



CLIMATE INVESTMENT FUNDS

Response to Call for Inputs from the Technology Executive Committee

1. The Climate Investment Funds through a Technology Lens

Developing, demonstrating, deploying and diffusing environmentally sound technologies are activities that form part of the critical response to the climate challenge. As recognized by the United Nations Framework Convention on Climate Change (UNFCCC) and the Technology Executive Committee, the mitigation of and adaptation to climate change therefore depends upon the successful transfer and absorption of these technologies within developing countries.

The Climate Investment Funds (CIF) are a unique set of financing instruments that enable developing countries to jump-start their path towards utilizing technologies and approaches that support climate-smart development. CIF activities focus on facilitating the adoption of technologies and practices to promote energy efficiency policy development, renewable energy production, sustainable transport, climate change adaptation and best-practice forest use and management.

1.1 Overview of the Climate Investment Funds

The CIF's financial architecture is rooted in two trust funds. The Clean Technology Fund (CTF) finances scaled-up demonstration, deployment, and transfer of clean technologies, by piloting investments in countries or regions with potential for significant greenhouse gas (GHG) abatement. The Strategic Climate Fund (SCF) finances three programs that pilot new approaches in target sectors with the potential for scaling up: The Forest Investment Program (FIP), the Pilot Program for Climate Resilience (PPCR), and the Program for Scaling Up Renewable Energy in Low-Income Countries (SREP).

CLEAN TECHNOLOGY FUND (CTF) \$5 Billion	STRATEGIC CLIMATE FUND (SCF) \$2.3 Billion		
Demonstrate, deploy and transfer low emission technologies for low-emissions development	Targeted programs to pilot new approaches to initiate transformation with potential for scaling up climate resilience		
Renewables, energy efficiency, urban transport, commercialization of sustainable energy finance	PILOT PROGRAM FOR CLIMATE RESILIENCE (PPCR) \$1.2 Billion	FOREST INVESTMENT PROGRAM (FIP) \$639 Million	PROGRAM FOR SCALING UP RENEWABLE ENERGY IN LOW INCOME COUNTRIES (SREP) \$410 Million
15 CTF country investment plans and 1 regional plan: Chile, Colombia, Egypt, India, Indonesia, Kazakhstan, Mexico, Morocco, Nigeria, Philippines, South Africa, Thailand, Turkey, Ukraine, Vietnam, Middle East and North Africa	9 PPCR country pilots, 2 regional pilots: Bangladesh, Bolivia, Cambodia, Mozambique, Nepal, Niger, Tajikistan, Yemen, Zambia, Caribbean, S. Pacific	8 FIP pilots: Brazil, Burkina Faso, Democratic Republic of Congo, Ghana, Indonesia, Lao PDR, Mexico, Peru	7 SREP pilots: Ethiopia, Honduras, Kenya, Maldives, Mali, Nepal and Tanzania

Figure 1: Overview of the Climate Investment Funds

The CIF provides developing countries with grants, concessional funds, and risk management instruments that leverage significant financing from the private sector, Multilateral Development Banks (MDBs), and other sources. Five MDBs—the African Development Bank (AfDB), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the Inter-American Development Bank (IDB), and the World Bank Group (WBG)—implement CIF-funded projects and programs.

At the country-level, governments and the MDBs work together with other development partners, including UN agencies and bilateral development agencies. These partnerships help mobilize national-level engagements, build on existing initiatives, and encourage contributions to the achievements of the programmatic objectives of the CIF.

1.2 Governance

The governance and organizational structure of the Clean Technology Fund (CTF) and the Strategic Climate Fund (SCF) includes Trust Fund Committees, a Partnership Forum, an MDB Committee, an Administrative Unit and a Trustee. The Administrative Unit, MDB Committee and Trustee are shared by both Trust Funds. Each Fund has its own Trust Fund Committee, and the SCF designates Sub-Committees to govern each of the targeted programs. Each Trust Fund Committee and Sub-Committee is composed of equal representation by contributor countries and eligible recipient countries.

1.3 Overview of Approach Taken

This report illustrates how the CIF promotes technology transfer and fosters an enabling environment for the diffusion of climate-smart technologies. The CTF and SREP have a clear focus on technology. In the case of the FIP and the PPCR an alternative approach to the analysis is taken as the links between, for example, forest management and technology transfer are not as explicit. Therefore the focus with the FIP and the PPCR will be on investigating how different sectors link to broader technological applications.

Section 2 of the report presents an overview of how the different programs within the CIF are designed to promote technology transfer (refers to point 1 in the Technology Executive Committee input call). Section 3 of the report goes on to identify how investments in CIF countries are supporting technology transfer and the creation of an enabling environment for further technology development (refers to point 2 in the Technology Executive Committee input call). Section 4 will give an overview of the main initiatives undertaken by the CIF in the area of knowledge management and stakeholder engagement that support the technologies and approaches being pioneered by the CIF (refers to point 3 in the Technology Executive Committee input call).

It is important to note that the CIF is a relatively new initiative and so a full assessment of the impacts of investments is not possible at this stage; instead, the report provides comprehensive information on the types of technologies being implemented under the CIF and the extent to which CIF investment is facilitating the creation of an enabling environment for technology transfer in developing countries.

2. Operations of the Climate Investment Funds

This section outlines the various aims and objectives that underpin the different technologies and approaches being pioneered under the CIF. It describes the investment plans and project pipelines, which capture project activities and serve as proxies for technology maps and action plans.

2.1 Clean Technology Fund (CTF)

Background:

Large scale deployment of low-emissions technology is a critical step on the path to climate-friendly development solutions. However, there is a gap in development finance at a level that would enable developing countries to effectively scale-up the deployment of low-emission technologies.

The CTF is a multi-donor trust fund created in 2008 as part of the CIF to provide scaled-up financing for the demonstration, deployment and transfer of low carbon technologies that have significant potential for long-term GHG emissions savings. CTF resources amount to approximately US\$5 billion. Leveraging in the CTF is approximately 1:8 illustrating how the concessional funding is raising additional finance from governments, other development partners and the private sector.

Scope of Activities:

The CTF aims to provide scaled-up financing to contribute to demonstration, deployment and transfer of low-carbon technologies with a significant potential for long-term GHG emissions savings. As country circumstances differ, investment programs are developed on a country-specific basis to achieve nationally-defined objectives.

Investments include, amongst others, low carbon actions addressing the power sector (renewable energy, as well as increased efficiency in generation, transmission and distribution); transportation (modal shifts to public transportation, improved fuel economy and fuel switching); and large scale adoption of energy efficient technologies and other demand management techniques in the industrial, commercial and residential building sectors.

Aims and Objectives:

Building on the scope of activities outlined above, the CTF aims to:

- Provide positive incentives for the demonstration of low carbon development and mitigation of GHG emissions through public and private sector investments.
- Promote scaling-up, deployment, diffusion and transfer of clean technologies by funding low carbon programs and projects that are embedded in national plans and strategies to accelerate their implementation.
- Promoting the realization of environmental and social co-benefits thus demonstrating the potential for low-carbon technologies to contribute to sustainable developments.
- Foster international cooperation on climate change and support agreements on the future climate regime.
- Utilize skills and capabilities of the MDBs to raise and deliver new and additional resources.
- Provide experience and lessons in responding to the challenge of climate change through learning-by-doing.

Overview of Current Pipeline:

To date, the CTF has endorsed 15 country investment plans (Chile, Colombia, Egypt, India, Indonesia, Kazakhstan, Mexico, Morocco, Nigeria, Philippines, South Africa, Thailand, Turkey, Ukraine, Vietnam) and 1 regional plan for Concentrated Solar Power (CSP) across Algeria, Egypt, Jordan, Morocco, and Tunisia. The pipeline below outlines the country-level programs and projects, the technologies, the implementation agencies and the expected co-financing.

Pilot Countries	Project Title	Technology Investments ¹	Multilateral Development Bank	Public/Private	CTF Funding	Co-Financing
Colombia	Sustainable Transport System (SITP)	Transport and Energy Efficiency	IBRD	Public	40.0	1,265.8
	Sustainable Transport System (BOGOTA SITP)		IDB	Public	40.0	960.0
	Energy Efficiency-Private-Public Sector Energy		IDB	Public	16.4	173.7
	Energy Efficiency-Public Sector		IDB	Public	10.0	105.3
	Energy Efficiency		IFC	Public	6.1	64.4
Egypt	Wind Energy Scale Up Program (IPPs)-200MW Wind farm in the Gulf of Suez	Wind and Transport	AfDB	Private	50.0	406.0
	Egypt Urban Transport		IBRD	Public	100.0	765.0
Indonesia	Indonesia Energy Efficiency and RE (Private Sector)- Global Climate Partnership Fund	Energy Efficiency and Geothermal	ADB	Private	50.0	500.0
	Indonesia-Geothermal (Public Sector)		ADB	Public	125.0	505.0
	Geothermal		IFC	Private	25.0	337.5
	Indonesia Geothermal (Private Sector)		ADB	Private	25.0	337.5
	EE/RE through FIs		IFC	Private	50.0	500.00
Kazakhstan	Renewable Energy III-Renewable Energy Development Framework Facility	Hydropower, Wind, Solar Power, District Heating and Energy Efficiency	EBRD	Private	28.4	100.0
	Renewable Energy IV		EBRD	Private	45.0	180.0
	District Heating		IFC	Private	20.0	90.0
	Energy Efficiency		IFC	Private	22.0	80.0
MENA-CSP	Egypt Kom Ombo CSP	Concentrated Solar Power	IBRD	Public	50.0	128.2
	Egypt Kom Ombo CSP		AfDB	Public	50.0	128.2
	Jordan Maan CSP		IFC	Private	36.5	383.9
	Jordan CSP Transmission		IBRD	Public	40.0	301.7
	Tunisia STEG CSP		IBRD	Public	37.0	342.6
	Tunisia STEG CSP		AfDB	Public	25.0	245.8
	Tunisia STEG CSP		IFC	Private	25.0	133.4
	Tunisia ELMED CSP		AfDB	Public	23.3	245.8
	Tunisia ELMED CSP		IFC	Private	23.3	133.4
	Tunisia ELMED Transmission		IBRD	Public	20.0	73.1
	Tunisia CSP Transmission		AfDB	Public	20.0	73.1

¹ Not exhaustive. Please see individual country Investment Plans for further details.

	Algeria Meghair CSP		AfDB	Public	38.7	195.3
	Algeria Meghair CSP		IBRD	Public	32.7	165.0
	Algeria Naama CSP		AfDB	Public	32.7	165.0
	Algeria Naama CSP		IFC	Private	16.3	89.5
	Algeria Hassi R'Mel CSP		IBRD	Public	15.0	-
	Algeria Hassi R'Mel CSP		AfDB	Public	15.0	168.4
	Algeria Hassi R'Mel CSP		IFC	Private	15.0	91.4
Mexico	Public Sector Energy Efficiency	Wind, Hydropower and Energy Efficiency	IDB	Public	51.6	231.5
	Renewable Energy		IFC	Private	14.4	144.0
	Energy Efficiency		IFC	Private	20.0	200.0
Morocco	Renewable Energy	Wind	IBRD	Public	25.0	174.0
Philippines	Philippines E-Trikes	Solar Power, Energy Efficiency and Transport	ADB	Public	101.0	400.0
	Philippines Energy Efficiency		ADB	Public	24.0	400.0
	Philippines RE/EE		IBRD	Public	45.0	722.5
	Philippines BRT		IBRD	Public	45.0	722.5
	Philippines BRT		IBRD	Public	25.0	150.0
South Africa	RE - SWH	Solar Water Heaters	AfDB	Private	25.0	220.3
	RE - SWH		IFC	Private	25.0	220.3
Turkey	Turkey Transmission -RE/EE Projects	Renewable Energy and Energy Efficiency	IBRD	Public	50.0	400.0
	Private RE -RE/EE Projects		IFC	Private	28.3	118.9
Ukraine	Energy Efficiency	Wind, Hydropower, Biomass, Smart Grids and Energy Efficiency	EBRD	Private	50.00	200.0
	Zero Emissions Power from the Gas Network		EBRD	Private	50.0	250.0
	Ukraine EE		IBRD	Public	50.0	430.0
	Ukraine HRSG		IBRD	Public	50.0	400.0
	Ukraine Transmission		IBRD	Public	50.0	300.0
	Energy Efficiency		IFC	Private	25.0	115.0
	Renewable Energy Financing Facility		IFC	Private	25.0	65.0
Vietnam	Vietnam Transport (HCMC)	Transport, Hydropower, Wind, Biomass and Energy Efficiency	ADB	Public	50.0	1,000.0
	Vietnam EE - Industrial Energy Efficiency		ADB	Public	50.0	215.0
	Vietnam Transport (Ha Noi)		ADB	Public	50.0	1,100.0
	Renewable Energy		IFC	Private	40.0	945.0

Table 2: CTF Pipeline²

² Based on June 2012 pipeline that is available online at: http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/CTF_PIPELINE_QUARTERLY_ACCTG_JUNE2012_C_ONLINE.pdf (these projects still need to be approved)

2.2 Program on Scaling-Up Renewable Energy in Low-Income Countries (SREP)

Background:

Low-income countries face a dual challenge in increasing the availability of electricity and other commercial fuels needed for economic development and increasing access to the 1.5 billion people who have no access to electricity and are completely dependent on biomass fuels for energy services.

The need to ramp up modern energy use in low income countries coupled with the availability of renewable energy resources provide a fertile opportunity to help countries secure a sustainable energy base. SREP was established to scale-up the deployment of renewable energy solutions, expand renewable energy solutions and develop renewable energy markets in the world's poorest countries. SREP aims to pilot and demonstrate the economic, social and environmental benefits available for the deployment of renewable energy technology in low-income countries vulnerable to energy insecurity. US\$410 million have been pledged towards SREP as of June 2012.

Scope of Activities:

SREP provides financing for renewable energy generation and use of energy using proven "new" renewable technologies. In SREP, new renewable energy technologies include solar, wind, geothermal, bio-energy and hydropower (normally not exceeding 10 MW per facility). SREP also supports complementary technical assistance. This could include support for planning and pre-investment studies, policy development, legal and regulatory reforms, business development and capacity building as an essential and complementary part of the renewable energy investment operations. SREP investment plans are designed to support a country level programmatic approach to scaling-up renewable energy. Emphasis is placed on the long-term transformative outcomes and successful market transformative outcomes rather than individual investments or activities.

Aims and Objectives:

Building on the scope of activities outlined above, SREP aims to:

- Be country-led and assist countries in developing or strengthening policies for renewable energy.
- Take a programmatic and outcome-focused approach for investing in renewable energy. SREP funded programs should consist of both renewable energy and technical assistance, together with support for policy changes.
- Give priority to renewable energy investments that create 'value added' in local economies.
- Commit sufficient funding and leverage significant additional financing from MDBs, bilateral agencies/banks and from other public and private sources to achieve a large scale impact.
- Target the entire value chain, by utilizing the transformational potential of the private sector and civil society groups (including financial intermediaries) to achieve economic development and sustainability.
- Proactively seek to build on synergies with other programs in the field of renewable energy, including those of the MDBs, GEF and other development partners.

Overview of Current Pipeline:

SREP has selected 7 pilot countries (Ethiopia, Honduras, Kenya, Mali, Nepal, Maldives and Tanzania) to receive scaled-up financing for renewable energy investments that will help countries transition to a new pattern of energy generation and use. Additional funding was made available for the preparation of investment plans in 5 additional countries: Armenia, Liberia, Mongolia, Pacific Regional Program and Yemen. The pipeline below outlines the country-level programs and projects, the technologies, the implementation agencies and the expected co-financing.

Pilot Countries	Project Title	Technology Investments ³	Multilateral Development Bank	Public/Private	SREP Funding (net of Project Preparation Grants)	Co-Financing
Ethiopia	Aluto Langano Geothermal Project	Geothermal and Wind	IBRD	Private	23.6	207.6
	Aluto Langano Geothermal Project		AFDB	Public	-	-
	Geothermal Sector Strategy		IFC	Private	1.5	-
	Assela Wind Farm Project		AFDB	Public	18.3	230
	Clean Energy SMEs Capacity Building and Investment Facility		IFC	Private	3.6	8
Honduras	Strengthening the RE Policy and Regulatory Framework (FOMPIER)	Electricity Infrastructure and Cookstoves	IDB	Public	0.9	0.7
	Grid-Connected RE Development Support(ADERC)-Transmission		IDB	Public	4	108.7
	Grid-Connected RE Development Support(ADERC)-Generation		IDB	Private	6.2	108.7
	Grid-Connected RE Development Support (ADERC)		IFC	Private	6.2	-
	Sustainable Rural Energization (ERUS)		IBRD	Public	9.8	12.3
	Sustainable Rural Energization(ERUS)-cook stoves(includes operational expenses for investment implementation for all component)		IDB	Private	2	12.3
Kenya	Menengai Geothermal Project-200 MW Geothermal-Phase A-Resources and Infrastructure Development and Mobilization of Private Sector	Geothermal, Wind and Solar Hybrid System and Electrical Infrastructure	AFDB	Public	-	478.0
	Menengai Geothermal Project		IBRD	Public	15	-
	Hybrid Mini-Grid System		IBRD	Public	10	58
Mali	Solar PV IPP	Solar Photovoltaic Energy, Rural Electrification Hybrid Systems (Solar, Biofuels) and Mini and Micro Hydro Power Plants	AFDB	Private	11.1	48
	Rural Electrification Hybrid Systems		IBRD	Public	15	40.5
	Development of Micro/Mini Hydroelectricity for Rural Electrification in Mali (PDM-Hydro)		AFDB	Public	8.8	126.5
	SREP-Mali Program Strategic Coordination		AFDB	Public	1.5	1.5
Nepal	Small Hydropower Development	Small Hydropower, Mini/Micro Hydropower, Solar Photovoltaic Energy and Biogas	IFC	Private	10	46.7
	Small Hydropower Development		ADB	Private	10	46.7
	Mini and Micro Initiatives: Off Grid Electricity		ADB	Public	11.4	131.4
	Waste to Energy Project		IBRD	Public	8	126.4

Table 2: SREP Pipeline⁴

³ Not exhaustive. Please see individual country Investment Plans for further details.

⁴ Based on June 2012 pipeline that is available online at: http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/SREP_PIPELINE_QUARTERLY_ACCTG_JUNE2012_ONLINE.pdf (these projects still need to be approved with the exception of the Kenya Geothermal 200 MW Project)

2.3 The Pilot Program for Climate Resilience (PPCR)

Background:

Mainstreaming climate risk and resilience into core development planning is of paramount importance to developing countries as climate change poses an enormous threat to the development gains of the past couple decades and could hinder future sustainable development if left unchecked. The PPCR has around US\$1.2 billion to develop comprehensive strategies that address challenges to key economic sectors exposed to climate risks.

Scope of Activities:

There is a wide range of activities being funded by the PPCR. The interventions target sectoral challenges and so it is possible to group the technologies according to sectors. Table 3 below is a comprehensive, though not exhaustive, enumeration of the technology-based interventions which are being funded by the PPCR.

Many adaptive measures rely on technological inputs or proven technologies in the particular sectors (see table 3 below). PPCR resources are being used to apply these technologies in the context of climate change adaptation in areas where financial constraints and investment priorities previously precluded their use or scaling-up

Aims and Objectives:

The overarching objective of the PPCR is to finance adaptation activities in those countries most vulnerable to climate change impacts.

Specifically, the PPCR aims to:

- Demonstrate ways to integrate climate change adaptation into core development planning via a country led programming process.
- Compliment existing adaptation strategies.
- Leverage additional financing for climate resilience.
- Generate lessons and experiences in designing scaled up adaptation financing.
- Build capacities across sectors to cope with challenges associated with climate vulnerability and change.

Overview of Current Pipeline:

To date, the PPCR is working in 9 countries and 2 regions (Bangladesh, Bolivia, Cambodia, Mozambique, Nepal, Niger, Tajikistan, Yemen, Zambia, Caribbean and the Pacific) and has 50 projects in the pipeline with a total projected value of around US\$733 million. Each project utilizes PPCR resources to respond to a particular sectoral challenge, building resilience to climate change hazards through a myriad of adaptive measures. Figure 2 below depicts the relative sums of money being invested in applying technologies in the various climate affected sectors in the PPCR pilot countries.

Sectoral Focus	Development Challenge	Technological Application	Development Impact	Countries
Water Resources Management	-salt water intrusion -flooding -water stress -shortages -quality/sanitation	-desalinization plants -sluice gates -pumps -water tanks -drip irrigation technology -bore holes, -dams -treatment plants	-enhanced water security -water use efficiency -sanitation and public health -protection of lives and livelihoods	Bangladesh Mozambique Niger Tajikistan Bolivia Cambodia
Infrastructure	-vulnerable infrastructure (buildings and roads) -limited access to markets and public services post disaster event	-ottaseals, geocells, etc. to seal roads -paving and raising roads -groynes and beach protection and replenishment -housing design -culvert and drainage	-access to markets and public services (health and education) in bad weather -savings from avoided retrofitting -protection of life and livelihoods	Zambia Mozambique Samoa
Agriculture and Landscape Management	-infertile soil -low productivity -food insecurity -erosion	-mangrove restoration -adaptive crop varieties -drip irrigation and irrigation zoning -mulching -rehabilitation -nursery development	-sustainable production -food security -livelihoods -poverty reduction	Cambodia Nepal Tajikistan Mozambique Grenada Bangladesh
Coastal Zone Management	-beach erosion -destructive storm surges -fisheries decline -salt water intrusion	-mangrove reforestation -sluice gates -beach replenishment -regulators -drainage	-secure beaches -protection to coastal life and property -water security	Samoa Bangladesh
Urban Development	-vulnerability to flood -sanitation issues	-waste treatment -drainage technology -sanitary landfills	-sanitation and health	Bangladesh Cambodia
Climate and Information Systems	-misinformed planning -data collection -delayed response to hazards	-hydromet stations -GIS -climate modelling -clearing house mechanism	-evidence based decision making -improved disaster preparedness	Cambodia Mozambique Nepal Jamaica Yemen Caribbean Regional track Niger
Disaster Risk Management	-economic and physical vulnerability to climate change	-vulnerability mapping tools -GIS and shoreline mapping assessments	-minimize economic and physical risks from climate hazards	Dominica South Pacific Regional

Table 3: Scope of Technology Activities in the PPCR

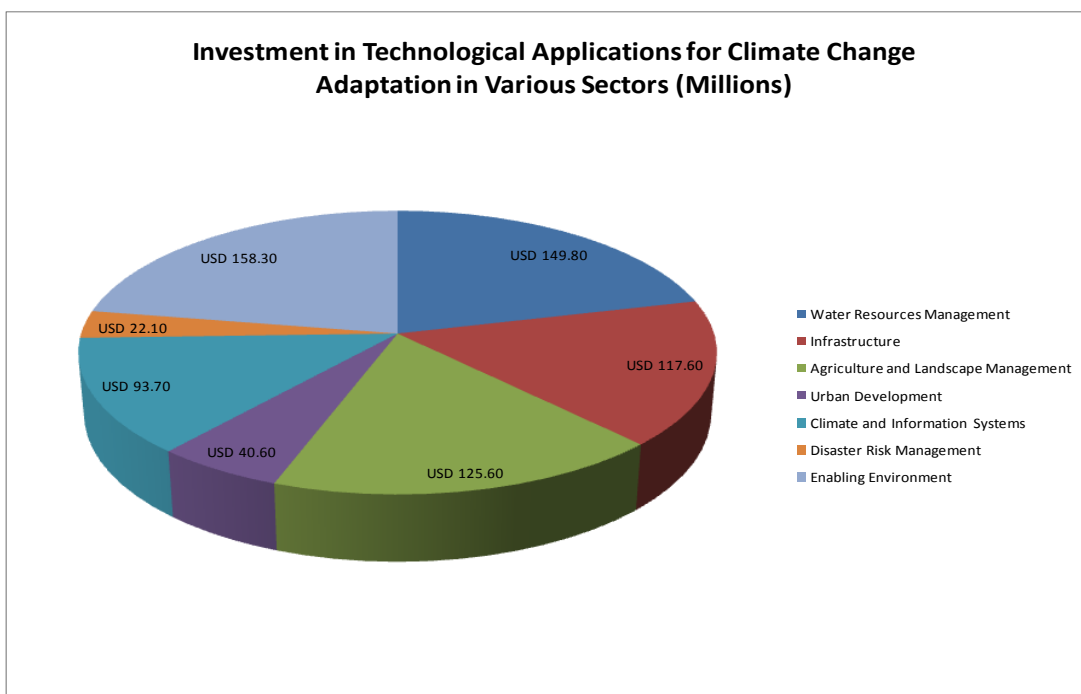


Figure 2 : Comparative Levels of PPCR Investments Across Key Sectors⁵

2.4 Forest Investment Program (FIP)

Background:

Land use and land use change account for the second largest source of GHG emissions, and as such are second leading cause of global warming. Although there are divergent opinions as to how deforestation and forest degradation should be included in any future climate change regime, there is an emerging consensus that this issue must be addressed effectively. Several reports indicate that tackling forest and tree loss is a critical activity in achieving stabilization of greenhouse gas concentrations in the atmosphere at a level that avoids the worst effects of climate change. FIP resources total approximately US\$639 million dollars and 8 countries have been selected to pilot approaches to address deforestation and forest degradation.

Scope of Activities:

Similar to the PPCR, the activities under the FIP are not necessarily technology oriented but in meeting the FIP objectives, technology remains an important factor. Table 4 below gives a comprehensive, though not exhaustive, enumeration of the various technological applications that are being promoted in FIP. It is important to note here that the following analysis is based on the current pipeline representing only four (Brazil, Democratic Republic of Congo, Lao PDR, Mexico) of the 8 FIP pilot countries. The remaining four are yet to complete programming their activities and as such are not included here.

⁵ Sums are based on what is currently in the PPCR pipeline, and may be subject to change as the pipeline is updated. As such the numbers should be taken as relative indicative sums and not conclusive estimates.

Aims and Objectives:

The main purpose of the FIP is to support developing countries' efforts in reducing emissions from deforestation and forest degradation and the enhancement of carbon stocks and conservation co-benefits. The FIP provides up-front bridge financing for readiness reforms and public and private investments identified through national REDD+ readiness strategies.

Specifically, the FIP aims to:

- Initiate and facilitate steps towards transformational change in developing countries forest related policies and practices.
- Serve as a vehicle to finance investments and related capacity building necessary for the implementation of policies and measures that emerge from inclusive multi-stakeholder REDD+ planning processes at the national level.
- Strengthen cross-sectoral ownership to scale up implementation of REDD+ strategies at the national and local levels.
- Addressing key direct and underlying drivers of deforestation and forest degradation
- Support change of a nature and scope necessary to help significantly shift national forest and land use development path.
- Link the sustainable management of forests and low carbon development.
- Facilitate scaled-up private investment in alternative livelihoods for forest dependent communities that over time generate their own value.
- Reinforce ongoing efforts towards conservation and sustainable use of forests.
- Improve forest law enforcement and governance, including forest laws and policy, land tenure administration, monitoring and verification capability, and transparency and accountability.

Overview of Current Pipeline:

There are currently 12 projects in the pipeline with a total projected value of around US\$178 million. Each project utilizes FIP resources to address the drivers of deforestation and forest degradation with a view to conserve forests and the ecosystem services provided by them. The drivers of deforestation operate across several sectors which affect land use and land use change and ultimately the extent of forest cover in any given country (see table 4 below). FIP funds are being used to promote technologies in various sectors to address the drivers of deforestation and forest degradation.

Figure 3 below depicts the relative sums of money being invested in applying technologies in the various sectors relevant to forest conservation as promoted in the FIP. It also shows the resources apportioned to creating an enabling environment for the use of technology and strategies to reduce deforestation and forest degradation.

Sectoral Focus	Challenge	Technological Application	Impact
Forestry (timber production) and Non-timber	-deforestation -forest degradation -biodiversity loss	-reduced impact logging -seed tree protection -silviculture	-carbon mitigation -Increase in forest carbon stocks -livelihoods and income generation -biodiversity and habitat conservation
Sustainable Agriculture and Agro-Forestry	-deforestation -food security	-mixed farming (trees and crops) -no tillage practices -soil management	-reduced pressures on forest -GHG (incl. methane) mitigation -livelihoods and food security
Energy (incl. charcoal)	-inefficient use of energy -high consumption of fuelwood (deforestation)	-energy efficient stoves -enhanced charcoal production -energy alternatives	-reduced deforestation and forest degradation -energy security benefits
Forest Monitoring	-lack of information (eg forest inventory, incl. species and carbon stocks) -tracking results	-GIS -Remote sensing -standardized inventories -carbon stock assessments	-evidenced based decision making -results tracking (need to be consistent in terms of use of technology)

Table 4: Scope of Technology Activities in the FIP

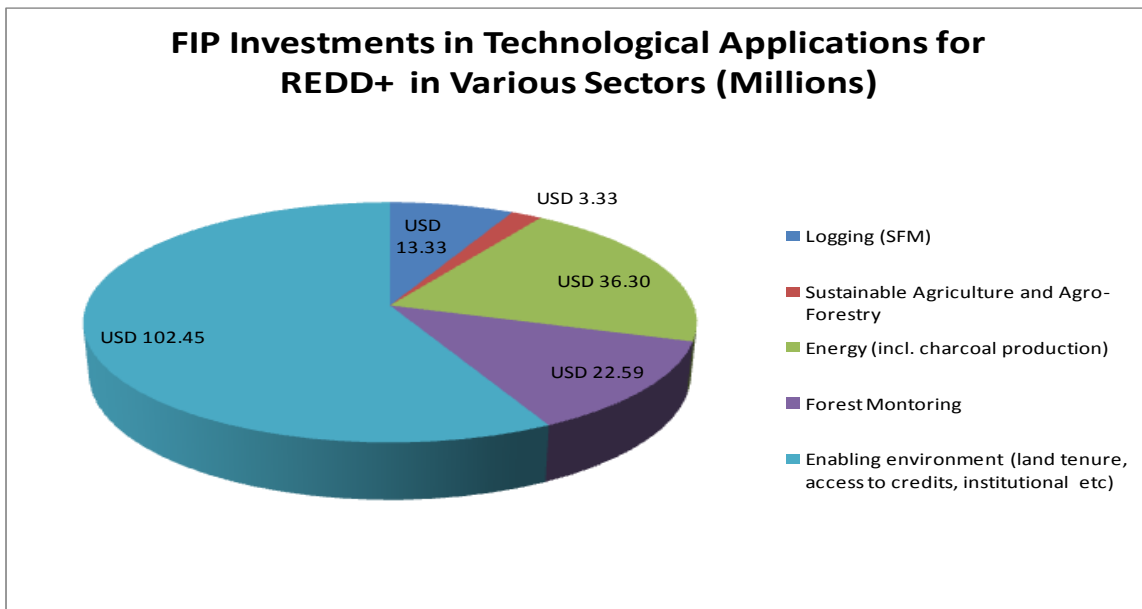


Figure 3: Comparative Levels of PPCR Investments Across Key Sectors⁶

⁶ Sums are based on what is currently in the PPCR pipeline, and may be subject to change as the pipeline is updated. As such the numbers should be taken as relative indicative sums and not conclusive estimates.

3. Technology Transfer and the Enabling Environment

The following section provides four case studies of national investment plans, one for each CIF program. This section illustrates how technology transfer considerations are integrated into investments in the pilot countries. In addition, this section will address how the investments by the CIF are aimed at creating an enabling environment to address barriers to technology development and transfer in the pilot countries. As mentioned in Section 1.3, this analysis will vary according to the different funds being discussed.

3.1 The Clean Technology Fund: The Case of South Africa

Overview:

Since the end of apartheid in 1994, South Africa has been transformed into a stable and robust economy, with a four percent average annual economic growth rate over the past 10 years. This strong economic performance has resulted in a 60 % increase in demand for electricity by industry and households since 1994, with coal accounting for 75% of total energy consumption.

The South African CTF investment plan is a “business plan” jointly shared by the Government of South Africa, the IBRD, the AfDB and the IFC. It supports the low-carbon objectives and priorities of key national energy and development strategies.

Description of Technologies:

The CTF investment plan for South Africa is designed to use \$500 million in CTF co-financing to mobilize investments of more than \$1.8 billion from bilateral and multilateral financiers as well as private sector financing. The plan identifies four priority investment areas:

- Convert half a million households from electric to solar water heaters (SWH) over the next five years, by providing support to municipalities and the private sector.
- A 100 MW-capacity Concentrated Solar Power (CSP) plant in Uppington. This is the first-ever commercial scale CSP plant in Sub-Saharan Africa which is envisaged to be built in collaboration with Eskom (South Africa’s electricity public utility).
- A Wind Energy Facility (1, 100 MW wind farm), in the Western Cape Province, in collaboration with Eskom. This will be the first utility-scale wind power plant.
- Increase energy efficiency investments through expansion of bank lending to commercial and industrial sectors through lines of credit to commercial banks, contingent financing to foster energy service companies (ESCOs), and financial incentives or risk products to market lenders.

Technology Transfer and the Enabling Environment:

There are various stages to the technology transfer process and one of the key elements is the assessment of a country’s technological needs. This process occurs in various stages under the CTF. When South Africa expressed interest in accessing CTF financing, the MDBs concerned conducted a joint mission, involving other relevant development partners, to discuss with the government, private industry and other stakeholders how the CTF could help finance scaled-up low carbon activities. This process is a key step in establishing recommendations on appropriate interventions, technologies, financing and implementation mechanisms to encourage low-carbon development. The outcome of this process was the Investment Plan for South Africa, which lays the overall foundation for the technology

process as it assesses country needs, identifies financing streams (including private sector investments) and lowers the risk and cost of “new” technologies.

In addition to a thorough technology needs assessment, the CTF investment is enabling South Africa to accelerate the development pathway of certain technologies such as CSP. CSP is the renewable energy source with the largest potential in South Africa. Depending on how it is configured, grid-connected solar thermal power can not only provide large volumes of electricity, but it can also produce firm generation capacity, comparable to what is currently provided by coal fired power plants. However, in addition to being more costly, the initial CSP plants will have higher risk than any coal-fired power plant. The CTF will support the development of the CSP project by financing a portion of the first project in South Africa. Overall this, amongst other projects in the South Africa Investment Plan, lays the foundation for an enabling environment for future technology development in the Southern African region.

3.2 Program on Scaling-Up Renewable Energy in Low-Income Countries: The Case of Nepal

Overview:

Nepal is a low-income country grappling with an energy crisis. The 706 MW total installed capacity, supplemented by purchases from India, falls short of the energy needs of the country. Forced load shedding frequently occurs in the country and only about 56% of the population has access to electricity, despite the vast hydropower potential.

The Nepal SREP Investment Plan (SREP-IP) is designed to utilize US\$40 million in grant funding to implement a structured program to scale-up renewable energy in the country. The SREP-IP was prepared under the leadership of the Government of Nepal (GoN) with assistance from the ADB, the IFC and the World Bank. The SREP-IP complements the GoN’s program to increase the access to energy services from alternative energy sources.

Description of Technology:

SREP investments will enable the development of on-grid and off-grid small hydro power and off-grid min/micro energy initiatives, with the latter focused on hydropower, solar photovoltaics and biogas for cooking. It is estimated that these initiatives would enable:

- The rapid takeoff of small hydro power projects, resulting in roughly 50 MW of additional capacity through private sector participation.
- The mainstreaming of commercial lending through financial institutions for small hydropower projects and other renewable energy projects where applicable.
- 250 000 households to gain energy access through 30 MW of micro/mini hydropower.
- 500 000 households to obtain energy services through solar home systems totaling 10 MWp capacity.
- 160 000 households to obtain access to clean cooking fuels through biogas plants.
- The rationalisation of fund delivery for mini and micro-energy projects through a single channel (the Renewable Energy Fund).
- The transition of the Alternative Energy Promotion Centre into Alternative Energy Promotion Board, which will serve as a one-step shop for renewable energy development in the country for projects up to 10 MW in capacity.

Technology Transfer and the Enabling Environment:

One of the prerequisites of creating an enabling environment for technology transfer is that circumstances of the host (or technology recipient) country are integrated into any technology-related plans and strategies. In the case of the

SREP-IP in Nepal, one of the key approaches is that the SREP support is integrated into the Government of Nepal's Renewable Energy Road Map. One of the main goals of working with the government is to strengthen the existing institutions and assist in policy development. For example, the SREP technical assistance component is supporting the restructuring of the Alternative Energy Promotion Centre to create the new Alternative Energy Promotion Board with a new mandate of developing renewable energy technologies of up to 10 MW. The Alternative Energy Promotion Board will maintain a high profile Central Renewable Energy Fund and the SREP funds will be channeled through it.

3.3 Pilot Program for Climate Resilience: The Case of Mozambique

Overview:

Mozambique is extremely vulnerable to the adverse effects of climate change as a result of frequent occurrence of droughts, floods, and cyclones. Over 58% of the country stand to be affected by climate change hazards. The PPCR for Mozambique makes several strategic investments which respond to the country's adaptation needs. One notable investment that demonstrates the relevance of enabling environments for technology transfer in adaptation programs is the investment in Mozambique's sustainable land and water management sector (SLWM). This investment targets issues of food security and poverty reduction.

Description of Technology:

PPCR resources in Mozambique's sustainable land and water management sector will enable the adoption of sustainable water use technologies in the agriculture and food production sectors, and enable the up-take of land management technologies and farming practices that improve soil quality and land productivity. Specifically, PPCR resources will finance:

- Wide scale diffusion of community irrigation infrastructure.
- Construction of water troughs, boreholes, and small earth dams for water storage.
- Promotion of soil conservation practices.
- Reforestation and land rehabilitation technologies.
- Enhanced charcoal production technologies.
- More energy efficient cooking stoves to reduce fuel wood consumption.

Technology Transfer and the Enabling Environment:

Successful technology application in the context of climate change adaptation, most necessary in the poorest and under-resourced countries, requires complimentary capacity building activities to stimulate institutional memory and transformational change in managing climate change challenges. Mozambique is ensuring that there is both institutional and technical capacity within government agencies and local communities to support the use of these technologies. Specifically, the investments in SLWM technologies is being complimented by training workshops for community representatives in both water management and sustainable forest management practices. 12 communities are targeted for training completion by the year 2016. In addition to investments in capacity building, Mozambique is creating an enabling environment for technology adoption by providing dedicated credit lines for financing capital investments in sustainable land use technologies (such as water harvesting infrastructure and agroforestry inputs etc). The dedicated credit lines will also support small enterprise ventures in value-added agricultural and forest production so as to increase earning potential for the rural poor.

The provision of capacity building exercises and financial support services will allow small farmers to shift out of conventional practices and forms of land uses that degrade forest landscapes and exacerbate food insecurity issues.

3.4 Forest Investment Program: The Case of Brazil

Overview:

The focus of the Brazil FIP investment plan is the Cerrado biome. The Cerrado is an important 200 million hectares expanse of savannah and woodlands known for its high levels of biodiversity and conservation value, and in more recent decades for its extremely high levels of agricultural productivity. Environmental protection laws in the country require that agricultural lands are subject to environmental regulation, and that farmers use best practices and appropriate technologies to ensure soil conservation and sustainable production. Due to the high estimates of carbon stock in Cerrado soils, the livelihoods opportunities generated in the biome, and the value of the Cerrado for reducing pressure on the Amazon forests, it is imperative that best practices which allow for the maintenance of its ecological integrity be adopted wholesale by land users in the biome. However, the costs associated with regulation can be preclusive to small farmers.

Description of Technology:

FIP resources in Brazil will help reduce the financial barriers that limit small farmers from adopting sustainable land and forest technologies. Specifically, the FIP will enable:

- The expansion of no-tillage regimes which will decrease levels of emissions from soil disturbances and improve soil quality.
- The rehabilitation of degraded lands through reforestation.
- The expansion of agro-forestry regimes and integrated landscape management.
- The adoption of biotechnologies that convert animal waste from livestock to biogas for energy.
- The adoption of composting technologies for solid organic material to reduce the amount of methane emissions.

Technology Transfer and Enabling Environment:

FIP funding is supporting the implementation of a federal program to promote environmental compliance. The program implementation, shared by federal, state, and municipal governments offers an opportunity for landowners and squatters to regularize the legal status of their properties in the event of having deforested land over and above the size of areas permitted by Law (Legal Reserves, or of failing to maintain Areas of Permanent Preservation (APPs). Smallholders, land reform settlers, family farmers and traditional peoples/communities are special beneficiaries of the program, and receive, free of charge, government support to restore the degraded APPs and RLs. They also receive technical assistance, environmental education, seeds/seedlings and appropriate training. The support provided with FIP resources helps farmers overcome the financial and technical capacity constraints that would have otherwise precluded their full participation in the environmental compliance program.

In a similar vein, the Government has embarked on a more encompassing mission to encourage further investments in sustainable land management by the private sector. US\$16.6 millions of FIP funding is being used to create a National Forest Information System that will collect and collate data pertaining to the value, quantity and quality of forest (and land) resources to better allow would be investors to gauge potential rates of return on investments and offer some

sense of surety in terms of evidence-based decision making in forest management. Information will also be collected that would inform risk assessment and help investors, small farmers, and public entities to quantify the risks from forest fires and other natural hazards that might undermine the value of land resources. The National Forest Information System will remove the information barriers that often deter investors from putting private sectors resources into sustainable land management projects. Giving the increasing global concerns around food security, land availability and forest conservation, creating the right investment environment for capital and equity injections into projects that try to balance the demands on land resources is essential.

4. Actions Undertaken in Knowledge Management and Stakeholder Engagement to Promote Technology Development, Transfer, and Deployment

Regular stakeholder engagement, south-south learning, and knowledge management are all key for generating knowledge around technology transfer and the conditions needed to foster enabling environments for technology application in different country contexts. For this reason, the CIF facilitates the regular meetings of pilot countries and stakeholders and has designed targeted initiatives for them to share their experiences and lessons learned. These meetings are not limited to climate change and technology discourse, but span a full range of issues such as inclusive and effective project design and implementation, sustainable financing, results monitoring and communications. These activities all fall under the CIF knowledge management platform and have effectively helped reduce the barriers and impediments to capturing, storing and sharing of knowledge around best-practice in creating enabling environments to address the barriers to technology development.

4.1 The Global Support Program

The Global Support Program (GSP) was established to provide CIF pilot countries with the appropriate platforms to communicate, share lessons, and access knowledge and expertise. To those ends, the GSP plans, organizes and manages frequent pilot country meetings and coordinates the development and management of web-based tools, amongst other activities. The following are examples of web-based tools and products developed by the GSP: a searchable and interactive repository of tools and resources for low carbon and climate resilient development; a sourcebook for monitoring and evaluating CIF investments; a series of webinars for internal and external audiences; and an online training course on the low carbon investment planning process.

4.2 Pilot-Country Meetings

Every year, the people who work on CIF-financed operations in CIF pilot countries gather in a series of open and collaborative Pilot Country Meetings (PCMs). In these meetings, representatives of CIF pilot country governments are joined by their counterparts from the MDBs, donor country governments, and other stakeholders to share knowledge, learn from experience in CIF implementation, and foster mutual trust and accountability. CTF pilot countries meet annually, SCF pilot countries meet semi-annually, and all CIF pilot countries meet once a year to address CIF issues as a whole. A total of 8 PCMs were organized between July 2010 and July 2011.

The PCMs have already demonstrated added value. Participants have begun to establish cross-country relationships, creating a growing global network of practitioners that can be relied upon for knowledge and support. By discussing common issues, pilot country representatives have also found areas of common understanding, and have transmitted their views on how to improve the CIF to the CIF's governing committees.

In many instances the PCMs act as an opportunity to showcase technologies, and discuss their applicability and their limitations in different pilot countries. At this year's FIP PCM (April, 2012) one presentation looked at an innovative model for integrating landscape approaches in a Payment for Ecosystem Services scheme to transform agricultural practices in a defined geographic area. Another presentation looked at a business operation model that integrated sustainable technologies for clean energy production with land rehabilitation, illustrating how timber plantations can provide a cleaner source of energy for pig iron production.

4.3 Partnership Forum

As governments and institutions undertook to design the CIF in 2007-2008, it was recognized that if the CIF is to contribute to an effective global solution to climate change, it would be crucial for its lessons and experiences to be shared in an inclusive, transparent and strategic manner. With that purpose in mind, it was agreed that a Partnership Forum would serve as regular venue at which relevant stakeholders could share CIF-related ideas and experiences and engage in dialogue on the CIF's strategic directions, results and impacts. The stakeholders who convene together at the Forum include: representatives of donor and eligible recipient countries, MDBs, UN and UN agencies, the Global Environment Facility (GEF), UNFCCC, the Adaptation Fund, bilateral development agencies, NGOs, Indigenous Peoples, private sector entities, and scientific and technical experts.

The Forum also showcases particular projects from the participating pilot countries. This is an opportunity for parties to the UNFCCC, and climate finance partners among others, to see what technologies and institutional mechanisms are being applied at the country and even sectoral level to address climate change mitigation and adaptation. These exchanges are captured on video and in summary texts to share with partners who are unable to attend the Forum.

4.4 Learning Products

Both the FIP and PPCR have been developing a "learning product" over the last year, which consolidates the experiences of the pilot countries in the respective programs for knowledge-sharing purposes. Like the PCM mentioned above, the learning products provide an opportunity for countries to exchange experiences on implementing their strategic programs and it simultaneously captures information for sharing with the global community. The PPCR learning product, for instance, takes the form of online and web-based events and video-conferences which allow pilot countries to dialogue in "face-to-face" meetings throughout the year. One such web-based event for the PPCR focused on the institutions and technologies relevant to early warning systems in Bolivia and Niger. It was an innovative means in which to facilitate south-south co-operation between these countries in a cost-effective manner using a popular and convenient mode of communication. Summaries and images (including some videos) of the "learning product" can be found on the CIF website under the "Knowledge and Learning" tab.

4.5 The Dedicated Grant Mechanism

The Dedicated Grant Mechanism (DGM) is an important CIF initiative specific to the FIP. This is a direct intervention that aims to remove the financial barriers which ordinarily restrict the full and effective participation of indigenous peoples and local communities in forest governance, sustainable forest enterprise and livelihood issues. In addition, the DGM will enable the FIP projects to incorporate local needs and visions around appropriate technologies and approaches.