, such as sustainable land management. Polluter charges, such as charges to water users, can help to finance PES systems, as is done with Vietnam's Afforestation PES, which is financed by water fees imposed on hydropower and water supply companies.

Policies that establish strong economic (property) rights for sustainable use of forests and other land may also support regulatory effectiveness. Property rights that are clear and accepted by all parties add security and flexibility to the management of natural resources. Clear property rights may improve the ability of private actors to finance these measures by ensuring they can access the economic returns resulting from their investments.

Setting the right level of incentives or taxes requires careful economic analysis. Positive incentives like PES, subsidies, or tax breaks are inefficient when established too high and ineffective when set too low. The costs of providing economic incentives depend on the planning and transaction costs for their design and implementation. These costs can also depend on the opportunity costs of foregoing the activity that the incentive is trying to reduce (e.g., forest clearing for agriculture). Incentives should take into account the opportunity costs as well as additional implementation costs (program management, institutional costs, etc.). Taxes should be set to recover both the direct costs of goods and services plus the environmental cost associated with producing and using a particular resource.

Funds that support the implementation of economic incentives often flow via national budgets. National budgets in turn can be replenished by income from environmental taxes and user fees that support the same environmental goals as the incentive programs (see Chapter 5). PES for community forestry, for example, can go along with fines for illegal logging, concession fees and taxation of certain agricultural practices. Incentive programs can also be supported by international public funds, including those that are performance-based. The Ethiopian Oromia Forested Landscape (OFL) project (Chapter 7) is an example of a program that receives public results-based finance, while the SLMP is supported by a more traditional World Bank loan. In both cases, economic instruments constitute the core element of the programs that are supported by a wide range of capacity building, technical assistance and investment activities. The OFL program puts additional emphasis on the integration of private sector incentives.

[20] Karsenty, A., (2000). Economic instruments for tropical forests, the Congo Basin case. CIFOR, CIRAD, IIED.

When international resources support economic incentive mechanisms, it is important that the nature and conditions of the mechanism correspond to the financial requirements of the identified activity.

- **Loans** are a preferred and viable policy tool when the policy requires financial support in the planning and establishment phase but is otherwise financially sustainable in the long term through revenues received. An example of a loan-supported economic policy is the Costa Rican PES, which was set up with the help of a World Bank loan. Today the system is self-financed by fees imposed primarily on fossil fuels that help support payments to farmers and landowners for preserving private forest land.
- **International grants** normally support activities that build an enabling environment without generating direct returns for the host country. Grants often support capacity building or technical assistance activities that support the economic program (e.g., GEF support for PES establishment in Colombia, Costa Rica, and Nicaragua: Regional Integrated Silvopastoral Ecosystem Management Project (USD 4.5 million)). Readiness activities are also supported by grants.
- **Results-based payments**, conditional on achieving specific outcomes, may be attractive where a country is confident it can mobilize the funds needed to cost-effectively achieve the agreed results with the payment terms expected. In climate policy most results are measured in tonnes of CO_2e avoided or sequestered, and payments are made against a national or subnational reference level (e.g., REDD Early Movers (REM) payments to Acre or Ecuador, Forest Carbon Partnership Facility (FCPF) Carbon Fund or Norwegian NICFI programs).
- **Equity** investments from DFIs or other sources are geared towards supporting the private sector (see section 5.2 below). Equity can, in principle, provide finance for economic instruments that generate financial returns that can be shared with the equity investors (e.g., carbon credit projects).

Economic incentive programs can use many instruments to deliver incentives, including government loans, tax breaks, PES, grants, etc. (see Table 4). An example of government loans that support environmental goals is the BNDES administered credit line that makes loans for agricultural activities in the Amazon region, conditional on presenting proof of compliance with environmental regulation (see Box 2). Loan guarantees may reduce the investment risk for those financing sustainable agriculture or forestry activity. The Colombian finance institution FINAGRO guarantees a certain percentage of credit lines to financial intermediaries that extend loans to farmers. Government programs may also support market access – for example, Community Markets for Conservation (COMACO) is a novel community-based enterprise that aims at reducing poverty and hunger among thousands of poor farmers while saving wildlife and forest habitat[21].

Incentive programs are often managed by national finance institutions, such as the Mexican Forest Fund, BNDES in Brazil, FINAGRO in Colombia, or FONAFIFO in Costa Rica. Where countries lack financial institutions with satisfactory fiduciary capabilities, international organizations may step in and manage funds on behalf of the government, such as the Guyana REDD Investment Fund which is managed by the World Bank as trustee. Countries may also establish a new fund, as in the case of the CRGE Facility in Ethiopia. Many countries have established national forest funds to enable public forest institutions to retain and manage funds that effectively support conservation, protection, and the sustainable utilization of forests. Mali established two forest funds in 2004, namely the Forest Development and Protection Fund and the Fund for the Protection of Fauna[22]. These funds help to ensure that revenues generated through utilization of forests and fauna respectively are plowed back into forest and fauna management. Similar approaches have been developed and adopted in other West African countries such as Benin, Burkina Faso, and Niger[23].

Table 4 summarizes advantages, disadvantages, and finance considerations for economic incentive mechanisms and related measures.

[21] Advisory Group on Finance Collaborative Partnership on Forests, (2012). 2012 Study on Forest Financing. The UN Forum on Forests. Retrieved from: http://www.un.org/esa/forests/pdf/AGF_Study_July_2012.pdf

[22] Ibid.

[23] Schmidt-Pramov, Matta, (2014) National Forest Funds, Toward a solid architecture and good financial governance; GIZ, BMZ, FAO. Advisory Group on Finance Collaborative Partnership on Forests, (June 2012) 2012 Study on Forest Financing, for the UN Forum on Forests.

Table 4. Overview of Policy Mechanisms Associated with Economic Incentive Mechanisms and Related Measures

Policy mechanisms	PES, environmental taxes and user fees, targeted subsidies, results-based payments
Examples	Water user fees, Mexican PES program for hydrological services (PSA), rural credit in Brazil, PFM in Ethiopia, afforestation in China, Community Markets for Conservation (COMACO) in Zambia
Advantages	Well-designed economic instruments are flexible and efficient. They can capture otherwise unpriced benefits and costs to society of a particular activity. They include payments (direct and indirect) for users and providers of environmental services and can provide sustainable sources of funds.
Disadvantages	The optimal level of incentives is often difficult to establish, just as the optimal level of regulation is. Programs normally incur relatively high upfront costs (establishment of institutions, setting of incentives, program design) that require capacity building and technical assistance. PES schemes are not yet broadly applied and require enabling policy frameworks.
Costs incurred/ financing needs	Planning and administration costs: program design, opportunity cost, institutional strengthening, capacity building, technical assistance. Implementation costs: program administration, maintenance of institutional capacity, costs associated with incentive payments. This measure can raise revenue through user fees and taxes, or may be cost-neutral if payments from polluters raise revenue for those that receive payments.
Sources of finance	Domestic budgets, international public finance from DFIs, REDD+ payments. Implementation of economic incentive programs can leverage national and international private capital (e.g., by lowering the risk of investment into sustainable land management through PES or subsidies that reduce the risk profile of an activity, or by making finance available through local finance institutions and dedicated credit lines). Programs can also be supported by payments from polluters.
Instruments	Establishment: grants (for program design), loans or advances on results-based payments (for program roll-out) Implementation: national budgets, international payments for results, payments from users, fees, and fines Instruments implementing economic measures: credit and lending instruments, tax instruments, direct payments to ecosystem service providers, and guarantees

3.2.4 Financing direct investments in public land management

In many developing countries, large areas of forest land are owned by the state, which – within the limitations established by the law – has authority over that land. In doing so, the government can support the delivery of environmental goods and services in a manner consistent with the principles of sustainable development, poverty reduction, and good governance. To achieve sustainable land management, the government may support climate-smart agriculture; invest in community forest management, plantations or SFM; or may establish PAs.

Public land management activities can affect populations by expanding or limiting access to the land and its resources. Land investments such as afforestation or establishment of SFM on public land may result in a sacrifice either by those who are currently consuming a resource or by those benefiting from its consumption. Moreover, the state itself may end up losing potential revenue, for example, where land is designated as a PA. In such cases, compensation for lost benefits and alternative development opportunities should be considered both for equity and promoting the effectiveness of the intervention. This is particularly relevant in countries where most of the community land is state-owned.

Domestic public sector financing is the major source of financing for forest-related activities in many countries, and generally is derived from government revenue and revenues generated from state-owned forests[24]**.** Publicly-owned forest companies often have insufficient resources to finance activities due to small agency budgets. Some countries have established mechanisms or instruments to support municipalities who engage in sustainable land use activities. For instance, since 1992, some Brazilian states have been distributing a part of their value-added tax (the Imposto sobre Circulação de Mercadorias e Serviços - ICMS) to municipalities based partly on environmental criteria, and India has announced that it will allocate USD 6 billion per year in tax revenue to encourage forest conservation[25].

Land management activities can be financed by public budgets, international finance, or private sector investments:

- **Protected areas (PAs).** Domestic government budgets are the single largest source of PA financing in most countries. In addition to domestic government budgets, many PAs in the developing world rely on funding from international agencies and other foreign donors. Significant funding can also come from private sources, including business, and philanthropic foundations as well as non-governmental organizations and local communities. The state can either manage the PA publicly or grant concessions for the management of all or parts of a PA.
- **Forestation (afforestation/reforestation).** Forest plantations can be established directly by the state and financed by domestic government budgets. However, land can also be managed by private actors that afforest the land and manage the resulting forest sustainably. Apart from the standard features of capital investments, forest plantations are particularly long-term in nature.
- **Sustainable forest management (SFM).** Under SFM, public lands, including forests, are managed sustainably (both environmentally and financially) in line with public policy goals. The forest can still generate returns and income for the public sector. Where the state does not wish or is unable to manage the forest directly, rights can be issued to private sector investors or local communities.

Table 5 summarizes examples of financing arrangements for public land management investments.

[24] Advisory Group on Finance Collaborative Partnership on Forests, (June 2012) 2012 Study on Forest Financing, for the UN Forum on Forests.

[25] Busch, J. (February 2015) India's Big Climate Move, Center for Global Development. Retrieved from: http://www.cgdev.org/blog/indias-big-climate-move

Table 5. Overview of Policy Mechanisms Associated with Direct Investments in Public Land Management

Policy mechanisms	State ownership and/or management of land
Examples	National park system in Brazil supported by VAT surcharge; China's investment in land management and afforestation; The Great Green Wall project in the Sahel Zone that supports national programs for economic development and environmental protection in the region
Advantages	State can control land activities directly, decide where to prioritize investments and pursue public policy goals directly
Disadvantages	Lands may be mismanaged if budgets are insufficient, enforcement of rights and responsibilities is weak, or decision processes lack transparency.
Costs incurred/ financing needs	Limited planning costs, but costs to set up a functioning and well-trained forest service can be significant. Once system is in place, revenue can be generated through forest and land management. Direct costs: agency personnel, capital, equipment and materials to plan, oversee, implement and enforce land use and practices (if executed by parastatals)
Sources of finance	Planning and administration costs: grants for PA establishment, institutional budgets or private monies from forest management companies for set up and enabling costs, international public loans Implementation costs: revenues (e.g., logging concessions, royalties and access fees from the private sector), grants (for PAs), loans (for forestation and SFM), payments for results for forestation, SFM and community forest management and revenue creation through sales of timber and non-forest products
Instruments	Direct budgetary allocation, loans, philanthropy, PPPs, and user fees Indirect via private actors: Parastatal forest management companies, concessions (conservation, afforestation, SFM), loans, guarantees, and direct investments by privates on state land

3.3 Attracting Private Sector Investment

Policy-makers and implementers of sustainable land-use activities may also seek to mobilize private sector investment. Relatively limited public resources and a history of underinvestment in the sector make the mobilization of private capital a challenge for policy-makers in developing countries. Climate change intensifies the challenge; forests, farms, and food supplies are at risk without new investments. This section highlights the trends, challenges, and opportunities of private sector investment in land-use activity in developing countries.

Over the last decade, investors have demonstrated growing interest in land-use projects in developing countries. Capital investments through banks, private equity funds and microfinance institutions are increasingly being directed toward agriculture in developing countries[26]. The private sector, including forest communities, smallholders, industry and other investors, is a key source of finance for forests, mostly through investments in forests managed for wood production. New private investors in this space generally come from outside the forest industry, seeking optimal combinations of financial returns and risk levels[27]. While investments such as large land acquisition by foreign parties raise significant concerns, there are many funds and other impact investors that focus on climate-smart land investments (see Section 3.2 above).

A key challenge for policy-makers is matching diverse production activities with investors' preferences for standardized financing schemes. The public sector can help to ensure that diverse conditions and opportunities are converted into bankable and structured opportunities for investment. Private finance will generally require a public policy lever to unlock it, through the creation of a financial framework that creates long-term, clear, and credible policy signals[28]. A framework supportive of private sector investment is one that combines regulatory and governance measures, such as improving law enforcement, strengthening the rule of law and land titling, with predictable financial incentives, such as PES, dedicated subsidies or tax breaks, where appropriate.

Public-private partnerships (PPPs) can enable risks, responsibilities, resources, competencies and benefits to be shared[29]. PPPs provide a framework for the cooperative implementation of strategies for sustainable land use that address deforestation at the national level. The private partner can take on different tasks but plays an important role in financing and sustainable implementation, while the public sector provides the enabling conditions facilitating implementation.

Table 6 summarizes examples of PPPs in the land-use sector.

[26] Hallam, D., (2009) Foreign Investment in Developing Country Agriculture – Issues, Policy Implications and International Response, OECD. Klasa, A. (2013) Financing Agricultural Growth in Africa, Forbes Magazine. 26. August 2013. http://www.forbes.com/sites/skollworldforum/2013/08/26/financing-agricultural-growth-in-africa/,

[27] UNFCCC Standing Committee on Finance, (2015) SCF/2014/7/5/Rev.2, 5 March 2015 (para.14).

[28] Ibid, para. 16.

[29] Ibid, para. 17

Table 6. Examples of PPPs in the Land-Use Sector

Contribution	Examples of partnership models
Promotion of private sector investment in sustainable agricultural and timber production	PPPs provide a framework for the financial and technical support of sustainable investment by the private sector along the value chain, from cultivation to the use of agricultural or forestry products. The private sector invests and the public sector steers such investment through financial and technical incentives (such as tax exemptions, funds); improves specific institutional framework conditions; or actively acts as co-investor (e.g., in a joint venture). Contract farming is a common form of partnership between public and private sectors whereby agricultural companies sign long-term supply contracts with organized smallholders. The contracts often regulate production and off-take, as well as agricultural services (training, advice) and inputs (seeds, agro-technical equipment), which may be all or in part provided by the public sector. Training programs, which are necessary for participating in outgrower systems or contract farming, are often promoted by the public sector. Training is often organized through extension services. E.g., IFAD Northern Rural Growth Programme in Ghana; Rural Income Promotion Programme and Support Programme for the Rural Microenterprise Poles and Regional Economies in Madagascar; Low-Carbon Agriculture Program, Outgrower Schemes in Brazil.
Promotion of vertical and horizontal integration	PPPs promote market integration and improved cooperation among actors by setting up associations, partnerships or joint ventures between companies and small farmers (which may include off-take guarantees), or actors along the value chain (e.g., commodity roundtables). The public sector plays a supporting role, for instance through training, briefings or by providing financial and legal support of coalitions. E.g., Northern Rural Growth Programme (Ghana).
Promotion and monitoring of environmental, social or other quality standards	In the agricultural sector, PPPs often link certification and monitoring with public targets, (e.g., in the bio-energy sector); while the state defines the target and focuses its resources on monitoring the accredited certification systems, the private sector identifies the most efficient way for implementing them. This form of co-regulation exists not only in sustainability standards, but also applies to sanitary and phytosanitary standards (SPS standards).
Infrastructure development	In rural areas, economic activities and traffic are often insufficient to attract private investment. To reduce infrastructure deficits, partnership models include the expansion of the transport network and of facilities. The public partner provides funding (investment grants, preferential loans, and other forms of risk guarantee) to private companies investing in the construction of infrastructure. E.g., Kalangala Integrated Infrastructure Programme in Uganda[30] and the PIDG-supported Spencon project to lower costs of infrastructure by greater private sector participation in East Africa[31]

[30] Private Infrastructure Development Group, (2015). Transforming Bugala Island's infrastructure. Kalangala Infrastructure Service Project, Uganda. Available at: http://www.pidg.org/resource-library/case-studies/pidg-case-study-kalangala.pdf.

[31] Private Infrastructure Development Group, (2015). Spencon Project. Retrieved from: http://www.pidg.org/what-we-do/projects/uganda/spencon.

Table 6. Examples of PPPs in the Land-Use Sector

Contribution	Examples of partnership models
Creation of market places	The involvement of the private sector in the development of markets in remote rural areas is another contribution by PPPs in the agriculture and forestry sector. The private sector seeks to improve the regional supply of local products as well as supra-regional trade opportunities. Under a partnership with the public sector, the private actor can take over the financing as well as the construction and the operational management of wholesale and retail markets. E.g., construction of wholesale markets in Abidjan and seven regional capitals in Côte d'Ivoire[32]
Development of irrigation systems	The private actor takes on a central position between the farms and a public institution, partnering to professionalize local irrigation systems and make them sustainable. E.g., Nakhlet small-scale irrigation scheme in Mauritania
Promotion of research and innovation	Partnerships often seek to improve inputs, such as developing more productive or better adapted crops (e.g. through genetic engineering, making them drought resistant, etc.)[33]. E.g., Creation of a Partnership for Forage Seed Development in Chile

Where land is owned by the public sector, a combination of governance measures and financial incentives are needed to promote sustainable management. Fostering the necessary conditions for land development includes strengthening accountability and transparency, while building a clear system for the allocation and use of public land that includes defined responsibilities. In addition, actors can establish parastatal forest management (e.g., OFWE in Ethiopia), SFM and/or certification requirements and conditional concessions to improve the financial and environmental performance of activities on public land.

On private land, incentives are often needed for investments in activities that would not otherwise be financed by private actors due to low profitability or distant cash flows (see section 3.2.3). Smallholders in particular face difficulties in accessing funds due to a lack of collateral, lack of available finance, relatively limited networks, and insufficient knowledge of the various regulations and opportunities. Direct payment programs such as PES and other positive incentives may provide additional income to support rates of return expected by the private sector, if clear commitments over time can be made.

[32] Consultative Group/PND, (2012). Construction of wholesale markets in Abidjan and seven regional capitals. Retrieved from: http://www.gcpnd.gouv.ci/userfiles/file/ppp_en/COMC_PPP_4.pdf.

[33] Hartwich, F. et al., (2008) Building Public-Private Partnerships for Agricultural Innovation, International Food Policy Research Institute. Retrieved from: http://www.ifpri.org/sites/default/files/publications/sp4.pdf.

PART II – Classifying the Uses and Sources of Funds and Financial Instruments

4 Land-Use Policies and Measures that Require Finance

This chapter identifies actions that policy makers and implementers can take to reduce emissions from forests and to advance sustainable land-use objectives. It defines the types of costs incurred to pursue these activities, the benefits that accrue to different parties when undertaken, and the potential need for finance to carry them out. Specific examples from the field provide instances of when and where some of these measures have been employed, with occasional reference to how they were financed. A more direct connection between these actions and the financial instruments that may be available to decision-makers on the ground is found in subsequent sections of the Report.

4.1 Policies and Measures to Reduce Forest Carbon Emissions: Categories, Actions, and Examples

Deforestation is caused by activities in several sectors, such as agriculture, forestry, transportation, mining, and energy. As such, policies and measures to reduce emissions from forests often cut across sectors and institutional responsibilities. Efforts to promote sustainable land use and reduce forest-related emissions might involve a suite of policies and measures. These range from public sector efforts to strengthen governance to private sector efforts to promote sustainable supply chains to local community efforts to improve agricultural productivity or fight forest fires. Relevant policies include laws, regulations and programs designed, enacted and enforced by decision-makers at national, provincial, and local levels to change behavior in favor of forest conservation or expansion. These policies seek to create an environment in which the private and public sector have the incentive to maintain and expand forest cover. In turn, the policies seek to penalize or otherwise discourage those actions that cause deforestation directly or indirectly.

4.1.1 Categories of policies and measures

The policies and measures developed to reduce forest emissions and promote sustainable land use can be categorized as follows.

Strengthening governance. Reducing forest-related emissions and putting in place the conditions for agricultural transformation requires a set of reforms in land-use planning, land tenure and land conflict resolution, concessions regime reform, and environmental law enforcement. Successful measures need strong institutions with capable staff and financial resources to enforce land-use rules, administer economic incentive programs, and undertake other implementation actions. Land title or land rights (or perception thereof) also have a strong influence on how actors use land (see Box 1). Communities that have strong, enforceable, widely-recognized, and uncontested rights to forest lands and their resources are more likely to promote good forest management.

Box 1 – Land Investment for Transformation Program (LIFT) in Ethiopia

Launched in 2014, the LIFT program seeks to enhance income structures of people in rural areas in Ethiopia by supporting the government in (i) rural land administration and (ii) the provision of map-based land certificates to farmers in four regions, while (iii) supporting farmers to benefit fully from increased investment and productivity through the development of the rural land market and supporting operations. LIFT is funded by the UK Department for International Development (DFID) with a total budget of up to GBP 68.2 million over more than 6 years from 2013/14 to 2019/20. The program's intervention activities are implemented by the government of Ethiopia with the support of an Implementing Technical Service Provider.

The project (summarized in Table 7), is expected to increase the income of over 500,000 households by 20% and secure land ownership for 6.1 million households, of which an estimated 70% are headed by females. LIFT funds efforts for teams to visit rural areas to assist with certification; supports administration; and provides technical assistance to relevant regional and local government institutions responsible for certification and title registration. The land registration and certification programs implemented by the government of Ethiopia in the four highland regions has been regarded as one of the largest, fastest, and least expensive land registration and certification programs in Africa.[34]

[34] Deininger, K., Ali, D., Holden, S.T., Zevenbergen, J. (2008): Rural land certification in Ethiopia: process, initial impact, and implications for the other African countries. World Dev,.vol. 36, no. 10, pp. 1786–1812.

Table 7. LIFT Funding Model

Objective	Secure land ownership for 6.1 million households, of which around 70% will be/are headed by females
Funding source	Between GBP 45 and GBP 68.2 million from DFID
Funding modality	The funds will be channeled through an Implementing Technical Service Provider (up to 60%), the government of Ethiopia (up to 12%) and the remaining directly spent by DFID.
Beneficiaries	The largest share of the funding (GBP 48.5 million) will be spent on land certification, GBP 3 million on rural land administration, GBP 9.2 million on policy and market development (enabling environments), GBP 3 million on program administration, and the remainder on monitoring & evaluation and planning.

Regulatory measures. Regulation includes legislated mandates (command-and-control measures) that influence behavior through rules, standards, and other requirements. Restriction of private land use, including forest and other habitat conversion, are typical command-and-control measures. Planning instruments, such as zoning, are also translated into mandatory land-use regulations that can be enforced. In general, command-based regulatory policies require government enforcement to be effective. Land-use planning separates certain geographic areas into different land-use zones, such as commercial and subsistence agriculture, livestock management, forest cover and PAs, among others. Zoning is usually led by the government, ideally with the active participation of local stakeholders.

Economic incentive mechanisms. Market-based mechanisms and other incentive programs can steer private activity and investment toward maintaining forests and promoting other sustainable land use. Incentives can be targeted to different actors and take the form of direct monetary payments (e.g., performance-based payments for forest conservation, PES); direct provision or subsidization of inputs (e.g., seedlings); or access to credit. Decision-makers can also use subsidies, access to credit, and tax breaks to discourage deforestation. Box 2 provides an example of efforts in Brazil to increase credit access for rural landholders.

Box 2 – Brazil's policy to improve rural access to credit in the Amazon[35]

Conditional rural credit can be an effective policy instrument to combat deforestation. One of Brazil´s most successful mechanisms of supporting agriculture is the use of rural credit to finance short-term working capital, investment and commercialization of rural production. Rural credit is government-subsidized and can be used to support public policy goals, such as forest conservation. In 2008, Resolution 3,545 of the Brazilian National Monetary Council made rural credit in the Amazon Biome conditional on presenting proof of compliance with environmental regulation, as well as proof of the legitimacy of land claims and the legality of rural operations. The rural credit portfolio proposed by the federal government and carried out by official banks and credit cooperatives totaled BRL 78 billion (USD 38.5 billion) in 2008, of which BRL 2.5 billion (USD 1.24 billion) was issued as rural credit that same year. Credit is distributed through government banks and covers a third of the annual financial needs of the Brazilian agricultural sector. The model is summarized in Table 8.

Any change or modification to rural credit programs greatly influences the country's agricultural sector. A 2013 study by the Climate Policy Initiative showed that Resolution 3,545 prevented over 2,700 km^2 of forest area from being cleared, representing a 15% decrease in deforestation between 2008 and 2011.[36]

Table 8. Rural Credit Funding Model

Objective	Support sustainable and legal agricultural development in the Amazon
Funding source	Government budget
Funding modality	Credit to farmers that bring proof of environmental and legal compliance with local legislation and with the conditions established by the program
Beneficiary	Farmers in the Brazilian Amazon region

[35] Assunção, J., Gandour, C., Rocha, Ro., Rocha, Ru., (2013). Does Credit Affect Deforestation? Evidence from a Rural Credit Policy in the Brazilian Amazon. Climate Policy Initiative.
[36] Ibid.

Direct investment in sustainable land management. Since a large proportion of lands in developing countries is state-owned or state-managed, governments can advance sustainable land-use and LED objectives directly by investing into public land. They can establish parks and reserves (see Box 3), invest in the human and other resources required to properly manage forest and other land uses, reforest degraded areas, afforest, and fight wildfires and other disturbances that damage forests.

Box 3 – Protected areas as tools for reducing deforestation

Covering about 13% of the Earth´s land, Protected Areas (PAs) are critical to global efforts to protect biodiversity and ensure the sustainability of natural resources. Numerous studies suggest PAs have led to a decrease in deforestation in different regions of the world.[37] The Amazon Region Protected Areas Program (ARPA) provides one model for financing PAs. The Brazilian government, in collaboration with NGOs and public and private entities, have set up an unprecedented financing program – the ARPA Transition Fund – with total funding of USD 215 million to facilitate the administration and monitoring of 150 million acres of permanently protected Amazon rainforest. Financial oversight rests with the World Bank while the Brazilian Biodiversity Fund (FUNBIO) serves as ARPA's financial manager. This fund was established in 2004 after receiving a USD 500,000 donation from WWF-Brazil, raised with the Ford Foundation. It has received additional finance from the Global Environment Facility, the government of Brazil, the German development bank Kreditanstalt für Wiederaufbau (KfW), and the Betty and Gordon Moore Foundation. Finances are managed through a long-term endowment fund, disbursing payments slowly while allowing the national government to prepare gradually for full funding responsibility. The fund provides the financial resources for the operation of the PAs and complements the government's financial and human resources that support the Parks.

[37] Rogers J., (2011). The Effectiveness of Protected Areas in Central Africa: A Remotely Sensed Measure of Deforestation and Access. Colombia University. Retrieved from: http://academiccommons.columbia.edu/catalog/ac%3A131468.

Table 9. ARPA Funding Model

Objective	Support protected areas in the Amazon
Funding source	International funds (World Bank, GEF), Brazilian government through the State Bank BNDES and the Amazon Fund, philanthropic grants
Funding modality	Slowly depleting endowment-fund; Support for long-term maintenance costs for the PA network is expected to come from the Brazilian government.
Beneficiary	The Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), which coordinates the process of establishing the PAs, Chico Mendes Institute for Biodiversity Conservation, which manages Brazil's PA system, and communities around PAs

4.1.2 Specific actions by policy and measures category type

Table 10 connects the policy and measures categories discussed in the previous section to specific actions on the ground that governments and local decision-makers might wish to consider. The list of activities is meant to be representative, not exhaustive, of the options available.

Table 10. Policy Instruments to Support Sustainable Land Use

Policy instruments and actions	Specific actions	Country examples
Governance Measures		
Development of a LED/ REDD+ strategy	Policy process driven by political priorities, stakeholder views, legal and financial feasibility with the goal to develop a strategy that facilitates long-term sustainable land use.	Most countries that participate in REDD+ are in the process of developing a REDD+ strategy, including Ethiopia and Mexico (the case study examples described in the Report in Chapters 6 and 7).
Land-use planning processes	Participative/consultative processes to develop plans, which direct land-use activities to where they are most suited while avoiding conflicts. This includes policies that govern the utilization of open access, state and common property resources; and policies to establish and enforce procedures to encourage the efficient and sustainable use of resources.	Ethiopia's participatory land-use planning supported by the SLMP and several other donor-funded initiatives; Cameroon's Agro-Ecological Zoning (AEZ); the Ecological and Economic Zoning Plan (ZEE-AC) in Acre, Brazil[38]; and the Brazilian Atlantic Forest Restoration Pact (AFRP), a PPP that includes zoning.
Clarification of land title and resource property rights	Policies allocating resource property rights between public, communal and private ownership; policies distributing privately owned resources among private individuals, including land. Overlap with planning and zoning.	Peru's land titling project with a total capital volume of around USD 80 million provided by the Inter-American Development Bank[39]; Ethiopia's SLMP, which, as of early 2015, has issued first-level certificates for 88,271 households, 1,298 parcels of communal lands and 50 parcels of institutional holdings.
Technical assistance and capacity building	Establish an extension service of experts to help landholders manage land more productively and sustainably; promote aggregation and integration of smallholders.	India's National Dairy Development Board has fostered a successful cooperative structure that provides technical assistance, processing facilities, market access, and veterinary services to millions of dairy smallholders; The East Africa Dairy Development Project is a regional, multi-donor program that promotes better dairy production practices, market access, and development for smallholder farmers.
Improved law enforcement	Increase institutional capacity, build new agencies, decentralize, procure equipment, and train staff.	Kenya's measures of forest law enforcement and governance, including detection, prevention and suppression, to enhance compliance with formal regulations that endorse SFM[40]; the EU's Action Plan on Forest Law Enforcement, Governance and Trade (FLEGT) to promote SFM through long-term measures that effectively tackle illegal logging in various countries.

[38] WWF, (2013) Environmental Service Incentives System in the State of Acre, Brazil; Lessons For Policies, Programmes And Strategies For Jurisdiction-Wide REDD+. Retrieved on March 5th 2015 from http://assets.wwf.org.uk/downloads/sisa_report_english.pdf?_ga=1.237798025.826928672.1425575251.

[39] Inter-American Development Bank, (n.d.). Rural Land Cadastre, Titling, and Registration Project in Peru - Third Phase. Retrieved from: http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=39234588

[40] Kenya Forest Service, (2007). Forest Law Enforcement and Governance in Kenya. Retrieved from: http://www.profor.info/search/google/law%20enforcement?query=law%20enforcement&cx=014516580788237218894%3Acyz3fatw1j0&cof=FORID%3A9&sitesearch.

Policy instruments and actions	Specific actions	Country examples
Regulatory Measures		
Logging bans and other land-use restrictions	Disallow certain types of activities in designated places (e.g., PAs, watersheds, etc.). Often enacted through a planning process that includes relevant stakeholders (e.g., logging bans).	Land-use or logging regulations, restrictions and bans exist in almost all countries (e.g., the Philippines' moratorium on the cutting and harvesting of timber in the natural and residual forests[41]; Indonesia's moratorium on new concessions in primary natural forest and peat land[42]).
Technology-based or performance-based standards, often combined with a certification requirement	Technology-based standards require the use of best available technologies to achieve goals such as SFM. Performance-based standards prescribe a certain outcome (e.g., zero net emissions). In some cases, certification of technologies or outcomes can be mandatory.	Kenya's forest policy framework which includes extensive standards for sustainable management of indigenous forests, plantation forests, dryland forests, urban forests and roadside tree planting and farm forestry[43]; Bolivia's SFM project (BOLFOR) includes SFM certification in forestry legislation[44]; in Guatemala, FSC certification is mandatory for both communities and industrial groups to obtain and maintain forest concessions in the Maya Biosphere Reserve.
Environmental impact assessments (EIAs)	A mechanism to avoid and mitigate negative consequences of policies, reforms, and projects before their initiation	Malaysia's EIA framework requires extensive assessment of possible environmental impacts that are likely to occur from intended actions, and includes provisions for suitable mitigation measures[45]; New Zealand's EIA guidelines identify and evaluate effects of proposed policies and projects and minimize adverse impacts of future actions[46].
Economic Measures: Market-based policies and programs		
Payment for Ecosystem Services (PES)	Systems that directly or indirectly incentivize forest conservation, sustainable land use, and afforestation/reforestation. Program often provides payments to land managers to implement specific practices.	Ecuador's Socio Bosque Program[47]; Costa Rica's PES Program (PPSA)[48]; Mexico's Payments for Forest Environmental Services Program (PSA)[49]; Sloping Land Conversion Programme and "Grain for Green" initiative in China that pay farmers to set aside land for afforestation.

[41] The Government of the Philippines, (2011) Executive Order No. 23, Declaring a moratorium on the cutting and harvesting of timber in the natural and residual forests and creating the anti-illegal logging task force. Retrieved from: http://www.gov.ph/2011/02/01/executive-order-no-23-4/.

[42] The Republic of Indonesia, (2011) Presidential Instruction No. 10/2011. Suspension of granting of new licenses and improvement of governance of natural primary forest and peat land. Retrieved from: http://www.unorcid.org/index.php/document-library/redd-in-indonesia?chronoform=Form_List_Pub2_Public&event=submit.

[43] Republic of Kenya, (2014) Forest Policy 2014. Retrieved from: http://www.kenyaforestservice.org/.

[44] ISEAL Alliance, (2008) Bolivia and Forest Stewardship Council Standards. Retrieved from: http://www.isealalliance.org/search/apachesolr_search/Bolivia.

[45] Malaysian Department of Environment, (2007) Environmental Impact Assessment (EIA). Procedure and Requirements in Malaysia. Revised. http://webcache.googleusercontent.com/search?q=cache:dFg4QVV4UfMJ:www.doe.gov.my/eia/wp-content/uploads/2013/06/EIA-Procedure-and-Requirements-in-Malaysia.pdf+&cd=2&hl=de&ct=clnk&gl=de. Retrieved from: March 24th 2015.

[46] New Zealand Department of Conservation, (n.d.). The Guide to Preparing Your Environmental Impact Assessment (EIA) for Concession Applications. Retrieved from: http://www.doc.govt.nz/get-involved/apply-for-permits/managing-your-concession/environmental-impact-assessment/

[47] de Koninga, F., et al., (2011). Bridging the gap between forest conservation and poverty alleviation: the Ecuadorian Socio Bosque program. Environmental Science & Policy 14, pp. 531-542.

[48] Rodriguez Zuñiga, J. M., (n.d.). Paying for forest environmental services: the Costa Rican experience. Retrieved from: http://www.fao.org/docrep/005/y4744e/y4744e08.htm.

[49] Comisión Nacional de Áreas Naturales Protegidas (CONANP), (n.d.) Programa de Pago de Servicios Ambientales en Áreas Naturales Protegidas. Retrieved from: http://www.conanp.gob.mx/acciones/programa.php; This includes Mexico's Hydrological Environmental Services Program (PSAH) and Payments for Carbon and Biodiversity Services Program (PSA- CABSA).

Policy instruments and actions	Specific actions	Country examples
Tax reform: tax credits, preferential tax treatment, environmental taxes	Reduce applicable tax for preferential (e.g., LED) investments and activities; increase taxes for activities that are not in line with government priorities.	Brazil's ecological value-added tax (ICMS-E)[50]; Malaysia's tax incentives for forest plantations[51].
Loans and rural credit programs	Provide access to new finance lines; improve conditionalities and modalities of existing finance lines (e.g., lower interest, longer pay-back periods).	Brazilian Central Bank's rural credit in the Amazon (see Box 2); Brazil's Low Carbon Agriculture Program is a credit and capacity building initiative that provides farmers investing in improved pasture management with access to credit at low interest rates and a prolonged repayment period[52]. BNDES's main credit line for forestry (Florestal) supports investments in natural and planted forests for commercial and conservation purposes. The minimum loan is USD 500,000, with a maximum payment period of 15 years at an annual interest rate of 9%. It has distributed USD 300 million in reimbursable and non-reimbursable financing for the Atlantic Rainforest Initiative in 2013[53]. Colombia's fund for financing the agricultural sector (FINAGRO) facilitates the transition to more sustainable agricultural supply chains through the mobilization of finances with around USD 6-7 billion already disbursed[54].
Credit guarantee programs	Provide guarantees to cover investment-specific risks for land/LED supportive activity	Nigeria's Agriculture Credit Guarantee Scheme Fund (ACGSF) gets 60% of its funding from the national government, and the remaining 40% from the Central Bank of Nigeria (CBN). ACGSF provides guarantees for loans to agriculture, including perennial crops such as coffee, tea, cocoa, rubber, oil-palm and cereals, as well as animal production and processing under certain conditions. The guarantee mechanism has features of a portable guarantee as the farmer applies for the loan guarantee together with the lending bank[55].
Direct Investments: Management of Public Land		
Establishment and management of protected areas (PAs) on public lands	The state provides direct financial support for management of a designated PA.	Brazil's Amazon Region Protected Areas Program (ARPA) (see Box 3).
SFM on public lands	State manages land directly to achieve reduced emissions/LED	Sustainable management of public forests in Sweden, Germany, and other countries managed by legislation.

[50] GIZ, (2014). Environmental Fiscal Reform. Case Studies. Retrieved from: http://www.giz.de/expertise/downloads/giz2014-en-environmental-fiscal-reform-case-studies.pdf.

[51] Ministry of Finance Malaysia, (n.d.) Tax incentives. Retrieved from: www.treasury.gov.my/index.php?option=com_content&view=article&id=698&Itemid=2535&lang=en

[52] ABC Observatório, (2013) Low Carbon Agriculture: The Evolution of a new paradigm.

[53] BNDES. (2012). Annual Report.

[54] Lowery, S., Tepper, D., and Edwards, R. (2014). Bridging Financing Gaps for Low-Emissions Rural Development through Integrated Finance Strategies, Forest Trends. Retrieved from: http://forest-trends.org/financing_LEDR.php.

[55] Zander, R., Miller, C., and Mhlanga, N. (2013). Credit Guarantee Systems for Agriculture and Rural Enterprise Development. FAO. Retrieved from: http://www.fao.org/docrep/017/i3123e/i3123e00.pdf

Policy instruments and actions	Specific actions	Country examples
Afforestation/ reforestation on public lands	Plantations and natural regeneration as public investment or in PPPs	Uganda's Sawlog Production Scheme, a PPP that has supported more than 37,000 hectares of timber plantations and catalyzed over USD 20 million of private investment on public lands, by providing financial assistance, technical advice, training and research[56]; Ethiopia's participative "watershed approach", supported by various programs and donors engages communities in sustainable land management.

4.2 Cost Considerations

This section identifies the types of costs incurred when the actions referenced above are implemented.

4.2.1 Cost categories

Planning and transaction costs. Planning and transaction costs are the expenses associated with establishing a policy, overseeing its implementation, and monitoring and enforcing it over time. This includes costs for (i) preparation and planning; (ii) policy development, including work that accompanies policy implementation such as consultations and analysis; (iii) creating the policy-enabling environment, including institutional strengthening and capacity building; and (iv) ensuring effective compliance and enforcement. In climate finance, transaction costs can also include those expenses associated with measuring, reporting, and verifying emission reductions. The magnitude of these costs depends on the type of financing instruments used and the rules under which they operate[57]. For REDD+ programs, much of the planning cost is incurred in the "readiness" phase which includes activities such as: policy formation, enabling activities (e.g., stakeholder engagement), and the establishment of monitoring and accounting systems (e.g., reference levels, measuring, reporting and verification (MRV), and registries). Much of this work has been financed with donor funds managed by the World Bank FCPF and the UN-REDD program.

Implementation costs. These are the costs directly incurred to implement REDD+ and LED activities. They include (i) capital costs from acquiring fixed assets to implement activities (e.g., infrastructure, buildings, equipment, planting material) and these costs are normally incurred at the set-up phase of an activity; and (ii) operating costs, which are ongoing expenditures that run through the life of the activity, including human resources costs (salaries), funds distributed through incentive mechanisms such as PES (see opportunity costs below) and depreciation of fixed assets. Financing of capital costs is often quite different than financing for operating costs. For example, financing for capital costs often involves an initial investment with a payback period facilitated through a loan. Financing operating costs is an ongoing expenditure, thus typically comes from recurring budget expenditures or other sustained revenue sources.

Box 4 provides an example of implementation cost estimation in the Democratic Republic of Congo (DRC).

[56] Sawlog Production Grant Scheme (2017). Retrieved from: http://www.sawlog.ug

[57] Salinas, Z., et al. (2012). BioCarbon Fund Experience, Insights from Afforestation/Reforestation Clean Development Projects. The World Bank. Retrieved from: https://wbcarbonfinance.org/docs/BioCarbon-Fund-Lessons-Learned-LOW-RES.pdf

Box 4 – Cost and emission reductions from the DRC Investment Plan for the Forest Investment Program (FIP)

The Democratic Republic of Congo's (DRC) Ministry of Environment and Forests calculated that a package of 'enabling activities' (mainly policies, such as land tenure and land rights clarification as well as land-use planning) and 'sectoral activities' (increasing the supply of biomass energy through plantations, reducing biomass demand through improved technological efficiency, and promoting community forest management) would cost around USD 100 million over 5 years[58], and would lead to over 18 million tonnes CO_2GHG emission reductions from deforestation and degradation. This package of interventions would target the three heaviest deforestation hotspots in the country: the area around the capital city of Kinshasa; around Kisangani; and around the cities of Mbuji Mayi/Kananga. The activities selected are those believed to most directly address the drivers of deforestation and forest degradation in the targeted areas. The costs cited above are mostly implementation costs including purchasing equipment and material to promote reforestation and produce cooking stoves, as well as building new facilities and offices for project implementation. They also include operational costs including labor for planting, producing cooking stoves, forest patrols, technical assistance to landholders and community forest managers, and maintenance of equipment.

[58] Authors' own calculations based on DRC, Ministry of Environment and Forests (2011) – DRC Forest Investment Program. The number refers to gross investment needs and does not take into account short-term or long-term benefits associated with forest protection.

Table 11. DRC Investment Program

Activity	Implementation agent	Financial instrument	Source of funds
Project preparation (transaction costs)	DRC government with the World Bank and the African Development Bank	USD 1.6 million grant	FIP
Enabling activities	Government	Grant	75% FIP, 25% NGOs, philanthropy, other projects supported by development institutions
Sectoral activities: Clean cookstoves	Private sector and communities	Grant, loan, private investment	50% FIP (grant and loan), private investment, grants from NGOs and other donors
Sectoral activities: plantations and community forest management	Private sector and communities	Concession grants	50% FIP (grant and loan), private investment, grants from NGOs and other donors

In addition, implementation costs for REDD+ projects may include measures to mitigate leakage. These measures may include efforts to prevent illegal logging, intensify agricultural practices in a sustainable manner, or improve energy efficiency[59]. Although costs are likely to vary according to scale and scope of the intervention, a study of three REDD+ projects in Tanzania estimated that implementation costs for such projects can comprise between 89% to 95% of total project costs[60].

Opportunity costs. Decision-makers often consider opportunity costs when deciding among different policy and mechanism options. Opportunity costs include the economic value of the foregone cost of action (market values and non-market values). For instance, opportunity costs can include the net income (revenues minus costs) from alternative land uses foregone by an actor when some action is taken. Opportunity costs could include the expected profits from a commercial agricultural plantation on forested land that was (legally) cleared that are not realized when the forest is instead protected. Another example is the cost of transitioning to more sustainable management where this shift that may require sacrificing some resource returns today (e.g., harvest levels) for higher (but time-discounted) returns in the future.

Opportunity cost is a useful measure of the level of funds needed for incentive mechanisms if they are intended to compensate landholders for foregoing a profitable activity. Opportunity costs can also be used to assess how costs to achieve GHG emission reductions and removals are distributed across groups within society. These calculations allow policy-makers to assess who stands to lose and win from certain activities, and thus to resist or support certain policies accordingly.

4.2.2 Challenges in determining the costs of policies and measures

Determining the specific costs of policies and measures is not straightforward. There are a number of challenges, including: (i) it is difficult to attribute reductions in deforestation to specific policies and measures, as the behavior and interaction of several actors shape the landscape; (ii) forest and land-use policies and measures include activities across multiple sectors; and (iii) there is relatively limited empirical evidence on which policies and measures effectively reduce deforestation. In contrast, calculating the costs of reforestation, land cost, reforestation inputs (seedlings, fertilizer, irrigation, etc.), and labor (for land preparation, planting and maintenance) is fairly straightforward. Because of these challenges, practitioners often rely upon their best estimates by calculating the costs of implementing an entire policy package and estimating the emission reductions and carbon stock enhancements.

[59] Merger, E., Held, C., Tennigkeit, T., and Blomley, T. (2012). A bottom-up approach to estimating cost elements of REDD+ pilot projects in Tanzania. Carbon Balance and Management 7:9. Retrieved from: http://www.cbmjournal.com/content/7/1/9.
[60] Ibid.

The costs associated with policies and measures are borne by different actors within the country. Some of the costs are typically borne by the government (e.g., policy planning or public lands management) and other costs are borne by the private sector or landholders (e.g., implementation of practices on private lands). The government can also create policies that either encourage or require the private sector to invest. For example, the government may create tax schemes to incentivize the adoption of land-sparing land-use practices, such as more intensive agriculture and cattle ranching, or inversely, the government can create new, environment-oriented taxes on land-expanding land-use practices or enforce land-use restrictions. The private sector can also encourage or require other parties to incur costs, such as by requiring suppliers to reduce the environmental impact of the supply chain, e.g., in the case of Brazil's Soy Moratorium (see Box 5).

4.3 Benefit Considerations

Policies that better utilize land while reducing emissions can also generate significant benefits. These benefits can accrue to private parties (e.g., new products or services) or to society at large (e.g., public goods such as a healthier environment). In addition to indicating whether a policy's benefits justify the costs, these benefits can influence finance needs in different ways. Private benefits may reduce the need for public finance to incentivize actions, thus making the encouragement of these positive actions cost-neutral for government budgets. Alternatively, the fact that some benefits cannot be easily privatized may create a need for public finance. Either way, decision-makers should consider the nature of the benefit flows in developing policy and financing strategies, as discussed below.

Box 5 - Greening the supply chains of major deforestation-causing commodities – the case of Brazil's Soy Moratorium

Green supply chains are designed to integrate environmental concerns into supply chain management. One type of supply chain governance is the adoption of private sector agreements. Adopted in 2006, Brazil´s Soy Moratorium is a pledge by major soybean companies not to trade soybean produced in deforested areas. It is the first voluntary zero-deforestation agreement in the world, setting the stage for supply-chain governance of other commodities, such as beef and palm oil. To monitor production, companies and NGOs jointly acted in the Soy Working Group, which is responsible for the implementation and process control of the Moratorium. Costs of the endeavor were covered by participating companies and NGOs. The Moratorium was renewed in 2009 and recently extended to 2016 and evidence from 2011 suggests that the initiative has inhibited the soybean frontier expansion[61]. A recently published paper showed that only a small area of soy expansion has occurred in newly deforested areas in the Brazilian Amazon since the Moratorium was put in place. Its success has been attributed to its simple requirements for compliance, its monitoring system, and the active participation by NGOs and government agencies.[62]

[61] Rudorff B., Adami M., Alves Aguiar D., Alves Moreira M., Pupin Mello M., Fabiani L., Furlan Amaral D. & Machado Pires B., (2011). The Soy Moratorium in the Amazon Biome Monitored by Remote Sensing Images. Remote Sensing 3 pp. 185-202.

[62] Gibbs H., et al. (2015). Brazil´s Soy Moratorium. Science 347:6220 pp. 377-378.

Benefits from land-use policies and measures are distinctive in nature. Many of the benefits accrue to local communities, including: (i) monetary benefits from sustainable forest harvesting, non-timber forest products, eco-tourism, and more intensive agriculture; (ii) socio-economic benefits such as new job opportunities from reforestation, community forestry, or climate-smart agriculture; (iii) provision of a funding base for social services to local communities, with benefits such as water and sanitation access as well as increased access to health and education facilities; and (iv) environmental benefits such as hydrological services that enhance water quality and quantity both locally and afar, and the protection and maintenance of biodiversity. Land-use policies that take into consideration the full suite of benefits have the potential to generate long-term economic benefits that can create new revenue streams, non-monetized benefits, and enhance national productive capacity.

Timing matters. In assessing different policies and measures, decision-makers should consider the timing of costs and benefits, as some policies will entail short-term costs and medium- to long-term benefits. For example, some government policies and programs seek to increase smallholder agriculture productivity by increasing smallholders' access to inputs (fertilizers, machinery, and storage), access to markets (feeder roads) and technical assistance (extension). While these programs and policies may help avoid further forest clearing for agricultural expansion, additional policies to restrict conversion may be necessary as farmers may wish to expand their improved operations. Increased productivity is likely to happen after a few years, while high costs are incurred in the short term. Various financial evaluation methods such as Net Present Value (NPV) analysis should be employed to assess the impact of different policies, including the impact of timing on benefits.

Often, climate mitigation benefits from emission reductions are only a small portion of total benefits from sustainable forest and land-use policies. Policies and land-use interventions are only sustainable if they generate long-term benefits. Policy-makers are therefore well advised to design policies that would generate benefits not from carbon payments but from crop yield improvements and from forest products. Carbon benefits, in the form of payments for emission reductions, often only represent a small share of the overall expected revenues[63]. They can be useful in overcoming the time lag between investment and benefits by providing support for the transition towards climate-smart land-use practices.

[63] Calculations based on: UNIQUE, Mainstreaming Carbon Finance into SLMP II. Cost-benefit analyses and benefit sharing options for the climate-smart agriculture and assisted natural regeneration projects, (2014). Unpublished.

5 Sources of Support to Finance Land-Use Policies and Activities

This chapter details the sources of funds and instruments in place or that could be deployed to finance REDD+, LED, and sustainable land management activities. It also identifies sources that support environmentally, socially, and financially sustainable landscape management more broadly. The chapter covers a spectrum of funding sources ranging from domestic budget allocations to international private equity. While the chapter covers many categories of finance and provides examples, decision-makers and implementers should carefully evaluate the sources as well as opportunities and barriers for accessing funds to finance their specific program and all its components.

5.1 Public Finance: Domestic and International

This section describes domestic and global sources of public sector funds that can be used to finance sustainable land-use activities.

5.1.1 Domestic public finance

Generation of funds. Governments can generate funds through: taxes, fees, permits, and fines. In addition, local governments receive allocations from national budgets. Governments may also raise funds through other mechanisms such as borrowing through concessional loan programs run by multilateral/bilateral banks and DFIs. They also issue debt in capital markets (national or international bonds)[64]. Additionally, the revenue potential from productive activities (e.g., through land investments) can provide an important source of finance for both the governments and land managers.

Deployment. For domestic public finance, governments distribute funds through a number of financial instruments that support the policies described in the previous chapter. Funds are generally deployed through ministries, public agencies and banks that manage funding for national or subnational policies (e.g., the Mexican Forest Fund). In some countries, laws support the ability to 'ring fence' or intercept funds so that they become legally separate from the government's general budget and are dedicated to a specific purpose. For example, fees from the extraction of natural resources (oil, mining) are used in Colombia in part to support sustainable land-use projects[65]. Table 10 in the previous chapter describes a number of economic measures that support the land-use sector.

National DFIs play an important role in providing finance for sustainable land management through the use of innovative instruments for microfinance and community development. They are supported by public money and their missions lie in servicing the investment shortfalls of developing countries and bridging the gap between commercial investment and state development aid[66]. While publically funded, a majority of the funds provided by DFIs are structured to resemble private investments and are expected to generate a return[67].

5.1.2 International public finance

This section describes how foreign funds can help to finance sustainable land use and LED policies and measures undertaken by developing countries.

Public finance and official development assistance. According to Buchner et al. (2014), in 2013, USD 5 billion in official development assistance (ODA) was provided

[64] The National Bank for Agriculture and Rural Development (NABARD), owned by the government of India, structures tax-free bonds to generate financing to boost lending to activities in an effort to protected farming and to the dairy sector. More information Retrieved from: http://articles.economictimes.indiatimes.com/2014-06-09/news/50447981_1_nabard-harsh-kumar-bhanwala-tax-free-bonds

[65] Congreso de Colombia, Ley 1530, Articles 82-89 (2012).

[66] Dickinson,T (n.d.). Development Finance Institutions: Profitability Promoting Development. OECD. Retrieved from: http://www.oecd.org/dev/41302068.pdf

[67] The large DFIs include; IFC, EIB, OPIC, GEPF and EDFI. EDFI is a group of 15 bilateral investment organizations, including BIO and BMI-SBI (Belgium), the CDC (United Kingdom), COFIDES (Spain), KfW/DEG (Germany), Finnfund (Finland), FMO (Netherlands), IFU (Denmark), Norfund (Norway), OeEB (Austria), Proparco (France) and SIFEM (Switzerland), SIMEST (Italy), SOFID (Portugal), and Swedfund (Sweden). In addition the development banks have departments or branches that provide finance to private sector actors.

for forestry, agricultural and fisheries broadly, which also includes, in many cases, the finance provided through market-like instruments from development finance institutions. To put this ODA funding in context, the total of global climate finance funds in 2013 was USD 331 billion. Of this, USD 46 billion went to public entities and USD 191 billion was invested in private entities including households. 91% of the global funds went to mitigation, of which USD 6 billion went to agriculture, forestry, land use and livestock management.[68] Thus, the land sectors are attracting a relatively small share of climate mitigation finance to date.

Within these reported numbers are funds issued by multilateral institutions and donor governments that provide direct technical assistance and other support for climate-smart agriculture, sustainable landscape management, biodiversity protection, REDD+, and sustainable supply chains. Notable programs include those supported by multilateral banks as well as regional and national development banks. These programs directly finance technical assistance to promote sustainable land-use activities and some are designed to catalyze other sources of private funding through PPPs, build commercially viable value chains, and provide other risk mitigation instruments.

DFIs provide funding globally through loans and investments in funds. They also provide guarantees and insurance which can be used to finance sustainable landscape management. DFIs may also issue bonds to raise funds for dedicated purposes. Finally, they often manage special trust funds that provide finance for climate change mitigation, such as the Climate Investment Funds, including the FIP and the FCPF. The governance of such trust funds is established in the funding instrument of the initiative and can differ considerably across funds.

Some DFIs are dedicated to support and mobilize private sector finance (e.g., the International Finance Corporation of the World Bank Group, The European Investment Bank, the FOMIN fund of the Inter-American Development Bank[69], the US Overseas Private Investment Corporation (OPIC)[71,72]). A recent study on impact investing found that from 2009-2013, DFIs committed USD 21.5 billion to conservation impact investments. These included water quality and quantity conservation projects which accounted for USD 15.4 billion of this total, while sustainable food and fiber and habitat conservation each accounted for roughly USD 3 billion. However, the data provided by DFIs presents significant challenges and the degree to which conservation is a primary desired outcome of the investments is often unclear. Nevertheless, impact investment is expected to increase by roughly 50% in the 2014-2018 period[72].

There are a number of regional banks that provide finance for land-use programs and projects, including the Asian Development Bank (ADB), the African Development Bank (AfDB), the European Bank for Reconstruction and Development (EBRD), and Inter-American Development Bank (IDB), among others. A number of national banks also extend regional or international loans, such as the Brazilian Development Bank (BNDES) and the German Kreditanstalt für Wiederaufbau (KfW). These regional and domestic DFIs play an important role in providing multiple sources of financing through grants, equity, loans, and loan guarantees to country governments, national banks, and private entities.

[68] Buchner, B., et al. (2014). The Global Landscape of Climate Finance. Climate Policy Institute. Retrieved from: http://climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2014/

[69] An affiliate of the IDB, the Multilateral Investment Fund (FOMIN) supports economic growth and poverty reduction in Latin America and the Caribbean through encouraging increased private investment and advancing private sector development. It works with the private sector to develop, finance, and execute innovative business models that benefit entrepreneurs and poor and low-income households; partners with a wide variety of institutions from the private, public, and nonprofit sectors; evaluates results; and shares lessons learned.

[70] Oversea Private Investment Corporation, (2013). Annual Report.

[71] Kingombe, C., Massa, I., and te Velde D. W. (2011). Comparing Development Finance Institutions: Literature Review. Overseas Development Institute. Retrieved from: https://www.gov.uk/government/uploads/

[72] Saltuk, Y. (2014). Spotlight on the Market, The Impact Investor Survey, JP Morgan. Retrieved from: http://www.thegiin.org/binary-data/2014MarketSpotlight.PDF

Table 12 summarizes instruments that distribute funds from these sources for application in sustainable land-use purposes.

Table 12. Instruments to Deploy International Public Funding for Land-Based Activities

Financing instrument	Short description	Example
Loans	Provided to governments or other designated parties to finance policies and measures, often with preferential repayment terms	In 2011, the AfDB provided the Bank of Kigali (Rwanda) a USD 12 million 10-year line of credit, with a 2-year grace period, to allow it to provide loans for sustainable management of plantations and restoration of natural forests in eight districts in Rwanda[73]; supported by IFC's Global Warehouse Finance Program (GWFP), Sudameris Bank in Paraguay was provided USD 15 million to expand access to finance for local farmers and small- and medium-sized entrepreneurs in the agribusiness sector[74].
Bonds	Issuers raise funds in international capital markets and proceeds are used for environmental ("green") purposes	FMO, the Dutch DFI established the "Sustainability Bonds", worth EUR 500 million, to support environmental and socially responsible initiatives including green and renewable energy generation, energy efficiency, responsible agriculture, food production, forestry, transport, water supply and access, as well as microfinance institutions and micro, small and medium-sized enterprises[75].
Fund investments	These are equity investments in funds or companies made directly in projects that are expected to generate a return for the investor.	EIB and FMO invested in the Athelia Ecosphere Fund, which finances sustainable land-use projects in Latin America and Africa; OPIC approved a USD 40 million investment in the Terra Bella Fund, which invests in smallholder agriculture and climate change mitigation.
Results-based finance	Payments are made for measured results, often, but not always, measured by GHG emission reductions.	The Carbon Fund of the FCPF (World Bank); the REM program of KfW and GIZ.
Grants/technical assistance	Grants can support technical assistance in the implementation of sustainable land practices. The grants may be provided alongside loans, results-based payments, or equity investments.	The FCPF provides technical assistance grants to support readiness to participate in results-based payment schemes including its Carbon Fund.

[73] African Development Bank, (2011). AfDB Signs USD 12 million line of credit with Bank of Kigali [Press Release]. Retrieved from: http://www.afdb.org/news-and-events/article/afdb-signs-usd-12-million-line-of-credit-with-bank-of-kigali-8570/.

[74] Gomez, A. (2015). IFC Will Provide up to $30 million to Sudameris Bank in Paraguay to Enhance Access to Finance for Farmers and Agriculture Producers [Press Release]. Retrieved from: http://ifcext.ifc.org/IFCExt/Pressroom/IFCPressRoom.nsf/0/E447305B78735370852257DF60059C954?opendocument

[75] Entrepreneurial Development Bank (2013) FMO Issues EUR 500 MLN 5-Year Sustainability Bond. FMO. Retrieved from: https://www.fmo.nl/k/news/view/13829/179/fmo-issues-eur-500-mln-5-year-sustainability-bond.html

There is evidence of increasing investment by DFIs in climate-smart agriculture and sustainable land management-related private equity funds, for example, OPIC is seeking to increase their portfolio in four sectors including agriculture[76]; in November 2013, FMO issued five-year, "Sustainability Bonds" in the amount of EUR 500 million (USD 675 million) to finance environmentally friendly and socially responsible initiatives related to renewable energy, agriculture, food processing, forestry, transportation, access to water, and microfinance[77].

Dedicated REDD+ finance. Within the reported forestry, agriculture and fisheries international public funds, there is a subset of funding streams that are closely aligned with or created specifically for REDD+. These funds include those that support readiness measures, those that promote policies, and those that pay for emission reductions. Over the past decade, significant funds have been pledged for REDD+ readiness and implementation (e.g., Norway's NICFI program, Germany's REM program, and the FCPF, FIP and BioCarbon Fund). Donors have also expressed interest in supporting sustainable supply chains. Bilateral programs (listed in Table 13) are also expanding. Examples of this include the Cambodia-Korea Memorandum of Understanding (MoU) signed in December 2014 and the Japanese Crediting Mechanism.

[76] OPIC (2013) Annual Report.

[77] FMO FMU issues EUR500m 5-Year Sustainability Bond. 8 November 2013, [Press Release]. Retrieved from https://www.fmo.nl/k/news/view/13829/179/fmo-issues-eur-500-mln-5-year-sustainability-bond.html

Table 13 summarizes funds that are managed by bilateral and multilateral institutions to support REDD+. These funds have been primarily provided through international public sources.

Table 13. Bilateral and Multilateral Funds to Support REDD+ and Sustainable Landscapes

Program/Administrator	Financing instruments	Amount and description (according to publicly available sources)
Forest Carbon Partnership Facility (FCPF) – World Bank[78]: Carbon Fund and Readiness Fund	Grants Results-based payments	Approximately USD 800 million for results-based payments for emission reductions from REDD+ and grant support for the FCPF defined REDD+ readiness process[79].
BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL) – World Bank	Grants Results-based payments	According to publicly available numbers, at USD 380 million. Payment for verified emission reductions from REDD+ landscape level jurisdictional programs.
REDD Early Movers (REM)	Grants Results-based payments	Results-based payments for REDD+ emission reductions at the jurisdictional level. The REM program has received an initial capitalization of approximately USD 45 million, with significant additional co-financing from Norway. Agreements have been signed with the Brazilian state of Acre and Ecuador.
UN-REDD	Grants	As of June 2014, UN-REDD had total funding of USD 195.7 million[80]. Seven donors have supported the UN-REDD Programme, which supports countries by providing: (i) direct finance for the design and implementation of UN-REDD National Programmes; and (ii) complementary support for national REDD+ action through sharing common approaches, analyses, methodologies, tools, data, and best practices.
Forest Investment Program (FIP)	Grants Private sector concessional set aside	The FIP is active in eight countries and has a pipeline of 38 projects and programs; total pledges as of September 30, 2014, are USD 602.1 million, of which USD 518.8 million have been committed and there is an expected co-financing of USD 1 billion from other sources. The FIP mandate includes providing support to private sector activities that reduce forest related emissions or enhance forest carbon stocks[81].
Global Environment Facility (GEF)	Grants w/co-financing Non-grants to private sector	The GEF Trust Fund is supporting the implementation of international conventions, including the UNFCCC. It is replenished every four years based on donor pledges. GEF-6 has USD 4.43 billion pledged. It supports, among other projects, biodiversity conservation and REDD+ activities.

[78] Note that the Carbon Fund and ISFL are public funds, but there are some private investments.
[79] Stated publicly by the Carbon Fund in a presentation at COP 20 (2014).
[80] About the UN-REDD Program (2014). UN-REDD Programme. Retrieved from: http://www.un-redd.org/aboutun-reddprogramme/tabid/102613/default.aspx
[81] Forest Investment Program (2014). Climate Investment Funds. Retrieved from: https://www.climateinvestmentfunds.org/cif/node/5

Table 14 summarizes REDD+ programs or funds that have been established to provide financing on a dedicated subnational/national basis or regional basis on behalf of donors and other funders.

Table 14. Examples of National Funds Supported by Results-Based Payments for Land-Based Activities

Program/Administrator	Financing instrument	Amount and description
Brazil Amazon Fund – Brazilian Development Bank	Results-based (from Norway to Brazil) Non-reimbursable investments in efforts to prevent, monitor, and combat deforestation, as well as to promote the preservation and sustainable use of forests in the Amazon Biome (from the fund to recipients)	As the first contributor to the fund, Norway provided approximately USD 170 million in 2011 and has pledged USD 1 billion through 2015. Payments from Norway are linked to performance in reducing deforestation. As of 2013, payments totaling about USD 760 million have been issued.
Guyana REDD+ Investment Fund (GRIF)	Results-based (from Norway to Guyana) Non-reimbursable investments in support of Guyana's Low Carbon Development Strategy (LCDS)	Norway is financially supporting the Guyana REDD+ Investment Fund, committing up to USD 250 million through 2015 in support of Guyana's Low Carbon Development Strategy. Payments are tied to Guyana's national scale performance in REDD+.
Norway/Indonesia – Bilateral	Phased payments from grants to results-based (from Norway to Indonesia)	In May 2010, Norway pledged USD 1 billion to support Indonesia's efforts to reduce emissions from deforestation and degradation of forests and peat lands. Norway's continued financial support is predicated on performance both in policy and in actual forest emission reductions. Norway provides USD 200 million under phases 1 and 2, and USD 800 million for verified emission reductions in Phase 3[82].
Congo Basin Forest Fund (CBFF) – African Development Bank	Donations from international partners Grants to recipients that range from EUR 61,000 to EUR 9 million	The CBFF received an initial donation of EUR 119 million from the UK and Norway. The Canadian government pledged an additional CAD 20 million in 2012, which was released in 2013. CBFF's cumulative disbursements through 2013 were EUR 29.1 million[83]. Projects are selected through calls for proposals.
Ecuador/Acre (Colombia, Peru, in preparation)	Results-based payments to national funds Disbursements through a range of instruments as per an REM investment plan	REM supports the Brazilian state of Acre and Ecuador through results-based REDD+ finance. In September 2014, Norway announced USD 300 million in funding to Peru from 2014 through 2020 for work on REDD+. The funding was pledged as a part of the signing of a joint partnership agreement between Peru, Germany and Norway.

[82] Government of the Kingdom of Norway and Government of the Republic of Indonesia (2010). Letter of Intent between the Government of the Kingdom of Norway and the Government of the Republic of Indonesia on 'Cooperation on reducing greenhouse gas emissions from deforestation and forest degradation'. Retrieved from: https://www.regjeringen.no/globalassets/upload/smk/vedlegg/2010/indonesia_avtale.pdf

[83] African Development Bank, Congo Basin Forest Fund, (2014) 2013 Annual Report, July 2014.

Emerging international mechanisms: the Green Climate Fund. The total commitments pledged to the GCF are over USD 10 billion as of December 13, 2014[84]. In its pilot phase (expected Q2 2015), the GCF will distribute funds through grants, loans, equity, and guarantees through accredited parties. These funds will support adaptation and mitigation activities. Given its size and mandate, the GCF constitutes an important new source of funding for sustainable landscape management.

5.2 Private Finance

Private funds are essential for shifting the land-use sector toward a more sustainable trajectory. Public sources of funds will not meet the financing requirements to reduce deforestation and promote sustainable land-use management, particularly with smallholders, thus there is a need to mobilize private funds. National private funds will come from banks, local individuals and cooperatives, small and medium enterprises (SMEs) and in some countries, domestic capital markets. International sources of private investment will come from international banks, private equity funds, capital markets, supply chain buyers, and emission reduction buyers. In some cases, investments may come from in-kind labor or inputs, and in other cases they may be agricultural and timber product supply chain buyers. The latter can have a significant impact on financing or revenue generation through their purchasing power.

5.2.1 Private domestic finance

Farmers, local communities, SMEs, and land managers. An important source of capital comes from farmers, local communities, land managers, producers, and SMEs themselves who invest in activities that have an impact — whether positive or negative — on forest cover and biomass. In many countries, smallholder farmers remain the largest investors in forestry and agriculture by far, and are central to any strategy for increasing investment in forest-related emission reductions, particularly for crops grown in and around forests such as coffee, cocoa, shea, acai, moringa, rubber, and cashews/tree nuts[85]. Their investments are crucial to enhance capital accumulation, labor productivity, and farm incomes, thereby reducing rural poverty[86].

Domestic banks and other lending institutions. Banks and other lending institutions can play a key role in financing sustainable land-use management (see Table 15), providing large and small loans as well as lines of credit. These institutions are largely private in nature, but may have strong links to the public sector (e.g., central/state banks, and quasi-public finance entities). Local banks are essential in providing funding as they are familiar with agricultural and forest producer needs through loans to SMEs and land managers. Local banks may also play a role providing guarantees to other financial institutions and supporting access to domestic capital markets by performing investment banking services for bond issuance and other capital markets transactions.

Domestic capital markets. In countries that have relatively developed financial regulations for investment, as well as a track record for capital markets transactions in other sectors, it may be best to raise funds by buying and selling long-term debt or equity-backed securities. In many developing countries, equity markets may be too immature to allow the raising of fund via equity (shares), but in middle income countries it may be possible to raise funds through the issuance of bonds to finance sustainable

[84] Green Climate Fund, 11 December 2014: Total pledges nearing USD 10.2 billion, [Press Release]. Retrieved from: http://news.gcfund.org/wp-content/uploads/2014/12/release_GCF_2014_12_10_austria_pledge.pdf

[85] OECD, (2013). Conditions and impact of private investment in the food and agriculture sectors: What governments can do [Concept note]. Retrieved from: http://www.oecd.org/daf/inv/investment-policy/Concept-Note.pdf

[86] Kindlberg, L., (2015). REDD+ Supply and Demand (2015– 2025), draft report 2015. Forest Carbon, Markets and Communities (FCMC) Program. Retrieved from: http://rmportal.net/library/content/fcmc/publications/redd-supply-and-demand-2015-2025/view

land-use management.

Table 15. Domestic Banks and Lending Institutions as Potential Finance Sources for Land-Based Activity

Type of Institutions	Nature of Financing
Central and state banks, public banks that, among others, supervise the commercial banking sector	Central banks set a minimum percentage of customer deposits and notes that each commercial bank must hold as reserves. Central banks can reduce the reserve ratio requirements for climate-related investment and help to attract dedicated funding[87]. Central banks can also establish conditions linked to certain credit lines that promote forest conservation (see Box 2 on the Brazilian rural credit program).
Commercial and investment banks	Commercial and investment banks are essential for the provision of finance to local actors. In climate finance, they play a role where conservation activities generate additional revenue streams. These institutions can act as intermediaries for finance aimed at incentivizing investments in SMEs and community-based enterprises either through direct financing or accessing capital markets for finance in countries with more development capital markets.
Quasi-public financial institutions	An estimated 80% of the existing supply of smallholder finance comes from public policy banks, i.e., state and agricultural development banks that were originally established by local governments and later became fully or partially privatized entities[88]. In many countries, there are entities that provide finance for rural development.
Microfinance institutions	Microfinance institutions can play a key role in promoting particular land-use activities focused on smallholders. Microfinance institutions can loan funds under terms that are more suited to small borrowers. Such funds can be used for practices that improve yields, local processing capacity, livestock, organic fertilizers, agricultural expansion, land acquisition, the purchase of raw materials, or equipment and business improvements or diversification[89]. Microfinance funds can be sizable; in Latin America they are estimated to be USD 14 billon and grew 9% from 2010 to 2011[90]. However, less than 40% of the total loan portfolio is for agricultural purposes.

[87] Rozenberg, J., et al., (2013). Funding low-carbon investments in the absence of a carbontax, Climate Policy, 13 (1), 134-41.
[88] Zook, D., et al., (2013). Briefing 01, Local Bank Financing for Smallholder Farmers: A $9 Billion drop in the Ocean. Initiative for Smallholder Finance. Retrieved from: http://www.globaldevincubator.org/smallholderfinance/Initiative_for_Smallholder_Finance_Briefing_1.pdf
[89] Enterprising Solutions Global Consulting, LLC., (2005). Rwanda Microfinance Sector Assessment 2005. Retrieved from: http://www.microfinancegateway.org/sites/default/files/mfg-en-paper-rwanda-microfinance-sector-assessment-2005-2005_0.pdf
[90] Jaramillo, M. (2013). Guide to Microfinance in Latin America. Evidence and Lessons from Latin America. Retrieved from: http://www.microfinancegateway.org/library/guide-microfinance-latin-america

Table 16 summarizes instruments which land managers can access from national private sources.

Table 16. Instruments to Deploy Private National Finance for Land-Based Activities

Financing instrument	Short description	Example
Loans	Loans and lines of credits that are provided to producers (small and large) as well as SMEs along the value chain	Occidente developed the 'Commercial Lending to Small Holders for Forestry and Natural Rubber program in Guatemala', a unique smallholder long-term loan program[91].
Equity/fund investments	Investments are made in companies or projects for a share of the financial returns.	'Equity for Tanzania' is a private equity fund operating domestically that provides loans and equity-like investments for agriculture and agro-processing. It is intended to enhance employment opportunities and strengthen demand for products generated by smallholder farmers[92]
Forest and Land-use emission reduction buyers	Funding is provided through the purchase of emission reductions, generally on a payment upon delivery basis. Buyers sometimes provide advance payments. Governments have also considered issuing (floor) price guarantees and advanced market commitments.	The Brazilian company, Natura Cosméticos purchased 120,000 tonnes of carbon offsets from the indigenous Paiter-Suruí people. Their carbon project in the Amazon was validated for compliance under the Verified Carbon Standard (VCS)[93].
Supply chain commitments	Through financing (in-kind and/or cash), technical assistance, investments and/or long-term purchase contracts, supply chain buyers support conversion to sustainable production.	Alpina, the second largest dairy company in Colombia (with sales of USD 750 million), supports the Mapa Social initiative. The initiative assists small dairy producers in Colombia in enhancing productivity and efficiency to prevent deforestation driven by agricultural expansion[94].
Bonds	Bonds allow the mobilization of funds via long-term, fixed income debt. Bonds offer a financial instrument for governments or private issuers to borrow funds for public or private investments.	The city of Johannesburg has issued a green bond to finance low-carbon urban development[95]. There are several proposals on how bonds can support REDD+[96].

[91] In many domestic commercial banks, portfolio allocations to forestry and agriculture are small (under 10%) and few have a special unit or department dedicated to agricultural or forestry lending. Commercial banks, whether directly or through lower level intermediaries, can play a key role in financing REDD+ and LED with specialist loan and other financing products as they establish a direct link small producers with formal financial institutions to help them build credit histories to access future long-term finance.

[92] Silici, L. and Locke, A. (2013). Private Equity Investments and Agricultural Development in Africa: Opportunities and Challenges. Future Agricultures. Retrieved from: http://www.ruralfinance.org/fileadmin/templates/rflc/documents/FAC_Working_Paper_062-1_pdf.pdf

[93] Ecosystem Marketplace (2013). Brazilian Cosmetics Giant Buys First Indigenous REDD Credits. Retrieved from: http://www.ecosystemmarketplace.com/pages/dynamic/article.page.php?page_id=9932

[94] Nelson, N. and Durschinger, L., (2015). Supporting Zero-Deforestation Cattle in Colombia. Forests Carbon, Markets and Communities Program. Retrieved from: http://rmportal.net/library/content/fcmc/publications/supporting-zero-deforestation-cattle-in-colombia/view

[95] Kidney, S., (2014). Just Out: First emerging market green city bond... City of Johannesburg Green Bond, approx R1.5bn ($139m), 1.5x oversubscribed! Climate Bonds Initiative. Retrieved from: https://www.climatebonds.net/2014/06/just-out-first-emerging-market-green-city-bond-city-johannesburg-green-bond-approx-r15bn

[96] Edwards, R., Tepper, D., Lowery, S., (2014) Jurisdictional REDD+ Bonds: Leveraging Private Finance for Forest Protection, Development, and Sustainable Agriculture Supply Chains. Forest Trends. Retrieved from: http://geneva-summit-on-sustainable-finance.ch/papers/edwards.pdf

5.2.2 Private international finance

Profit-motivated private investors. One of the most underdeveloped sources of funds that could help meet the growing need for agricultural and forest investments is international private investors. Currently, there are few investors with the mandate and risk tolerance for investments in the land-use sector in developing countries, particularly for smallholders. This is in part due to the fact that large, long-term investments such as pension funds typically face regulatory requirements that limit their risk profile. Thus, creating ways to attract these sources of funds will require, at minimum: (i) building investment track records; (ii) developing cost-effective aggregation across small investments; (iii) providing risk mitigation instruments to encourage investment; and (iv) providing targeted technical assistance so that projects will meet private investors' commercial requirements.

Private investors, outside of capital markets. These investors generally invest through fund structures. Such funds may be structured to have different investment horizons, usually up to 12 years, and use a myriad of financing structures. Also called 'private equity funds,' nevertheless they invest through financing instruments which include: equity, loans, combined loans and equity (e.g., convertible debt) and forward paid purchase agreements for products.

Supply chain buyers. Supply chain buyers represent companies that purchase or process agricultural and forest products. They can affect sustainable land use through establishing sourcing practices that incorporate requirements for zero deforestation and other sustainable land-use practices, such as the supply chain-driven soy moratorium in Brazil (see Chapter 2). One major effort in building global support for sustainable supply chains is called the Tropical Forest Alliance 2020 (TFA 2020), which brings together governments, companies and civil society. Other efforts to promote sustainable supply chains include sustainable roundtables (e.g., Sustainable Roundtable in Beef) and voluntary commitments by companies participating in the Consumer Goods Forum (CGF). There are also supporting regulatory measures such as the new labeling requirements for palm oil under EU law or the regulations in the US and the EU that seek to ban the entry of illegal timber into domestic markets. In September 2014, governments, companies, and NGOs signed the New York Declaration on Forests, committing to halving natural forest loss by 2020, striving to end deforestation by 2030[97], and restoring forests and croplands over an area larger than India.

There are three main ways that supply chain buyers can impact financing for climate change mitigation and environmentally, socially, and financially sustainable land use: (i) making direct investments in inputs and improved production for zero deforestation and sustainable agricultural production; (ii) establishing terms, conditions, or certifications for supply chain products and demonstrating willingness to change suppliers for non-compliance; and (iii) providing long-term purchase contracts for sustainably produced commodities. Issuing Long-term purchase contracts with producers who comply with zero deforestation and sustainable production may also help to mobilize significant financing on the ground.

Bond investors. The issuance of green bonds[98] into international capital markets has the potential to become an important new source of finance for sustainable agricultural and forest management. Bonds are fixed income, liquid financial instruments that provide up-front capital to the bond issuer in return for the promise to pay back the investor the value of the bond (the principle) plus periodic interest payments (coupons). Green bonds were created to expand the investor base by accessing the USD 80 trillion bond market and raise funds for climate-friendly and other environmental projects worldwide. The international market for green bonds has grown significantly with the total volume at the close of 2014 reaching USD 35

[97] Climate Summit 2014, (2014). New York Declaration on Forests, Action Statement and Action Plans. The United Nations. Retrieved from: http://www.un.org/climatechange/summit/wp-content/uploads/sites/2/2014/07/New-York-Declaration-on-Forest-%E2%80%93-Action-Statement-and-Action-Plan.pdf

[98] Green bonds are bonds sold to raise capital specifically for LED or programs with clear environmental benefits.

billion[99], tripling the amount of green bonds issued in 2013. In 2014, about half of the green bonds were issued by private companies, shifting the dynamic from 2013, when the majority of green bonds were sold by international agencies such as the World Bank. In June 2014, the World Bank reported an unprecedented USD 16.6 billion in green bonds issued in 2014[100]. However, the agriculture and forest sector with USD 1.5 billion only holds a small share of the green bond market and international issuers of green bonds have primarily been corporations (40% of the total) and supranational or international organizations (35% of the total). With the growth of green bonds, organizations have emerged to support development of standards and to legitimize the green bond label. Notably, the Climate Bond Initiative has developed a standard for green bonds and has a working group focusing on the expansion of green bonds to support the agriculture and forestry sectors.

Carbon buyers. The private sector has not been highly motivated to purchase offset credits for compliance purposes due to the current lack of clear regulatory signals supporting an international carbon market. Moreover, where markets do exist, there is a fairly limited role for international forest carbon emission reductions. However, numerous companies are now recognizing that a commitment to carbon neutrality is a display of good corporate citizenship and can be good for business. Their demand has been the main driver for the voluntary market in carbon credits which transacted 32.7 $MtCO_2e$ of emission reductions in 2013 in agriculture, forestry, and other land-use emission reductions and removals. These purchases provided an estimated USD 192 million in funding[101]. An oversupply of REDD+ verified emission reductions remains, however, as indicated by the millions of tonnes of unissued verified carbon credits under the VCS. This situation could change for new credits in the future if the UNFCCC process allows the use of markets, including from the use of REDD+ and other land-use mitigation activities, in the new climate agreement coming out of Paris in late 2015, and if domestic regimes for meeting compliance obligations allow credits from REDD+ activity.

While the voluntary market is small with uncertain growth, there was a 17% increase in tonnes transacted 2012 to 2013, but an 11% reduction in value transacted, indicating falling prices. While the prospect for growth of voluntary and compliance markets is limited pending more aggressive policy action, a recent study provides scenarios under which cumulative demand, including that from results-based programs, for REDD+ emission reductions is estimated between 207 and 739 $MtCO_2e$ over 2015-25[102]. This includes emission reductions that are expected to be purchased by governments supporting REDD+ through results-based payments. Supply is estimated to be 918 $MtCO_2e$ over 2015-25 (83 $MtCO_2e$/yr), if one includes payment for results that occurred before contracting (e.g. through NICFI or REM).

Private donors. Private philanthropy makes up a small but important source of finance for forest protection. Private foundations showed early enthusiasm for REDD+ in 2009 and 2010 providing USD 30 million and USD 40 million respectively, but this pace has slowed in recent years.[103] This funding included a combination of financing of specific projects on the ground, particularly in countries with high deforestation, such as Indonesia. It also funded sustainable supply chains, as well as REDD+-related working groups and information platforms[104].

[99] The World Bank (January 2015). Green Bonds are Changing Investor Expectations & Making Sustainable Investing Easier. Retrieved from: http://www.worldbank.org/en/news/feature/2015/01/22/green-bonds-changing-investor-expectations-three-trends

[100] Bloomberg New Energy Finance, (2014). Green Bonds Market Outlook 2014. Retrieved from: http://about.bnef.com/white-papers/green-bonds-market-outlook-2014/content/uploads/sites/4/2014/06/2014-06-02-Green-bonds-market-outlook-2014.pdf

[101] Goldstein, A. and Gonzalez, G., (2014). Turning over a New Leaf State of the Forest Carbon Markets 2014. Ecosystem Marketplace. Retrieved from: http://www.forest-trends.org/documents/files/doc_4770.pdf

[102] Linacre, N., et al., (2014). REDD+ Supply and Demand 2015-2015. Forest Carbon, Markets and Communities. Retrieved from: http://rmportal.net/library/content/fcmc/publications/redd-supply-and-demand-2015-2025/view

[103] Norman, M. and Nakhooda, S. (2014). The State of REDD+ Finance [Working paper 378]. Center for Global Development. Retrieved from: http://www.cgdev.org/sites/default/files/state_redd_finance_FINAL-REVISED.

[104] Climate and Land-use Alliance, (2014). Grants and Contract List, Q3 2014.

Table 17 summarizes the instruments used to deploy international private finance.

Table 17. Instruments to Deploy International Private Finance for Land-Based Activities

Financing Instrument	Short description	Example
Loans	These are lending instruments that are provided to producers (small and large) as well as to SMEs along value chains.	Root Capital, a nonprofit social investment fund, provides loans for smallholder agriculture[105].
Private equity investments	Investments are made in companies or projects for a share of the financial results.	Kuapa Kokoo Ltd. is a fair trade cocoa-buying company, owned by a cocoa farmers' co-operative in Ghana. It purchased the largest equity stake in Divine Chocolate Ltd., a fair trade chocolate company selling premium chocolate across the UK and Europe[106].
Forest and Land-use emission reduction buyers	Funding is provided through the purchase of emission reductions, generally on a payment-upon-delivery basis.	In 2013, Microsoft purchased emission reductions from the government of Cambodia's Oddar Meanchey REDD+ program.
Grants/ technical assistance	Concessional funding provided	Between 2010 and 2013, the ClimateWorks Foundation, David and Lucile Packard Foundation, Ford Foundation, Betty and Gordon Moore Foundation, and Margaret A. Cargill Foundation awarded 530 grants and contracts totaling over USD 148 million to support sustainable production and reduced deforestation.
Supply chain investors	Through financing (in-kind and/ or cash), technical assistance, investments and/or long-term purchase contracts, supply chain buyers support conversion to sustainable production.	MARS Inc. invested in a USD 21 million program in Côte d'Ivoire via the project Vision for Change. The project aims to raise the quality of cocoa production and increase yields to 1.5 tonnes/ha on about 150,000 plantations in the Soubré area by 2020, using intensification methods that conserve natural resources.

[105] Rootcapital, (2014). http://www.rootcapital.org

[106] Oikocredit International, (2015). Kuapa Kokoo Ltd., A farmer-owned buying company for Fair Trade cocoa Retrieved from: http://www.oikocredit.coop/what-we-do/partners/partner-detail/11281/kuapa-kokoo-ltd

Part III – Case Studies

Case Studies Overview

The next two chapters describe the experiences of Mexico and Ethiopia in leveraging financial mechanisms to promote SFM and conservation programs to achieve REDD+ and LED objectives. Ethiopia, a least-developed country, ranks 173rd out of all countries on the Human Development Index (HDI), a composite indicator that ranks countries according to their human development. However, Ethiopia has seen strong economic growth in recent years. Mexico, in contrast, is an upper middle-income country, ranked 71st on the HDI, with robust capital flows and private investment as well as positive but more moderate economic growth (relative to Ethiopia). These two cases were selected for inclusion in the Report because these countries are leaders in implementing LED strategies; their cases illuminate financing experiences under quite different conditions and circumstances; and both countries are firmly committed to REDD+ and sustainable land-use objectives. After a brief overview of each country's current economic and policy setting, the Report considers each case in detail.

The case of Mexico is valuable in demonstrating how international REDD+ funds can be aligned to support and complement ongoing domestic programs, activities and funding mechanisms for low-carbon rural development. It also demonstrates that this alignment can be achieved in the absence of a (formally adopted) national REDD+ strategy. This success can occur if robust legal, programmatic, and consultation frameworks are in place to guide the process and if senior government staff have the requisite capacity and leadership.

Box 6 - Mexico at a glance

Mexico's economy is the 14th largest in the world and is the second largest economy in Latin America with a Gross Domestic Product (GDP) of USD 2.1 trillion in 2013, representing a per capita income of USD 10,300. The economy is led by the services sector (62%) and the industrial sector (around 35%), while the contribution of the agricultural sector is modest (near 3%). The country´s economy shows a number of strengths: foreign investment has been increasing over the last few years, public finances are healthy, state debt is contained, and inflation has been stable for about a decade. The banking system is sound, and through a policy of budgetary and fiscal restraint, public debt has been contained at less than 40% of GDP, and economic stability has been maintained. On the other hand, income inequality is still problematic, and 44.2% of Mexicans are considered poor[107]. Deforestation continues in Mexico, but at a modest rate compared to other countries in Central and South America. Between 1993 and 2007, the forested area in the country decreased by 3.6%[108].

[107] U.S. Embassy, Mexico (2010). U.S. - Mexico At a Glance, Mexico: Poverty At A Glance. Retrieved from: http://www.usembassy-mexico.gov/pdf/2010_Poverty_Fact_Sheet.pdf

[108] Mexico´s FCPF Carbon Fund ER-PIN v.4, August 2013 and Mexico´s FCPF Readiness Preparation Proposal (R-PP), February 2010.

The Ethiopian case is notable because although this nation has relatively low institutional capacity, it has achieved a well-formulated institutional and legal framework for climate change mitigation and adaptation. Ethiopia's government is strongly committed to an LED path. The country has established a national multi-donor trust fund - the Climate Resilient and Green Economy (CRGE) Facility - that offers a single, coherent system to consolidate international and domestic finance. Developments with the CRGE Facility show that close cooperation between donors and the Ethiopian government is crucial to building domestic capacity and reinforcing national ownership of the process.

Box 7 - Ethiopia at a glance

Ethiopia has recently experienced unprecedented economic growth. At the end of 2013, GDP was USD 47 billion with an average growth of 10.9% per annum over the past decade, and nominal GDP per capita reached USD 550 in 2013, up from USD 142 in 2004[109]. Ethiopia's economy and the sustained well-being of a rapidly growing population depend largely on natural resources. Agriculture is the predominant sector, employing over 80% of the population. Biomass (i.e., firewood and charcoal) makes up 95% of the household energy consumption in the country and is a primary driver of forest degradation and deforestation along with small-scale agriculture.

[109] Policy Advisory Unit UNDP Ethiopia, (2014). Ethiopia: Key Economic and Social Indicators. UNDP. Retrieved from: http://www.et.undp.org/content/dam/ethiopia/docs/Ethiopia%20Key%20Economic%20Indicators-%202nd%20quarter_August%202014%20final.pdf

6 Mexico: Building on Existing Institutional Capacity and Policies to Achieve REDD+ and LED Objectives

Mexico's progress in achieving forest emission reductions and other land-based LED can be characterized by the following three key observations.

Mexico´s forest policy and REDD+ strategy follow a sustainable rural development and integrated landscape approach. This approach aims to create ecological landscapes with multiple land uses able to offer environmental, social, and economic functions. This requires a high level of coordination among government and civil society actors to attract and organize financial resources.

The forest sector is key in Mexico's transition to LED. Public funding for forest management and conservation programs is significant and has consistently increased over the last decade, including support for innovative PES programs and financing schemes. The historically successful combination of finance provided by donor and multilateral institutions such as the World Bank and significant national commitments of matching funds has facilitated access to resources (mostly loans) from multilateral and bilateral sources.

The Mexican Forest Fund is the main instrument used to manage and channel funds of the National Forest Commission (CONAFOR). These are subsidy programs to ejidos (communal land management systems) and communities. The Fund has also been the main vehicle used by multilateral (World Bank) institutions, while bilateral donors often manage and distribute their resources through selected implementing agencies (for instance, UNDP in the case of Norway, and NGOs in the case of USAID). Although the implementation of many of the funded actions has just started and thus any conclusions are preliminary, the resources being invested in the country could bring about transformative changes. The measures proposed seem to align well with the needs identified by CONAFOR in that they build on existing successful governance and financing schemes.

6.1 REDD+ and LED: The Mexican Context

Mexico's REDD+ and LED efforts reflect the unique characteristics of Mexican forests as well as the overarching policy framework that supports efforts to manage the forests sustainably.

State of forests in Mexico. Mexico´s continental surface covers 194.3 million hectares (ha), 138 million ha (71%) of which are covered by different types of vegetation, with forested areas (temperate forests and jungles) representing 47% of the total[110]. In 2002, around 50.7% of the forests were considered property of communities or ejidos, 27.6% was privately owned and 21.3% was either not officially delimited or considered national forest.

Deforestation and forest degradation take place in all forest types of Mexico. Between 1993 and 2007, the forested area in the country decreased by 3.6% representing an emissions release of 409.2 $MtCO_2$ (increasing to 521 $MtCO_2e$ if arid and semi-arid zones are included)[111]. There are diverse causes of deforestation which vary from region to region, although the main driver is conversion to pasture and, to a lesser extent, cropland. Low access to financial services, a lack of viable livelihood alternatives, weak institutional and governance capacity and weak rural development policies also incentivize unsustainable forest management practices.

Policy framework supporting LED. The General Climate Change Law defines a long-term mitigation goal for Mexico: 30% emission reduction by 2020 and 50% by 2050, as compared to emissions levels from 2000. It provides for the

[110] CONAFOR, (2012) National Forest and Soils Inventory, 2004-2009. Retrieved from: http://www.ccmss.org.mx/descargas/Inventario_nacional_forestal_y_de_suelos_informe_2004_-_2009_.pdf

[111] Mexico´s FCPF Carbon Fund ER-PIN v.4, August 2013 and Mexico´s FCPF Readiness Preparation Proposal (R-PP), February 2010.

establishment of financial, regulatory, technical, planning, evaluation, and monitoring instruments for public climate change policies. It also mandates the development of a National Climate Change Strategy, the main governing instrument for mid-and long-term policies in all sectors to fight the effects of climate change and to achieve a low carbon economy. The basis for short-term actions is set by the National Development Plan 2013-2018, which is complemented by the Special Climate Change Program and the state-level climate change programs. On March 28th, 2015 Mexico communicated its Intended Nationally Determined Contribution (INDC) to climate change mitigation and adaptation to the UNFCCC Secretariat. Mexico's INDC is based on the country's climate action plan and includes a 0% deforestation goal by 2030 as well as a commitment to reforest priority watersheds with special attention to riparian zones, while also taking into account native species in the area[112].

6.2 Aligning Forest and Land-Use Policy with Sources of Finance

CONAFOR has strategically aligned and coordinated domestic resources and, when relevant, international donor resources with the country´s overarching forest and climate strategy. CONAFOR carefully crafted an investment plan to guide the resources directed to REDD+ activities in Mexico and is designed based on comprehensive legal and programmatic frameworks applicable to forests and climate change in the country. These frameworks include the National REDD+ Strategy (ENAREDD+), and other relevant ongoing activities in the country.

From 2009 to 2012, around USD 773.5 million was committed for REDD+ readiness activities in Mexico, of which 51% came from international sources, almost exclusively in the form of loans[113]. Most international funds have been allocated via the Forests and Climate Change cooperation package (FCC), negotiated between CONAFOR and the World Bank in 2012. The FCC aims to support existing CONAFOR programs, enhance institutional capacities, and pilot innovative investments. The FCC is a key international donor program in Mexico´s investment plan, both in size and strategic relevance. It runs for five years (2012-2017) and includes the following mix of instruments: (i) a Specific Investment Loan (SIL)[114]; (ii) a grant and loan from the FIP of the Climate Investment Funds (CIF); (iii) a grant from the FCPF; and (iv) a Development Policy Loan (DPL) to Strengthen Social Resilience to Climate Change. The details of these instruments, including the types of on-the-ground activities they finance, are summarized in Table 18. In addition, Mexico may receive results-based payments from the World Bank FCPF Carbon Fund for emission reductions for up to of 8.7 million tonnes of CO_2 emission reductions equivalent, based on its emission reduction plan[115].

[112] The Government of the Republic of Mexico's Intended Nationally Determined Contribution (2015). Retrieved from: http://www4.unfccc.int/submissions/INDC/Published%20Documents/Mexico/1/MEXICO%20INDC%2003.30.2015.pdf

[113] Piña, C.M., and Flores, J.O. (2013). Report on REDD+ Financing in Mexico 2009-2012. Forest Trends. Retrieved from: http://www.forest-trends.org/documents/files/doc_4520.pdf

[114] Not additional to CONAFOR´s budget and will not be devoted in their entirety to specific REDD+ activities, but will contribute to the objectives of REDD+ in Mexico.

[115] FCPF-CF Resolution CFM/9/2014/4 Selection of Mexico's Emission Reductions Program Idea Note into the Pipeline. Retrieved from: https://www.forestcarbonpartnership.org/sites/fcp/files/2014/April/Final%20Resolution%204%20Mexico.pdf

Table 18. Mexico's Forests and Climate Change Cooperation (FCC) Package: Finance, Sources, Instruments, and Uses of Funds

Finance Source and Instrument	Characteristics and Types of Activities Financed
Specific Investment Loan (SIL)	The SIL is a national investment operation to support the government of Mexico through a USD 350 million loan[116] in two main areas: a) Institutional strengthening and inter-institutional cooperation b) Support for community strengthening, SFM and payment for forest environmental services by means of incentive programs.
FIP grant and loan	The objectives of Mexico´s Investment Plan (IP) under the FIP are: (i) supporting a comprehensive framework for improved management of forest resources across landscapes at national, state, and local and community levels; (ii) providing investments to improve the forest management capacities of ejidos as well as indigenous and local communities; and (iii) supporting innovative credit and financing facilities for projects with specific REDD+ and climate relevant components. Mexico´s IP comprises four projects: • Projects 1 "Capacity building for sustainable forest landscapes management" and 2 "Mitigation resilience and sustainable profitability in forest landscapes", implemented by the World Bank, are part of the FCC package and support investments in sustainable productive forest activities, targeting local and indigenous community organizations and small landholders, as well as seeking to enable and promote policy and program implementation alignment for integrated multi-sectoral action and capacity development in priority forest landscapes. These projects are funded by a USD 25.66 million grant plus a USD 16.340 million loan from the FIP. • Project 3 "Financing Low Carbon Strategies in Forest Landscapes", implemented by the IDB, and disbursed by local banks, aims at creating a dedicated financing line accessible by communities and ejidos to finance low carbon activities in forest landscapes. This project is being implemented with the National Financing Agency for Agricultural, Livestock, Rural, Forestry and Fisheries Development (FINADE) and includes a FIP USD 5 million grant plus a USD 10 million loan. • Project 4,"Mexico Support for Forest Related Micro, Small, and Medium-sized Enterprises (MSMEs) in Ejidos", also implemented by the IDB, will establish a technical assistance facility expected to build community capacities for developing viable financial and technical proposals, and to develop basic business administration and entrepreneurial skills for sound, community-based enterprises to meet REDD+ targets. This project is being implemented with the Multilateral Investment Fund (FOMIN), the Mexican Fund for the Conservation of Nature (FMCN), and the microfinancing institution FINDECA SA de CV[117]. Resources: USD 1.2 million donation and USD 1.8 million loan from the FIP, plus a USD 3 million grant from FOMIN.
FCPF grant	Mexico received this USD 3.6 million grant from the Readiness Preparation Fund for the elaboration of studies and the implementation of dissemination and consultation activities concerning the design of the National Strategy for REDD+.
DPL loan	The purpose of this DPL (a USD 300 million loan) is to strengthen social resilience in response to climate change through policies that directly and indirectly benefit the poor through improvements in: (i) planning climate change adaptation at the state level; (ii) reducing disaster risks and territorial development at the municipal level; and (iii) providing sustainable community forest management at the community level.

[116] Not additional to CONAFOR´s budget and will not be devoted in their entirety to specific REDD+ activities, but will contribute to the objectives of REDD+ in Mexico.

[117] FINDECA is a non-regulated but legal financial institution based in Oaxaca. Its mission is to provide affordable financing for development in the Mexican rural south/southeast by providing finance for productive projects that incorporate sustainable use and conservation of environmental areas certified by third parties. For five years. FINDECA has been funding micro and SMEs in rural areas of Oaxaca, Chiapas, Guerrero, Quintana Roo and Puebla, which have had difficulties accessing financing.

However, the SIL-FIP package (sustainable communal forest management, forest development, productive chains, environmental services and special programs) represents only part of CONAFOR´s ongoing programs, many of which may directly and/or indirectly affect forest carbon stocks. In total, CONAFOR´s budget – which has increased significantly in the last decade – is around USD 595.7 million in 2015.

In addition, resources from bilateral sources are being directed to carry out a variety of activities, for instance:

- Grants from the US government (USAID) are being used for the operation of the Mexico Alliance for REDD+[118] (2011-2016) in the amount of USD 29 million and for El Ocote Biosphere Reserve REDD+ project (2009-2012) in the amount of USD 190,000;
- Funds from Spain (USD 175,000) are being used for the development of a methodology of an intermunicipal governance model for the implementation of REDD+ at the local level;
- A grant from France (around USD 306,000) is being used to strengthen local capacities for SFM at the Rio Ayuquila and other priority basins;
- A USD 2.8 million grant from the Latin America Investment Facility (LAIF) supports REDD+ early action implementation in Mexico's priority watersheds (2011-2014);
- A USD 15.53 million grant from Norway mainly funds the creation and establishment of an MRV system (2011-2015); and
- Private foundations, international NGOs, and research institutions have also provided grants to support the REDD+ process in Mexico through various activities. These sources include the Climate Works Foundation (USD 40,000), Oxfam International (USD 250,000), the Christensen Fund (USD 250,000), and the CFH Foundation (USD 25,000)[119].

Domestic resources in Mexico represent a large share of the total amount committed to REDD+ and related efforts, made up largely by CONAFOR´s USD 333 million contribution to the FCC project[120]. These resources come from CONAFOR´s budget, which is part of the Mexican Ministry of Environment's (Secretaría de Medio Ambiente y Recursos Naturales - SEMARNAT) contribution to the Special Concurrent Program (PEC) and the Special Climate Change Program (PECC). Box 8 describes the role of these two programs in supplying public finance to the rural sector in Mexico.

[118] The M-REDD+ project works to establish a national system to monitor, report, and verify carbon sequestration and the emissions that are avoided as the result of sustainable land management. It also: helps local organizations, government bodies, and forest communities build their institutional and technical capacity to implement REDD+; promotes information-sharing among the various stakeholders; strengthens existing REDD+ policies and laws; contributes to Mexico's National Strategy for REDD+; creates a financial architecture that helps support the implementation of REDD+ policies and projects; and coordinates regional-level "early action" REDD+ pilot sites.

[119] Piña, C.M., and Flores, J.O. (2013). Report on REDD+ Financing in Mexico 2009-2012. Forest Trends. Retrieved from: http://www.forest-trends.org/documents/files/doc_4520.pdf

[120] Ibid.

Box 8 - National development planning and public finance for forest emission reductions and sustainable land use in Mexico

The Mexican Constitution establishes that it is the responsibility of the state to advance national development and that it shall organize a democratic planning system to do so. To this end, the federal government, through the Ministry of Finance and Public Credit and following the provisions of the Law on Planning, elaborates the National Development Plan taking into account the proposals from federal agencies and bodies and the state governments, as well as from social groups and interested indigenous communities.

The main instrument to coordinate the public expenditure and the agricultural and rural development activities is the Special Concurrent Program (PEC). The PEC has among its priorities to "contribute to adapt agricultural, aquacultural and fishing activities through actions to prevent, mitigate and address the impacts of climate change, as well as the timely prevention, administration and attention of climatic, sanitary and market risks, taking into account the productive potentials of each region" and to "contribute to the sustainability of agricultural, aquacultural and fishing activities regarding the responsible management of water and land". The PEC is not a specific program, rather it is an approach by the government which reflects the group of public policies devoted to rural development, and as such it represents more a sum of actions than an integrated set of policies.

Economic activities in the rural sector are financed on the basis of the PEC with resources from the SAGARPA, Agrarian Reform, CONAFOR and other public entities. For 2015, the budget allocated to the PEC is USD 25,550.7 billion, USD 1,215.7 billion of which will be devoted to environmental activities.

Less than 5% of the overall PEC is dedicated to environmental activities. In 2015, SEMARNAT will spend USD 553 million on environmental activities mainly through CONAFOR´s forest programs (USD 389.2 million), and the Ministry of Agriculture (Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación - SAGARPA) will apply USD 662.6 million to a variety of activities ranging from bioenergy (USD 33.5 million) to the conservation and sustainable use of soils and water (USD 141.8 million)[121].

[121] The Government of Mexico (2015). Decreto de Presupuesto de Egresos de la Federación para el ejercicio fiscal 2015, Annex 11. Retrieved from: http://www.diputados.gob.mx/PEF2015/exposicion/decreto_presupuesto.pdf.

6.3 Expenditure Allocation Mechanisms

Through its subsidies programs, CONAFOR provides the majority of funding for forest management and conservation activities in Mexico, establishes operating rules for its programs which define their objectives and regulate their implementation. These rules establish a range of requirements from eligibility criteria to the number and type of benefits granted, and serve as the basis for the selection of beneficiaries on a competitive basis. Once beneficiaries are identified, CONAFOR´s subsidies are channeled through the Mexican Forest Fund (FFM).

The Mexican Forest Fund is considered the largest environmental services fund in Latin America. In the period 2004-2012, the FFM (including its subsidiary, the Biodiversity Endowment Fund), with resources from the federal government and co-financing from local governments, NGOs, and private entities, provided support to 1,008,858 ha of forest containing around 28.5 million tonnes of CO_2 equivalent[122]. The FFM was established in 2003 and is implemented by Banco Mercantil del Norte, S. A. (BANORTE) as the agent of the Fund and with CONAFOR as its principal[123]. The mission of the FFM is to: promote conservation; increase sustainable use and restoration of forests and other natural resources; facilitate access to financial services; promote projects that contribute to the integration and competitiveness of the productive chain; and develop payment mechanisms for environmental services. Legally the FFM can receive contributions from all levels of government, from international bodies, and from private entities. It can also receive taxes on imported forest goods, as well as income from payments for environmental goods and services, from the payments made by the users of hydrological basins. It also receives interest and income from investing its resources in state bonds. In practice, the vast majority of the resources channeled through the FFM come from CONAFOR, although there are also other, rather minor contributions, for instance, from water rights payments for CONAFOR´s environmental services program and from public and private actors involved in its program for the promotion of local PES mechanisms through matching funds (see Table 19).

Table 19. Contributions to FFM Programs by Type of Source

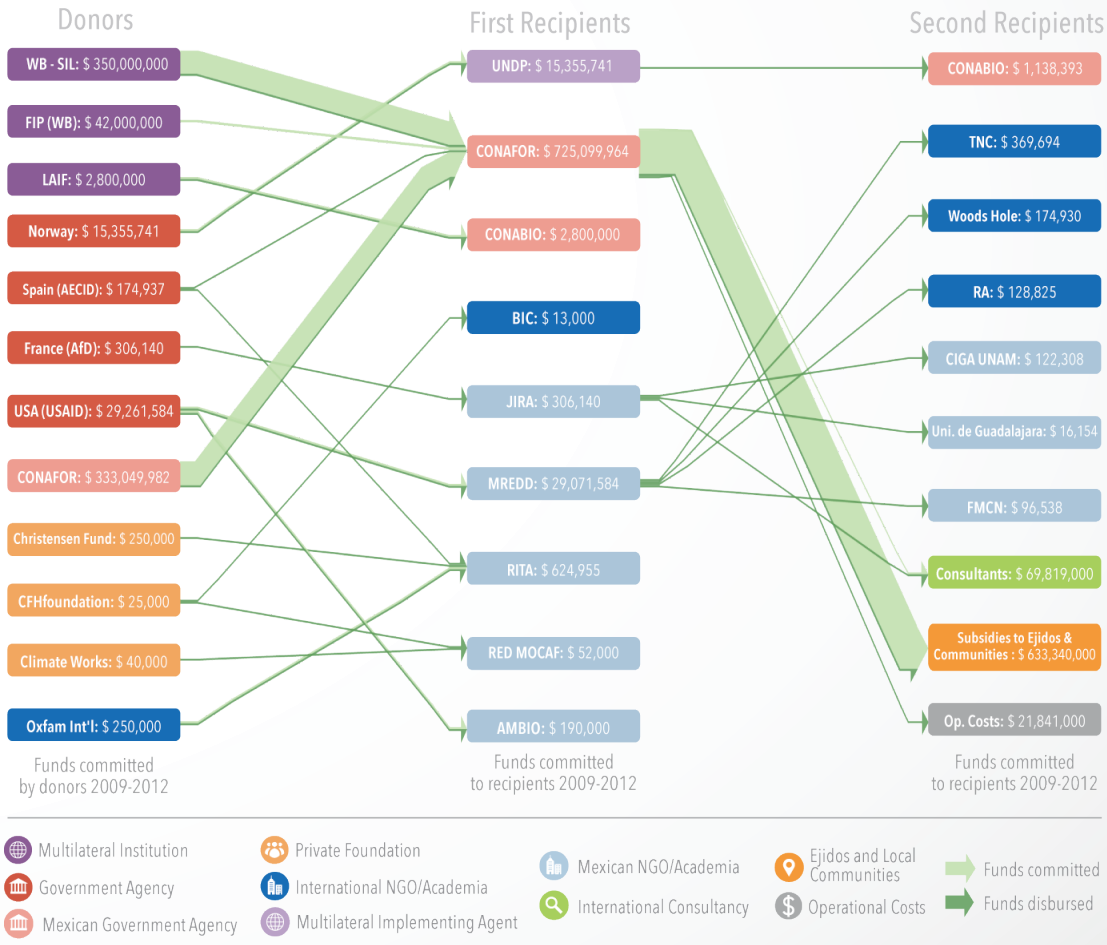
Program	Public Sources	Private Sources
PES programs	CONAFOR´s subsidies, variable. In 2015, the budget for this program amounts to some USD 170 million.	A fixed fee of around USD 25 million per year for water rights payments is established by law[124].
Local PES mechanisms through matching funds	CONAFOR´s resources (up to 50% of annual payments) In 2010, these resources amounted to USD 4.4 million.	At least 50% of annual payments In 2010, private sources (and one local government) contributed USD 4.9 million.

[122] Unidad de Medio Ambiente, Departamento de Dessarrollo Sostenible, Banco Mundial. (2013) Informe N°: 81857-MX. 21 de octubre de 2013.
[123] Banorte is the largest domestically held bank in the Mexican market and the 4th largest overall by assets.
[124] Article 223 of the General Rights Law.

The FFM manages its financial flows in 5-year cycles, so that beneficiaries of results-based programs (e.g., those participating in environmental services programs with 5-year contracts) have guaranteed access to payments for the whole cycle irrespective of any annual budget variations, provided monitoring data demonstrate their compliance with the corresponding program´s conditions.

The FFM is also used to allocate and disburse international resources. In the context of the FCC package, it will channel 88% of the USD 392 million SIL-FIP loan to fund some of CONAFOR´s subsidies programs[125]. Most of the remaining international resources – arising primarily from large bilateral commitments from the US and Norway – are transferred through specific channels. USAID directs resources to local NGOs and academia, which in turn transfer some funding to international NGOs and academia as second tier recipients. In the case of Norway, funding is channeled to UNDP, which then directs the resources to the government of Mexico (CONABIO). Private foundations, contributing with smaller amounts, distribute their funds primarily to local NGOs. Figure 2 illustrates the flow of resources from donors to beneficiaries in the period 2009-2012, as well as the allocation channels used in each case. CONAFOR is currently deliberating on the role (if any) of the FFM in the allocation of eventual results-based payments to the REDD+ Early Action Areas incorporated in Mexico´s investment plan.

Figure 2. Donors, allocation channels, and beneficiaries of REDD+ finance in Mexico 2009-2012[126]



[125] Piña, C.M., and Flores, J.O. (2013). Report on REDD+ Financing in Mexico 2009-2012. Forest Trends. Retrieved from: http://www.forest-trends.org/documents/files/doc_4520.pdf

[126] Ibid.

6.4 Financing Sustainable Land-Use Programs in Mexico

Mexico´s forest policy promotes the integration and coordination of public policies and government programs at the federal, state, and municipal levels to effectively address the drivers of deforestation and degradation. With this approach, Mexico hopes to create enabling environments at the basic territorial units (regions, hydrological basins or biological corridors) to allow the sustainable rural development of communities. However, there is significant room for improvement in the integration of policy formulation and implementation between the different ministries and their local agencies.

6.4.1 National programs

CONAFOR´s subsidy programs are the most important national programs that support activities to reduce forest emissions and carbon stocks. These programs are concentrated under the umbrella of PRONAFOR, which provides support for a number of activities including: capacity building, forest restoration and productive conversion, forestry, supply and transformation, environmental services, commercial plantations and support for research. Participation in the programs is voluntary. Eligible beneficiaries are: Mexican individuals, organizations, ejidos, and communities that either possess forested areas or are devoted to forest activities (conservation, restoration, management, transformation, industrialization, or commercialization of forest products) and communities whose forests are found within eligible areas determined by CONAFOR for each specific support program.

In order to access PRONAFOR´s subsidies, potential beneficiaries must comply with the requirements and provisions contained in the program´s operation rules, which also set the applicable selection and prioritization criteria. Submitted proposals deemed viable by CONAFOR are evaluated using general prioritization criteria applicable to all programs and specific technical and social criteria established for each support concept or modality. Additionally, cooperation agreements are signed with the beneficiaries where rights and obligations are established, and through which interest is manifested and consent is granted to receive some kind of support from CONAFOR.

6.4.2 Subnational programs

The development of Mexico´s REDD+ vision includes the design and implementation of REDD+ Early Actions (ATREDD+), which are efforts at the subnational level, including state and local governments that aim to address the causes of deforestation and degradation at the landscape level. These actions aim to test different institutional arrangements, governance structures, and finance and monitoring mechanisms in order to inform the national REDD+ process. The initial REDD+ Early Action areas are located in the states of Jalisco, Chiapas, and the Yucatán Peninsula (Campeche, Yucatán, and Quintana Roo), and are planned also in Oaxaca, Estado de Mexico, and Michoacán. In total, the ATREDD+ will cover areas within which about 70% of the nation's deforestation takes place.

The proposed ATREDD+ program is being financed through different combinations of sources and instruments, building on some of CONAFOR´s support programs and their associated funding mechanisms and financial instruments (mainly the FFM and local trust funds) (summarized in Table 20). In order to participate in the economic support that CONAFOR gives in the ATREDD+, applicants submit letters demonstrating that collective consent has been granted to participate in the program[127]. The ATREDD+ objectives are further supported by the FCC package, which includes FINADE's rural credit program, micro finance provided by FINDECA SA, and technical assistance through FOMIN (see Table 18).

127 Forest Carbon Partnership Facility, Carbon Fund, (2013) Emission Reduction Program Idea Note, v.4 August 2013. https://www.forestcarbonpartnership.org/sites/fcp/files/2014/February/Mexico%20ER-PIN%20CF9%20English.pdf.

Table 20. Summary of ATREDD+ Funding Mechanisms

ATREDD+	Objectives	Funding mechanism	Disbursement modalities
Special Program for Jalisco Coastal Basins	To consolidate the work of Public Territorial Development Agents (APDT[128]) such as inter-municipal boards as decentralized public entities that: (i) guarantee the integration of programs and public policy instruments of the three levels of government in a single territorial unit at the basin scale; (ii) build technical and institutional capacities and develop long-term local governance systems; and (iii) carry out assessments and consultations and spread information at the local level. Concurrently, local development agents (ADLs[129]) will be established to advise and support ejidos, communities, and small landowners in the implementation of activities and projects related to REDD+, and will ensure that these entities create measurement, reporting and verification (MRV) capacities regarding carbon, biodiversity, waste, and other relevant aspects.	This ATREDD+ merges resources from the French Development Agency (AfD), the Spanish Agency for International Development Cooperation (AECID), the European Union through the Latin American Investment Facility (LAIF), the state government of Jalisco, and CONAFOR, which provides support under the framework of the FCC package through the following programs: ProÁrbol, the Special Program on Jalisco´s Coastal Basins, and the local PES mechanisms through matching funds. Additionally, the Ministry for Rural Development of Jalisco (SEDER) together with the local representation of CONAFOR supports the creation of municipal associations. The three inter-municipal boards involved (JIRA, JIRCO, and JISOC) have their own trust funds, which allow them to receive public resources from the federal government, civil society, and the private sector.	On June 15, 2011, an agreement between CONAFOR and the Rural Development Secretariat of the state of Jalisco was signed to finance implementing agents in the coastal basins region. Implementing agents disseminate the program in ejido and community assemblies and other social participatory forums; help prepare requests and applications, provide assistance and advice to beneficiaries; and monitor the execution of activities. Subsidies are usually granted based on applications and are are disbursed in the first year to support initiation of activities (e.g., tree planting) and thereafter upon verification of compliance with the requirements established in the program´s rules of operation or guidelines. Beneficiaries receive training and institutional support through CONAFOR.

[128] ATREDD+ are based on local governance mechanisms, identified by CONAFOR as the best option to facilitate the articulation and continuity of territorial management and planning policies. Under this scheme, Public Territorial Development Agents (APDT) are a key element for the implementation of ATREDD+ since they are in charge of promoting and managing public and private funding for sustainable rural development and provide coherence to REDD+ initiatives within the framework of ATREDD+. APDTs are bodies that respond to public interests, work at the regional or landscape levels, support regional development planning and promote the sustainable use of natural resources, have their own technical staff and finance management capacities.

[129] ADLs support ejidos and communities in the preparation of specific projects advancing issues included in the regional rural development agenda, thus creating the capacities in ejidatarios and comuneros required for the implementation of such projects. ADLs help in the development of integral management plans, communal land planning, and micro-basin and regional studies, and have the capacity to boost the integration of productive chains and communal forest enterprises, as well as promote and support the establishment of local environmental services payments mechanisms and to support local processes under the REDD+ strategy.

ATREDD+	Objectives	Funding mechanism	Disbursement modalities
Yucatán Peninsula's jungles	The aims of this ATREDD+ are: (i) to socialize local governance schemes so that the implementation of public policies is supported by public opinion; (ii) to achieve a low carbon rural development with zero net emissions in the forest sector in the region; and (iii) to boost SFM associated with conservation actions within natural PAs as well as voluntary initiatives related to environmental services programs and to sustainable livestock and agriculture processes. The ATREDD+ initiative also anticipates the establishment of a climate action fund. The sum of these actions will help in building a joint vision of the three states for the implementation of REDD+, particularly regarding finance schemes through an interstate climate fund.	This ATREDD+ mixes funds from LAIF through a joint collaboration AFD / AECID/ CONAFOR for the implementation of early actions in Mexico´s priority basins through the construction of local governance mechanisms and resources from the governments of Yucatán, Campeche, and Quintana Roo, as well as from CONABIO, The Nature Conservancy (TNC), the National Commission on Natural Protected Areas (CONANP), and CONAFOR. CONAFOR´s support originates from the ProÁrbol (PRONAFOR) program, the Special Program for the Conservation, Restoration and Sustainable Management of Forest Resources in the Yucatán Peninsula, all of them included in the framework of the FCC project with the World Bank.	This ATREDD+ initiative on the Yucatán Peninsula is an outcome of the general coordination agreement signed by the governments of the states of Yucatán, Quintana Roo, and Campeche for the purpose of establishing the Regional Climate Change Mitigation and Adaptation Strategy for the Yucatán Peninsula. The project is coordinated by the Office of the Coordinator for Biological Resources and Corridors at CONABIO, under the Sustainable Rural Development in Biological Corridors Project. Subsidies are generally coordinated and disbursed via CONAFOR (first ex-ante and later ex-post based on verification of results), based on community applications.
Biological corridors and Selva Lacandona in Chiapas	The aim is to stop deforestation and achieve the conservation, restoration, and sustainable management of the Selva Lacandona by integrating the efforts of the government and society at the biological corridor level, with the idea of replicating this scheme in other corridors in the country.	This ATREDD+ is funded since 2010 through CONAFOR´s Special Program for the Conservation, Restoration and Sustainable Management of the Selva Lacandona, which integrates three modalities of support: agroecology, regeneration of jungles, restoration of streambeds and rivers, diversified reforestation, PES, forest studies and community forestry. Additionally, the ATREDD+ aligns support programs of CONAFOR, and SAGARPA and CONABIO.	CONAFOR and CONABIO are working together to coordinate the financial resources of those institutions. Subsidies are generally coordinated and disbursed via CONAFOR (first ex-ante and later ex-post based on verification of results) or SAGARPA (ex-ante).

6.5 Lessons for Other Countries

The Mexican case provides a number of lessons that may be useful for countries with similar national circumstances and REDD+ frameworks, including:

Leadership at the highest levels of government can generate the political will needed to reach adequate levels of funding. During the period when the main financial structure for REDD+ in Mexico was established, climate change and forests were at the top of the president´s agenda, as reflected by the 16th Conference of the Parties to the UNFCCC held in Cancún. This translated into a significant increase in CONAFOR´s budget, as well as into an active participation in international REDD+ initiatives funding REDD+ readiness activities, and facilitated the acceptance, by the Ministry of Finance, of relatively large international loans for forest and climate change activities in the country.

Use existing mechanisms, where possible, to channel resources more efficiently. Strong domestic systems, private sector financing institutions, and fiduciary capacity are valuable assets for obtaining and channeling resources at the various levels of implementation of REDD+ activities, as well as for the design of innovative financing schemes.

It is essential to align policy objectives across all relevant ministries, including agriculture and energy. While there are joint programs and coordination between the Ministry of Environment (SERMANAT) and the Ministry of Agriculture (SAGRAPA), the integration of the activities and policy goals between both agencies needs to be strengthened to achieve long-term sustainable development goals. It is also important to correct programs that foster unsustainable practices and to establish policies that incentivize ways of production that not only preserve, but also restore the environment.[130]

Defining a single agency to lead the design of the financing strategy helps to support sustainable landscape and forest activities. CONAFOR has largely led the design of the financial scheme for REDD+ in Mexico, and this leadership has facilitated not only the coherence of the policy, but also the relatively fast development of investment plans and proposals, and thereby, has improved access to international funding sources.

REDD+ can be used to frame existing resources, programs and governance mechanisms at various levels in coordinated initiatives aimed at achieving sustainable rural development. For instance, the FCC package, through its various elements, is gathering actors that traditionally had little activity in the forest sector (such as Financiera Rural and the IDB), and piloting local schemes that were originally established for purposes that were often not explicitly related to emission reduction activities in forests, such as the local development agencies, the intermunicipal boards, and the biologic corridors.

Local agencies may serve to align sectoral resources that are otherwise disconnected at the federal level. The ability for federal support programs to reach the rural sector to achieve sustainable rural development has long been a challenge in Mexico as coordination among agricultural and forestry sectors at the national level has proven to be difficult. The landscape approach proposed in Mexico's REDD+ framework is has been effective in aligning resources from federal support programs and other sources through the work of local agencies.

Multi-level governance and fund management may be effective in addressing drivers of deforestation, but nevertheless pose important challenges. One of the main challenges to the success of REDD+ at the national level in Mexico is the effort required to build the necessary local-level capacity to establish robust and sound governance and fund management structures across the rural sector. Current ATREDD+ areas build on structures that have been in place for some time, and thus replicating them in other regions may take time. Moreover, even existing local-level institutions and funds should be strengthened to increase transparency and capacity so that they may access and distribute resources efficiently. This is the case with many state-level funds, which have been criticized for a lack of transparency and equity in the distribution of public resources to rural areas.

[130] Fernández Vázquez, E., (2014). Integración de la política ambiental en México. El caso de la política agropecuaria, Gestión y Política Pública, 23(2), pp. 465-505.

Any forest, landscape, REDD+, and LED strategy should be supported by strong consultation platforms. Given the multi-sectoral nature of REDD+ and the high expectations regarding the significant international resources that might be available for forest owners, the establishment of active consultation platforms – both within government and with civil society – has been critical to handle expectations, socialize, and legitimize funding strategies and proposals (including regarding benefit distribution), and to ensure sectoral coordination as much as possible.

The involvement of multiple actors may be complicated and lengthy, but is key for the success of REDD+ activities. The involvement of a large number of local, national, and international actors in carrying out the complex investment plan designed by CONAFOR has necessitated extensive, time-consuming work and capacity building. While this lengthy process has reduced the implementation speed, the fact that many are participating in the process may help ensure the continuity of the scheme even if there are disruptions in staffing.

7 Ethiopia: Using REDD+ and LED Finance to Create a Climate Resilient Development Strategy and Build Capacity

Ethiopia was once endowed with diverse forest resources across wide-ranging altitudes and agro-ecological zones. Unsustainable natural resource utilization has led to a significant decline in forest resources. Available data suggest Ethiopia's high forest has declined from nearly 40% of land cover in the early 19th century, to approximately 3.6% in 2013[131]. In the southwest of the country, where most of the remaining dense high forests are found, 60% of forests were cleared between 1970 and 2000. Deforestation and degradation remain quite high; the main drivers are agricultural expansion, grazing, illegal logging, and fuelwood harvesting. Contributing factors include resettlement, weak law enforcement, lack of institutional capacity and incentives for SFM, as well as a lack of effective regulation and clear property rights.

Ethiopia's national REDD+ Readiness Program supports the implementation of climate resilient and sustainable land use. The Climate Resilient and Green Economy (CRGE) Program, launched in January 2013, is coordinated by the Ministry of Environment and Forest (MEF) and is funded jointly by FCPF, Norway, and the UK. Under this program, Ethiopia is currently preparing its national REDD+ strategy.

The government of Ethiopia has identified the regional state of Oromia to serve as a pilot for a jurisdictional REDD+/sustainable landscapes program. The World Bank's BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL) is in the process of preparing a results-based investment in Oromia, which combines technical assistance, results-based payments and attempts to attract private sector finance.

131 Teferi, M., Gole, T. W., and Yelibora M., (2013) Ethiopia: Mapping REDD+ finance flows 2009-2012. Forest Trends. Retrieved from: http://www.forest-trends.org/documents/files/doc_4197.pdf

7.1 REDD+ and LED: The Ethiopian Context

Ethiopia's overarching climate change strategy is articulated in its Climate Resilient Green Economy (CRGE) initiative. The CRGE outlines the vision, strategy, financing, and institutional arrangements which the country will pursue to attain the goals of economic growth, zero net emissions, and climate resilience. Preliminary estimates indicate that the CRGE will require total expenditures of around USD 150-200 billion[132] (USD 80 billion from capital investments and USD 70 billion operating and program expenses) over the next 20 years[133] with 2010 as the base year.

The CRGE provides specific targets for reducing emissions from eight key sources: energy, buildings and cities, REDD+, soil-based emissions, livestock, transport, industry, and health care. Within these sources, four priority areas have been selected for fast-track implementation; they hold the immediate prospect of achieving economic growth and large-scale carbon abatement potential, through[134]: (i) attracting finance to exploit Ethiopia's vast hydropower potential; (ii) large scale promotion of efficient cooking technologies; (iii) promotion of efficient livestock value chains; and (iv) reducing emissions from deforestation and forest degradation and enhancing forest carbon stocks through REDD+.

132 Eshetu, Z., et al., (2014). Climate finance in Ethiopia. Overseas Development Institute (ODI), London and the Climate Science Centre, Addis Ababa University, Addis Ababa.

133 The estimated amount is primarily for power generation and the transport sector (e.g., railway). This means not all of the expenditure is additional to current investment plans. It would also be necessary in a business as usual growth scenario.

134 Implementation of prioritized initiatives is also intended to offer co-benefits such as improved public health and promotion of rural development by increasing soil fertility and food security.

The CRGE is embedded within Ethiopia's environment, climate change, and national development policy framework. Most notably, the CRGE vision is supported by the Green Economy Strategy (2011) and the Climate Resilient Strategy, of which to date only one sectoral policy on agriculture has been developed. The government is also developing additional policy documents, like the Sector Reduction Mechanism (SRM), to guide the integration and implementation of CRGE investments within federal and regional plans.

The CRGE is reinforced by Ethiopia's main national development plan, the Growth and Transformation Plan (GTP). GTP I (spanning 2010-2015) addresses climate change as a crosscutting issue and is reflected in key policy documents regarding environmental, legal, climate, and national development[135]. It prioritizes building a climate resilient green economy to counter the development losses caused by climate change. The GTP identifies objectives, targets and implementation strategies that will be pursued in the name of CRGE goals. The next GTP (GTP-2: 2015-2020) is currently being formulated and is expected to pursue a similar policy direction and development vision.

7.2 Aligning Ethiopia's Land-Use and Forest Policies with Sources of Finance

Despite improvements in the macroeconomic setting, financing ambitious climate and development goals remains a challenge for Ethiopia. While domestic fiscal revenue generation, including both tax[136] and non-tax revenues[137], have generally tracked domestic GDP growth, the government is still far from meeting its financial needs from domestic revenues, and in particular the mobilization of tax revenues remains low. However, as part of financing the country's LED path, the Ethiopian government issued its first sovereign bond sale in December 2014 to raise USD 1 billion with a 10-year bond from foreign investors[138].

Ethiopia's national budget has accounted for 80% of all climate expenditure while international donors covered the remaining 20%[139]. Out of the total government expenditure on climate related initiatives, roughly 13% of the total has been allocated to activities that reduce emissions in the land-use sector while the majority of the activities have been allocated to adaptation. A significant proportion is devoted to investments in agriculture and infrastructure development such as renewable energy (hydropower, geothermal, etc.) to ensure food security and industrial growth. For example, 75% of all domestic government climate expenditure is spent on programs under the Ministry of Agriculture (MOA) and the Ministry of Water, Irrigation and Energy (MoWIE)[140]. Most notably, the USD 4.8 billion budget for the Grand Ethiopian Renaissance Dam (GERD) hydropower project (6000MW) comes from the domestic budget in the form of public bonds, loans from state-owned banks, and grants from citizens. Upon completion in 2017, GERD is expected to triple the current electricity supply offered at a low price in urban centers. This could offset unsustainable charcoal production and consumption in cities such as Addis Ababa, with a daily consumption rate of 42,000 sacks[141] of charcoal[142].

International financial commitments (including pledges) for climate initiatives in Ethiopia reached over USD 400 million by 2014[143]. The majority of the funding is allocated to activities that reduce emissions in the land-use sector.

[135] Environmental Policy of Ethiopia (1997); The Environmental Protection Organs Establishment proclamation (No. 803/2013); Nationally Appropriate Mitigation Actions (NAMA) (2010); Climate Resilient Green Economy (CRGE) Vision (2011); Green Economy Strategy (2011);Sector Reduction Mechanism (SRM); Climate Resilient (Agricultural) Strategy; REDD+ Strategy; Agricultural Development-Led Industrialization (ADLI); The Ethiopian Industrial Development Strategy; Growth and Transformation Plan (GTP); (2010-2015).

[136] The tax mix of Ethiopia is classified as direct and indirect tax. The direct tax comprises four income schedules: personal income tax, rental income tax, business profit tax, and other income tax at the federal level with additional taxes such as agricultural income tax, rural and urban land-use fee at regional and chartered cities such as Addis Ababa and Dire Dawa. Indirect tax comprises value-added tax/turnover tax, excise tax, import duties and import surtax.

[137] Non-tax revenues include fees, charges, and state-owned enterprises.

[138] Brand, R., Wallace, P., and Pronina, L., (December 2014). Ethiopia Starts Marketing Debut Eurobond for Projects. Bloomberg Business News. Retrieved from: http://www.bloomberg.com/news/2014-12-04/ethiopia-starts-marketing-debut-eurobond-for-railways-sugar.html

[139] Eshetu, Z., et al., (2014) Climate finance in Ethiopia. Overseas Development Institute (ODI), London and the Climate Science Centre, Addis Ababa University, Addis Ababa.

[140] Ibid.

[141] Weight of a sack varies, ranging between 25-50 kgs.

[142] Oromia Forest Landscape Program Technical Working Group Stakeholder Consultation, August, 2014. Adama, Ethiopia.

[143] Ibid.

These activities include the SLMP, scaling up of renewable energy projects and promotion of participatory forest management (PFM). Within the narrow context of REDD+, to date the majority of the expenses have been for capacity development with USD 13.6 million committed to the ongoing readiness activities. Major donors include the governments of Norway and the UK, as well as the FCPF and the BioCarbon Fund.

A further important source of funding for LED in Ethiopia is official development assistance (ODA) through budget support, capital development, and other concessional lending. This ODA is not specifically for climate mitigation, but can support REDD+ and LED goals. Over the past 4 years, donors contributed on average USD 3.5 billion per year in ODA, over half of total government expenditure and 7.5% of GDP. The largest share of funding is currently spent on the education and health sectors, followed by food security programs such as the Productive Safety Net Program's (PSNP) cash-for-work program and Feed the Future's crop and livestock value chain support program through private sector investment.

The domestic private sector is not currently a significant source of capital for sustainable land-use investments. The government of Ethiopia has also been slowly privatizing the Ethiopian economy in an effort to increase private sector engagement and improve the effectiveness and efficiency of previously state-owned enterprises. Despite these efforts, however, the domestic private sector remains in its infancy. The continued privatization of state-owned enterprises, which were significant contributors of non-tax revenues, has contributed to relatively lower non-tax revenues in the budget[144]. In addition, allocation of public finance for massive hydropower, factories, roads, and railway projects through a government-controlled approach continuously drains available credit from state banks, squeezing out private sector enterprises, particularly SMEs.

[144] Ibid.

7.3 Expenditure Allocation Mechanism

As the primary funding vehicle of the CRGE investments, the CRGE Facility is intended to consolidate all climate finance (international and domestic) into a single multi-donor trust fund. The CRGE Facility has been set up to finance the implementation of CRGE activities by mobilizing funds from international, public, and private sources. While still not fully operational, the establishment of the CRGE Facility reinforces the country's commitment to programmatic and policy-based budgeting and instills a coordinated process that can mix different forms of finance, including results-based payments. Towards this goal, a comprehensive sector-based implementation framework called the Sectoral Reduction Mechanism (SRM) has been designed to enable implementing institutions to translate the high level CRGE strategy into long-term programmatic investment plans. Under the SRM, implementing entities (federal line ministries and regional governments) are mandated to develop sectoral implementation plans and specific investment proposals, with the goal to leverage finance through the facility. This process is supported and guided by the CRGE Facility to ensure that implementing entities have access to sufficient funds. While primarily targeted at government institutions, other actors such as civil society and private sector entities can also apply to the facility for financing.

Donor funds can be deposited into one of two accounts, one managed directly by the CRGE Facility and the other with UNDP assistance. The CRGE Facility is managed by the Ministry of Finance and Economic Development (MoFED). The United Nations Development Programme (UNDP) has played a significant role in establishing the facility by providing fiduciary risk and financial management functions. MoFED has established two accounts for donors to deposit funds:

- **The Facility National Account:** a dedicated account for the facility that is managed by MoFED. Ultimately, the government of Ethiopia intends that all contributors to the facility will be able to put funds directly into the facility account, and therefore the use of an 'international account' (see below) is considered to be an interim management arrangement, designed to promote and enable flexible, coordinated, and predictable funding.

- **The International Account:** to ensure that the needs of all potential financiers can be accommodated, MoFED has contracted the Multi-Partner Trust Fund (MPTF) Office of UNDP to establish and manage a separate 'International Account' to channel funds into the facility[145]. This account has received USD 5 million so far. This arrangement allows the government to attract more external funding than would be available if it only had a domestically managed account, and also helps build domestic capacity. The agreements signed between the government and UNDP entitles the latter to charge 1% of the amount contributed by each contributor to cover the cost of administration.

The Ethiopian parliament has endorsed the allocation of 2% of the federal budget to the CRGE Facility. Before it became operational in 2012/13, the CRGE Facility received initial development support from Austria (USD 800,000), followed by additional support from the UK (USD 24 million), and then a commitment by the government of Norway of USD 60 million every year for five years[146]. In December 2014, Denmark signed on to provide USD 4.6 million[147] to be disbursed over a two-year period (2015-2016). This pledge was announced during the signing of the Lima declaration at COP20, where a further funding commitment was made by Norway (USD 10 million). The facility has already begun disbursing funds to project implementers under its fast-track investment window.

To allow for both long-term strategic planning and immediate action, the facility has a two-track approach for financing the CRGE and REDD+ activities. In long-term strategic planning, the CRGE Facility will allocate resources to ministries and regional governments according to the prioritized investments detailed in their sectoral and regional implementation plans (i.e., SRM). These resources will complement existing investment and funding, and will provide opportunities for ministries to draw on the facility for additional funding for CRGE projects. Despite the efforts to consolidate finance, existing delivery mechanisms (e.g., used by the World Bank's SLMP program) that rely on MoFED and sectoral ministries are expected to run in parallel to the CRGE Facility. However, close coordination is expected and the facility is expected to employ existing delivery mechanisms, whenever possible, to channel funds.

In the short term, the facility offers the fast-track investment window whereby line ministries and regional governments are invited to develop fast-track investment proposals for activities that align with both CRGE and GTP objectives. The facility provides guidance and ad hoc support to accelerate the fast-track investments. The first USD 2 million was provided to implementing entities, and a further full disbursement of USD 19 million is planned for June 2015[148]. The fast-track arrangement is intended to build momentum towards the implementation of CRGE activities across line ministries and regional government as well as to disburse the already available facility resources and test the investments. For example, the inclusion of climate-smart activities in the already existing flagship initiatives, such as the SLMP program, is considered a set of fast-track investments in the agricultural sector.

7.4 Sustainable Land-Use Programs in Ethiopia

The government of Ethiopia is using flagship development programs to operationalize CRGE objectives. Most of the programs not only have incorporated climate-smart initiatives contributing to emission reductions in the land-use sector but also provide an example of the 'fast track' approach to pilot-testing and implementing initiatives that support the CRGE initiatives in the agricultural sector and the country's proposed REDD+ policies.

[145] MoFED, (2012) Ethiopia's Climate Resilient Green Economy (CRGE), Facility Terms of Reference. MoFED.

[146] OECD, (2014) Climate Resilience in Development Planning: Experiences in Colombia and Ethiopia. OECD Publishing.

[147] DENIDA, (2014) Greening Agricultural Transformation in Ethiopia (GATE), Thematic Program Document (2014-2017). Retrieved from: http://um.dk/en/~/media/UM/English-site/Documents/Danida/About-Danida/Danida%20transparency/Consultations/Del%202%202013/Greening%20Agricultural%20Transformation%20in%20Ethiopia.pdf

[148] Ibid.

Participatory forest management (PFM) is an important land-use and REDD+ policy that is supported by a number of different policies and measures. The Oromia Forest and Wildlife Enterprise (OFWE) is the principal implementer of PFM programs in Ethiopia (see Table 21). OFWE was set up in 2009 to sustainably conserve, develop, and use forest and wildlife resources in Oromia, through community participation. OFWE manages about 2.1 million ha of natural forest, 74,000 ha of plantation forest and 8,300 km^2 of PAs.

Table 21. OFWE's Source of Revenue and Role in PFM

Description	Average annual revenue	Source of revenue	Role in PFM	International support
Autonomous public enterprise with a USD 80 million budget that holds the concession rights to all forest plantations and native forests (367,000 km^2) within Oromia Regional State. OFWE has a public mandate for sustainable management of forest and wildlife and to provide technical support to sustainable community and private forest, to farmers living around the forest, etc.	USD 10 million	Timber harvesting, certified forest coffee, forest honey, spices, ecotourism, wildlife hunting, from forest managed through PFM	Serve as the project implementation agency: Enter into joint forest management agreements with communities; Share revenues with communities; Collect forest products through cooperatives and exports to international market; Pay forest user groups premiums from international market (e.g., coffee).	Thus far, almost all PFM pilot projects are set up and funded by donors (GIZ, JICA) and managed by NGOs (Farm Africa-Sos Sahel) OFWE's institutional capacity and funds remain too low to ensure sustainability of PFMs when international support to pilot PFMs end.

Sustainable land-use activities are often integrated in landscape-level investment packages. Such investment packages include PFM and other forest sector activities, sustainable cook-stove programs, and investments in agricultural activities (livestock, coffee). Environmental and human development goals include:

- increased carbon stock enhancement in agricultural landscapes through a watershed approach (incorporating trees, crop, livestock, and people);
- promotion of local level participatory land certification, land-use planning and provision of land certificates to improve tenure security; and
- improvements in the quality of the public agricultural extension system toward the objectives of sustainable land management practices.

7.4.1 Example programs

Examples of investment packages include the Bale Mountains Eco-Region REDD+ Project, the SLMP, and the BioCarbon Fund's Oromia Forested Landscape Carbon Finance Project (OFL project). These projects generally receive funding from multiple donors and seek to strengthen existing land-use policies. While the investment largely stems from international sources, Ethiopia supports

these programs by providing both the core funding for institutions as well as in-kind contributions.

The Bale Mountains Eco-Region REDD+ Project

The Bale Mountain project is the first large-scale forest carbon project that builds on the Bale Eco-Region Sustainable Management Programme, which has been running since 2006. The Programme was initially funded by a grant from Ireland, the Netherlands, and Norway. It covers a total area of 260,000 ha with an emission reduction potential of 23.0 Mt CO_2[149]. OFWE is the principal implementer of the project in collaboration with Farm-Africa and SOS Sahel-Ethiopia. The project proposed, among others, scaling up of PFM as a primary forest management policy to address drivers of deforestation. It was reported that forest conditions under PFM had been improved, including increased forest revenue for OFWE (see Table 21 above). The livelihood benefits of PFM for communities through non-timber forest products, however, remain minimal[150]. The project supported knowledge and capacity building in REDD+ project development and informed the development of Ethiopia's readiness plan proposal under the FCPF.

The Sustainable Land Management Program (SLMP)

SLMP is a flagship program begun in 2009 to address the country's fundamental problems associated with land degradation and agricultural productivity. SLMP is a multi-donor and multi-stakeholder program that provides a platform whereby bilateral and multilateral development partners work with national, regional, and local actors, aligning and harmonizing their efforts to increase agricultural productivity and regeneration of degraded agricultural landscapes. SLMP-1 (2009-2014) was financially supported by World Bank and other international development partners such as, KfW, CIDA, Finland, GIZ, EU, IFAD, and GEF. SLMP-2 (2014-2019) has a total budget of USD 114 million sourced from Norway, IDA and GEF.

SLMP is an incentive-based program. The incentive categories include in-kind, financial, institutional, and indirect support (production inputs and technologies for livelihoods improvement and income generation). Most in-kind benefits are arranged on a revolving fund basis with the project covering 30-40% of the cost. Beneficiary farmers cover the remaining cost over an extended period of time either through labor arrangements or loans from microfinance institutions.

The budget procedure under SLMP operates at the federal level under the Ministry of Agriculture (MOA). Donor funds are pooled to the SLMP trust fund account in the National Bank of Ethiopia (NBE), which is transferred into MOA's account at NBE. MOA, as the principal implementing institute, is responsible for receiving the donor funds and making direct transfers to regions and other implementing entities in the project. Under this arrangement, each of the specialized financial bodies of the regional and state Bureaus of Agriculture (BOA) and the (county- or district-level) woredas control the release of funds and report on their utilization. MOA and the BOAs have roles in approving and supervising the program budget, as well as the disbursement and accounting functions. Funds are forwarded to the implementing agencies, based on the approved budget and agreed disbursement plan.

Land certification has been found to improve tenure security by reducing the risk of land redistribution and improving transferability of land. SLMP has reached 6.3 million out of 13 million households in the four major regions (Tigray, Amhara, Oromia, and SNNP). SLMP has also been instrumental in providing lessons for the national level land-use planning process through the promotion of participatory local-level land-use planning processes. In addition, vegetation cover in the intervention watersheds has increased by 9% over the baseline, including an increase in the amount of carbon sequestered in the soil.

SLMP-2 has expanded to include activities such as climate-smart agriculture, assisted natural regeneration, and agroforestry to access additional potential carbon

[149] Ararsa and Yigremachew, S., (2014). REDD+ Ethiopia and Oromia Forested Landscape. Presentation for Regional Workshop on Linking Local REDD+ Initiatives to National REDD+ Strategies. FCPF and Indonesia Ministry of Forestry June 2-4, 2014 Jakarta, Indonesia.

[150] Ameha, A., Larsen, H. O. and Mulugeta,L., (2014). Participatory forest management in Ethiopia: learning from pilot projects. Environmental management 53.4: 838-854.

revenues. Given the well-established implementation and institutional arrangement, the monitoring and evaluation components of SLMP, as well as the scale of finance that SLMP mobilizes, there is limited interest by program managers to integrate REDD+ activities (e.g., the OFL Project) into the program.

The Oromia Forested Landscape (OFL) Carbon Finance Project

The OFL Project is the first jurisdictional (subnational) REDD+/ sustainable landscapes program that follows a landscape approach for reducing emissions in the high forest regions of Ethiopia. To support the program, up to USD 50 million has been pledged by Norway, the US, and UK for technical assistance and results-based carbon finance payments for demonstrated reductions in forest carbon losses. The funds are channeled through the World Bank's BioCarbon Fund Initiative for Sustainable Forest Landscapes.

The project is still in its planning phase. The intent is to use OFL funds to strengthen existing activities and to establish a broader jurisdictional program that will eventually integrate a broad range of activities. Without an additional grant (under negotiation), the project faces the challenge of obtaining the upfront finance to fund the prioritized initiatives at a jurisdictional scale covering larger forest areas. Current planning seems to prioritize BioCarbon Fund's initial investment to PFM, while at the same time secure additional finance in the form of investment funding from other sources, including the private sector, to finance agriculture (coffee) and energy sector (cook-stoves, sustainable charcoal) investments.

7.5 Lessons for Other Countries

Based on the progress made so far in the evolving CRGE policy portfolio and its integral REDD+ component, a number of lessons emerge from Ethiopia that can be useful for other countries considering how to finance REDD+ and LED activities. Those lessons are highlighted below.

High-level commitment is essential for LED. Ethiopia is a good example of how such commitment and continuous political support by the President can catalyze change and mobilize donor interest. However, LED requires a substantive transformation of institutions and development plans. The Ethiopian experience shows that it is challenging to establish a multi-sectoral and high level LED framework that is acceptable to donors. The establishment of new institutions and the review, modification, and adoption of policies and process requires time, and there is the risk of losing the political momentum that promoted LED in the first place.

Achieving REDD+ and LED outcomes requires a clear understanding of the relationship between climate and development, an adapted institutional architecture, financing arrangements, and an effective monitoring and evaluation system. The progress made so far in Ethiopia and the evolving institutional setup is a positive step in this direction. However, it is imperative that the political commitment of the national government translates to regional, state/provincial, and local level governments. This is necessary to incentivize ministries and actors to overcome conflicting interests which may run counter to REDD+ outcomes.

Policies must be aligned to address overlapping and conflicting priorities and institutional mandates. Designing a multi-sector integrated landscape/REDD+ program requires different sectoral ministries (agriculture, forest, energy, etc.) at the federal, regional, and local levels of government to work together.

Integrating subnational programs into existing national initiatives and strategies is complex and requires cross-sectoral coordination. REDD+ forms part of Ethiopia's CRGE strategy, which formulates a national climate and growth program. However, cross-sectoral coordination remains challenging. Ethiopia faces several challenges in achieving the level of cross-sectoral coordination required to implement multi-sector jurisdictional REDD+ investments. These challenges include institutional, financial, and capacity issues, as well as a legacy of fragmented, sector-specific interventions.

Striking a balance between a donor-driven process and country ownership is key. Developments with the CRGE Facility thus far indicate that close cooperation between donors and the Ethiopian government has been crucial in building domestic capacity and reinforcing national ownership of the process. For example, donors have been important in developing fiduciary management capacities in Ethiopia. Nevertheless, the limited involvement of relevant ministries in the initial processes could mean diminished commitment from relevant ministries and their staff in understanding the technical details of the CRGE investment if not supported by vigorous capacity building exercises.

A centralized institution is beneficial to direct sustainable landscape activities, as it can provide a single, coordinated body to receive and manage international funds and domestic programs. As a national multi-donor trust fund, the CRGE Facility offers a single, coherent system to consolidate international and domestic finance. It is expected to offer an option whereby donors can engage and determine how best to invest in actions that support REDD+ objectives. In addition, it reinforces the initial steps by the government towards a programmatic budgeting approach that aligns actions with policy objectives and minimizes the transaction costs, fragmentation, and duplication associated with project-based funding. However, owing to the massive amount of capacity building required, it could take time for the facility to be in wide-scale operation. Moreover, not all donors will be able to channel funds through the facility. Yet, the facility remains a promising long-term option for mobilizing and disbursing finance for initiatives intended to achieve REDD+ outcomes. This is particularly significant if the recent applications to the Adaptation Fund (AF) and the Green Climate Fund (GCF) are accepted.

In poorer developing countries such as Ethiopia, upfront financing for programs coupled with private sector engagement is both essential and challenging. With its ambitious climate change policies, the case of Ethiopia is highly laudable and yet, due to a relative lack of strong public institutions, it remains difficult for actors to gain access to private sector finance through national incentive-based programs. Private sector engagement in Ethiopia is still incipient and faces many challenges, including complex regulatory environments and lack of access to finance for investment. One lesson is that the need for upfront capital may limit the effectiveness of results-based payments in some circumstances, and thus other forms of finance may be more effective. This requires careful consideration of a full range of instruments to generate results.

8 Annex 1

Annex 1. Synthesis of REDD+-like programs and funds in Mexico

	Program for the Payment of Environmental Services (PES)	Program for the promotion of local PES mechanisms through matching funds	Biodiversity Endowment Fund	Natural Protected Areas Fund	Monarch Fund
Objective	To provide support to forest owners that voluntarily decide to participate in the program with the aim of incorporating good management practices to promote the conservation and sustainable management of ecosystems and to foster the long-term provision of environmental services.	To enable CONAFOR to combine its financial resources with those from other interested parties to incentivize and strengthen the creation of local PES mechanisms promoting the participation of institutions from the three government levels, private sector organizations and civil society	To provide payments in perpetuity, under a regional and biological corridor approach for areas of high conservation priority	To support the conservation of biodiversity and to ensure the sustainable use of natural resources in Natural Protected Areas	To compensate local communities for the loss of logging concessions due to the expansion of the Monarch Butterfly Biosphere Reserve and to promote conservation activities
Program and policy financing: How are policies financed? (mobilization of funds, matching of sources and program needs)	CONAFOR´s budget + a share of water rights fees	CONAFOR´s resources (up to 50% of annual payments) + resources from interested parties	Interest from the Fund´s capital (made up by contributions from the GEF and CONAFOR)	Interest from the Fund´s capital (made up by contributions from CONANP + GEF/World Bank + multiple other donors)	Phase 1: Interest from the Endowment Fund´s capital (created with contributions from the Packard Foundation, SEMARNAT, and the governments of the states of Mexico and Michoacán) Phase 2: additional payments from CONAFOR´s PES matching funds program

	Program for the Payment of Environmental Services (PES)	Program for the promotion of local PES mechanisms through matching funds	Biodiversity Endowment Fund	Natural Protected Areas Fund	Monarch Fund
Allocation: Decisions on programs and policies to fund What influences government spending?	The selection of eligible areas is made by CONAFOR. Proposals are selected by a Technical Committee.	Areas are proposed by the interested party and selected by the National Technical Committee.	Target regions are selected by CONAFOR and the supported areas are chosen by a Technical Committee.	Priority NPAs are selected by CONANP.	Phase 1: Eligible areas are those within the core area of the Reserve with logging permits or conservation activities. Phase 2: eligible areas are those within the core area of the Reserve with conserved forest area and where conservation activities are carried out that provide environmental services
Disbursement: How are funds channeled to final recipients? (where relevant)	Disbursements are made to beneficiaries through the Mexican Forest Fund.	Disbursements are made through the Mexican Carbon Fund (CONAFOR´s share) and through the same Fund, direct payments or a private trust fund (the share of the interested party).	Disbursements are made through the Biodiversity Endowment Fund, which is a sub-account of the Mexican Forest Fund.	Disbursements are made through the Natural Protected Areas Fund (FMCN).	Disbursements are made by the Monarch Fund + the Mexican Forest Fund (since phase 2).

	Program for the Payment of Environmental Services (PES)	Program for the promotion of local PES mechanisms through matching funds	Biodiversity Endowment Fund	Natural Protected Areas Fund	Monarch Fund
Size	During the period 2007-2012, the program incorporated more than 2.9 million ha, benefiting 5,042 services providers with an amount of USD 472 million.	From 2008 to 2011, CONAFOR signed 56 agreements including with 4 water management operators, 7 municipal governments, 12 state governments, 32 civil society organizations, The National Water Commission, and the Federal Electricity Commission, representing 214,000 ha under PES.	The FPB emerged as part of CONAFOR´s Environmental Services Project, which began with a loan from the World Bank and a grant from the GEF. Its initial capital (USD 10 million) was made up of equal contributions from CONAFOR and the GEF, and was increased with an additional contribution of USD 10 million in 2011.	The Fund started with a capital of USD 16.48 million from the GEF, for 10 natural protected areas (NPAs). In 2001 the Fund received additional support from the GEF/ World Bank for USD 22.5 million conditioned to an equal contribution from other donors. By 2008 the required funds were exceeded. Ten years after starting operations, the area under protection by FANP had expanded from 10 to 29 PAs.	The Fund´s initial capital USD 7.34 million was provided by the David and Lucile Packard Foundation, SEMARNAT and the governments of the states of México and Michoacán. Between 2000 and 2009, the Fund awarded economic incentives to 31 ejidos, indigenous communities and private properties for a total amount of USD 2 million.

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