

carbon finance  
for sustainable development

2011 ANNUAL REPORT

# mission statement

Our mission is to support the global carbon market through catalytic initiatives that unlock private capital to mitigate climate change while supporting sustainable development and assisting the poorest communities in developing nations.

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The report covers the carbon funds, facilities and financial instruments managed by the World Bank during the period from January 1, 2011 through December 31, 2011. An online version of this report is available at [www.carbonfinance.org/publications](http://www.carbonfinance.org/publications).

Note: All dollar amounts are in U.S. dollars (\$) unless otherwise indicated. The U.S. dollar/euro exchange rate used in this report is 1.30. All greenhouse gas emission reductions are reported in metric tonnes (equivalent to 1,000 kilograms) or carbon dioxide equivalent (tCO<sub>2</sub>e).

This report is provided for informational purposes only. The carbon funds, facilities and financial instruments reported on are not legal partnerships. No warranties or representations are made as to the accuracy, reliability, or completeness of any information herein.





Carbon Finance  
AT THE WORLD BANK

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## Acronyms

AAU	Assigned Amount Unit
BioCF	BioCarbon Fund
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
Ci-Dev	Carbon Initiative for Development
CFU	Carbon Finance Unit (World Bank)
CPF	Carbon Partnership Facility
ER	Emission Reduction
ERPA	Emission Reductions Purchase Agreement
EU ETS	European Union Emissions Trading Scheme
EUA	European Union Allowance
FCPF	Forest Carbon Partnership Facility
GHG	Greenhouse Gas
GIS	Green Investment Scheme
ha	Hectare
JI	Joint Implementation
LDC	Least Developed Country
LULUCF	Land Use, Land-Use Change, and Forestry
MW	Megawatt
MRV	Measurement, reporting and verification
NAMA	Nationally Appropriate Mitigation Action
NGO	Non-Governmental Organization
PoA	Programme of Activities
PMR	Partnership for Market Readiness
REDD	Reducing Emissions from Deforestation and Forest Degradation
REDD+	REDD plus conservation, sustainable management of forests, and enhancement of forest carbon stocks
R-PP	Readiness Preparation Proposal
tCO <sub>2</sub> e	Tonne of carbon dioxide equivalent
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change

## Table of Contents

From the Carbon Finance Unit .....	1
Kyoto Market in Transition and New Low-Carbon Initiatives .....	4
State of Trends on the Carbon Market .....	4
Summary of Operations.....	6
Distribution by Region and Sector .....	6
2011 Highlights.....	8
Next Generation Carbon Initiatives.....	16
The BioCarbon Fund (BioCF) Tranche 3.....	18
Forest Carbon Partnership Facility .....	22
Carbon Partnership Facility.....	28
The Partnership for Market Readiness.....	32
The Carbon Initiative for Development.....	34
Who We Are.....	38
Glossary.....	40







**Joëlle Chassard**  
Manager, Carbon Finance Unit  
The World Bank

## From the Carbon Finance Unit

This year's Annual Report takes us through a very busy year with an abundance of activity as the end of the first commitment period of the Kyoto Protocol approaches and project developers are anxious to get their projects registered so that they can see the fruits of their labor in the form of carbon credits. We signed 23 new purchase agreements in 2011; seven of these were in sectors where we had seen relatively little activity in previous years, such as forestry and land use. We are happy to be on the forefront of this, with our support of the first ever soil carbon project, for which we also developed the methodology. Last year, we also saw the registration of the first CDM household biogas project in China, the first issuance of carbon credits from a CDM project in Nepal, the first inclusion of seven CPAs under the Uganda Municipal Waste Compost Programme, and the first Programme of Activity in the transport sector registered with the UNFCCC.

All of this activity took place against the back-drop of a carbon market weakened by the global economic downturn as well as long-term climate policy uncertainties. Unfortunately, we continue to see a low price on carbon which is causing a domino effect on mitigation investments as well as overall climate finance resources.

Firstly, a low price discourages entrepreneurs from launching new low-carbon investments. Without a respectable price for carbon—as mentioned by Madame Christine Lagarde, IMF Managing Director, at the World Bank's Rio Breakfast at the recent Spring Meetings—we will not reach our goal for global emission reductions.

Secondly, a low price on carbon also becomes a long-term financing problem. It reduces the potential income of ongoing projects; without that secure future revenue stream, it is more difficult for projects to raise money.

Finally, a low carbon price not only stymies mitigation, but also affects the volume of resources available for other climate-related investments, be it through lower revenue flowing to the Adaptation Fund or from auctions of allowances in the EU ETS.

A low price is definitely affecting the momentum of the carbon market, but there are encouraging signs of recovery on the horizon. The recent legislations adopted in Australia, South Korea, and Mexico are significant indications of the resolve of these countries to address climate change in earnest and rely on the market to give impetus to action. In our work with country clients over the course of the past year, several positive trends have surfaced to reinforce that even as the existing carbon market struggles, interest in the market continues, particularly among emerging economies. Partly with support from the Partnership for Market Readiness that was launched in April last year, countries such as China, Brazil, and Mexico are taking the lead in developing national low carbon initiatives and piloting market-based instruments to achieve mitigation.

Lower-income countries are also looking to carbon markets to help them improve energy access, expand sustainable agriculture, protect standing forests and bring low-carbon development to scale. We are keen to support their ambitions and for this purpose launched the Carbon Initiative for Development and a third tranche of the BioCarbon Fund in Durban last December.

With these new initiatives in mind, we continue to take a long term view of mitigation taking steps to fill gaps in the market and help countries that are ready to take action now, pushing the climate agenda and carbon markets beyond the current model.



## PCF

At the close of 2011, nearly all projects in the Prototype Carbon Fund (PCF) portfolio had generated Emission Reductions (ERs), and a large share of the PCF's Clean Development Mechanism (CDM) projects had successfully completed the CDM project cycle and issued Certified Emission Reductions (CERs).

Fund Capital	\$219.18 million
Date Operational	April 2000
Participants	22
Private Capital Invested	58%



## Danish Carbon Fund

The Danish Carbon Fund (DCF) consists of 10 ERPAs in the Middle East, South Asia, East Asia, Latin America and Eastern Europe.

Fund Capital	€90 million
Date Operational	January 2005
Participants	5
Private Capital Invested	78%



## Spanish Carbon Fund

Divided into two tranches since 2008, the Spanish Carbon Fund Tranche 1 (SCF T1) consists of 18 signed ERPAs. In addition to acquiring project-based ERs, Tranche 2 (SCF T2) participates in Green Investment Schemes (GIS).

TRANCHE 1	
Fund Capital	€220 million
Date Operational	March 2005
Participants	12
Private Capital Invested	23%

TRANCHE 2	
Fund Capital	€70 million
Date Operational	April 2008
Participants	1
Private Capital Invested	0%



## NCDMF

The Netherlands Clean Development Mechanism Facility (NCDMF) has a mature portfolio that includes the first project ever registered under the Kyoto Protocol's CDM. All the projects in the NCDMF portfolio are registered.

Fund Capital	*
Date Operational	May 2002
Participants	1
Private Capital Invested	0

\* Not disclosed.



## CDCF

The Community Development Carbon Fund (CDCF) now has 29 Emission Reductions Purchase Agreements (ERPAs). Fifty-five percent of its portfolio is committed to projects in the world's poorest countries, as defined by the World Bank Group's International Development Association (IDA) and the United Nations' Least Developed Country designation.

Fund Capital	\$128.6 million*
Date Operational	March 2003
Participants	25
Private Capital Invested	45%

\* Includes \$5 million total participation of the Danish Carbon Fund.



## Umbrella Carbon Facility

Consisting of 11 private sector participants plus five carbon funds administered by the World Bank, the Umbrella Carbon Facility (UCF) holds a capital of €799.1 million, 78 percent of which represents private investment. In 2011, the facility delivered 21.32 million tCO<sub>2</sub>e in CERs, bringing the total amount of emissions delivered since inception up to 82.90 million tCO<sub>2</sub>e in CERs. Tranche 2 of the UCF was open to participation in 2010 and fully capitalized in 2011 at €112.5 million.

TRANCHE 1	
Fund Capital	€799.1 million*
Date Operational	August 2006
Participants	16
Private Capital Invested	75%

TRANCHE 2	
Fund Capital	€112.5 million
Date Operational	January 2011
Participants	4
Private Capital Invested	91%

\* Includes total €224.54 million participation of PCF, NCDMF, ICF, DCF and SCF.



## Carbon Fund for Europe

With total capitalization of €50 million, the Carbon Fund for Europe (CFE) has signed eight ERPAs with a total amount of 3.2 million tCO<sub>2</sub>e.

Fund Capital	€50 million
Date Operational	March 2007
Participants	5
Private Capital Invested	20%



## Italian Carbon Fund

With a capitalization of \$155.6 million, the Italian Carbon Fund (ICF) has signed seven ERPA's. The portfolio includes projects operating under the Kyoto Protocol's CDM and JI mechanisms.

Fund Capital	\$155.6 million
Date Operational	March 2004
Participants	7
Private Capital Invested	30%



## BioCF

The BioCarbon Fund (BioCF) has signed 23 contracts to purchase ERs from afforestation and reforestation activities, 15 of which have been registered under the Kyoto Protocol's CDM up to the end of 2011, with the remainder in advanced stages of preparation. In addition, the BioCF is innovating with REDD+ and sustainable land management projects currently excluded from the Kyoto Protocol.

TRANCHE 1	
Fund Capital	\$53.8 million
Date Operational	May 2004
Participants	14
Private Capital Invested	51%

TRANCHE 2	
Fund Capital	\$36.6 million
Date Operational	March 2007
Participants	7
Private Capital Invested	44%



## NECF

The Netherlands European Carbon Facility (NECF) is co-managed with the International Finance Corporation (IFC) and supports carbon market operations in Ukraine, Russia, and Poland.

Fund Capital	*
Date Operational	August 2004
Participants	1
Private Capital Invested	0

\* Not disclosed.



## Forest Carbon Partnership Facility

Operational since June 2008, the capital for the Forest Carbon Partnership Facility (FCPF) currently stands at \$430 million. By 2011, 21 REDD Countries had received a formal assessment of their Readiness Preparation Proposals; which is the first step in allowing them to build capacity to tap into incentives under REDD+.

Fund Capital	\$430 million**
Date Operational	June 2008
Participants	52*
Private Capital Invested	3%

\*\* Includes \$204 million for FCPF Carbon Fund, which has 10 participants.

\*15 financial contributors and 37 REDD country participants.



## Carbon Partnership Facility

The First Tranche of the Carbon Partnership Facility (CPF) became operational on May 15, 2010. The CPF's Carbon Asset Development Fund became operational January 2009.

Fund Capital	€143.5 million
Date Operational	January 2009
Participants	12*
Private Capital Invested	31%

\* 5 buyer participants and 7 seller participants.



## Partnership for Market Readiness

In its first year of operation, the PMR raised three-quarters of its targeted capitalization of \$100 million from 11 donor countries. It allocated \$5.25 million\* in preparation grants (of \$350,000 each) to its 15 Implementing Country Participants in order that they begin preparing a "Market Readiness Proposal," a roadmap for the design and implementation of carbon market instruments, as well as the needed capacity building for such instruments.

Fund Capital	\$76 million
Date Operational	April 2010
Participants	26

\*5 of these grants are expected to be awarded in May 2012.



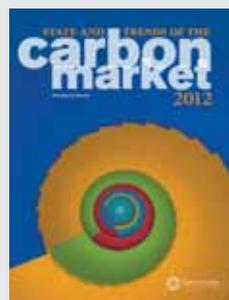
## Kyoto Market in Transition and New Low-Carbon Initiatives

### State and Trends of the Carbon Market

The carbon markets were not immune to the economic volatility of 2011. Carbon prices plummeted toward the end of the year as a result of increasing signs of long-term oversupply in the EU Emissions Trading Scheme (EU ETS), the backbone of the EU's climate policy and the engine of the global carbon market. However, even as prices declined, the value of the global carbon market increased in 2011, driven predominantly by a robust growth in transaction volumes. The total value of the market grew by 11 percent year on year, to US\$176 billion, and transaction volumes reached a new high of 10.3 billion tons of carbon dioxide equivalent (CO<sub>2</sub>e).

Central to the rise in global transaction volumes, EU Allowance (EUA) trading volumes increased, reaching 7.9 billion tons of

CO<sub>2</sub>e, valued at US\$148 billion. Trading volumes for secondary Kyoto offsets also soared in 2011, increasing by 43% year on year (yoy) to 1.8 billion tons of CO<sub>2</sub>e, valued at US\$23 billion. This was propelled by increased liquidity in the CER market and in nascent secondary Emission Reduction Unit (ERU) market. Largely driven by hedging and arbitrage, trading volumes for all assets increased as annual GHG emissions in Europe declined for the second time in three years (primarily driven by weak industrial activity in the EU) and forecasts of compliance demand were dwarfed by an oversupply of allowances. As compliance demand and prices deteriorated, the issue of whether current carbon prices can sufficiently spur long-term low-carbon investments emerged in the debate, surfacing a key challenge in this market: an oversupply created as a consequence of demand responding to the current macroeconomic scenario versus a pre-established supply determined under very different market conditions.



### *State and Trends of the Carbon Market Report 2012*

The *State and Trends of the Carbon Market* report is produced each year by the Carbon Finance Unit of the World Bank. The 2012 report, released at CARBON EXPO 2012 in Cologne, describes the carbon markets in 2011. It will be available in June 2012 in print and online at [www.carbonfinance.org](http://www.carbonfinance.org).

The global carbon market welcomed the news that the Australian Parliament had passed the ambitious Clean Energy Act, which will bring a nationwide cap-and-trade scheme to Australia by 2015. In addition, both Mexico and the Republic of Korea got their comprehensive climate bills passed a few days apart in April 2012.

The value of the pre-2013 primary CER market declined once again in 2011 as a consequence of the imminent end of the first commitment period of the Kyoto Protocol. Market value fell by 32% yoy to US\$1.0 billion. The size of the ERU and Assigned Amount Unit (AAU) markets also decreased, by 36% and 49% respectively. In stark contrast to this, the post-2012 primary market increased by a robust 63% yoy to US\$2 billion despite depressed prices. Although China remained the largest source of contracted CERs, African countries—largely bypassed in the pre-2013 market—emerged stronger in 2011 and accounted for 21% of post-2012 CERs contracted during the year. Despite the increase in post-2012 volumes, purchase agreements became less binding due to lingering uncertainties regarding residual compliance demand and the eligibility of international credits in existing frameworks and schemes under development.

Against this backdrop, several domestic and regional low-carbon initiatives, including market mechanisms, gained traction in both developed and developing economies in 2011. The global carbon market welcomed the news that the Australian Parliament had passed the ambitious Clean Energy Act, which will bring a nationwide cap-and-trade scheme to Australia by 2015. In 2011, California's cap-and-trade regulation was

adopted by the California Air Resources Board and is set to go into effect in 2013, covering 85% of California's annual emissions. Québec, which emits 12% of Canada's annual GHG emissions, adopted its own cap-and-trade plan, and the province is now working toward linking it with California's starting in 2013. In addition, both Mexico and the Republic of Korea got their comprehensive climate bills passed a few days apart in April 2012.

These initiatives combined mean five new jurisdictions are adopting economy-wide cap-and-trade schemes. These events are particularly noteworthy in contrast to 2010, when no such initiatives were launched. Now the world looks with particular attention to China, which is also among the frontrunners in the race to become a low-carbon economy. Its advanced plan to pilot several regional cap-and-trade schemes is expected to provide the foundation for a nationwide scheme in the coming years.





# Summary of Operations



## In 2011, the Carbon Finance Unit's carbon funds and facilities signed 23 new Emission Reductions Purchase Agreements (ERPAs), bringing the total number of active ERPAs to 160.\*

The year 2011 was dedicated to reaping what has been sown during the past decade of project support. 25 projects and Programmes of Activities were registered with the UNFCCC after passing validation, of which 11 were forestry projects, indicating that projects in the afforestation/reforestation sector are moving forward. In 2011, 31 million carbon credits were delivered by projects compared to 16.7 million in 2010, a 46% increase in the delivery of generated emission reductions. Furthermore, the Carbon Finance Unit extended the purchase period of 15 projects beyond 2012. The Unit continued its cutting-edge work on policy and methodology issues and had several important methodologies approved by the UNFCCC. In addition, a new work program on CDM reform was started.

In more than a decade of work the World Bank funds and facilities have been responsible for the issuance of approximately 106 million emission reductions of various types.

	Projects	Value	Volume (tCO <sub>2</sub> e)
ERPAs Signed and Active	160	\$1.86 billion	229 million

### Distribution by Region and Sector

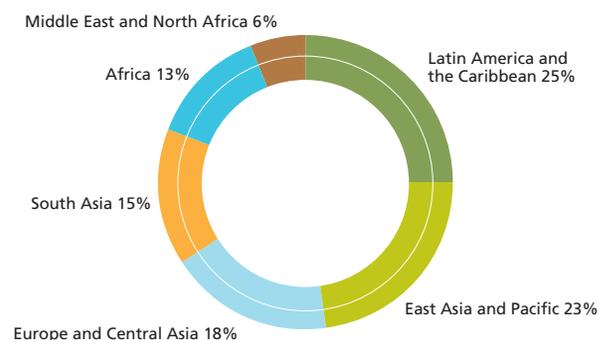
The Latin America and Caribbean region held the largest percentage of the carbon finance unit portfolio in 2011 by number of active ERPAs, closely followed by the East Asia and Pacific region. While the volume of emission reductions in Africa remains low at 4%, the number of active ERPAs in the portfolio in the Africa region is 18%,\*\* substantially higher than the general percentage of projects in Africa registered under the Clean Development Mechanism, which remains low at 2%.

As in past years, HFC-23 destruction projects represented the largest share of the carbon finance portfolio by volume of emission reductions (56.5%), though accounted for by only two projects. The growth in ERA volume in 2011 was highest in the renewable energy sector and in the South Asia and Latin America regions.

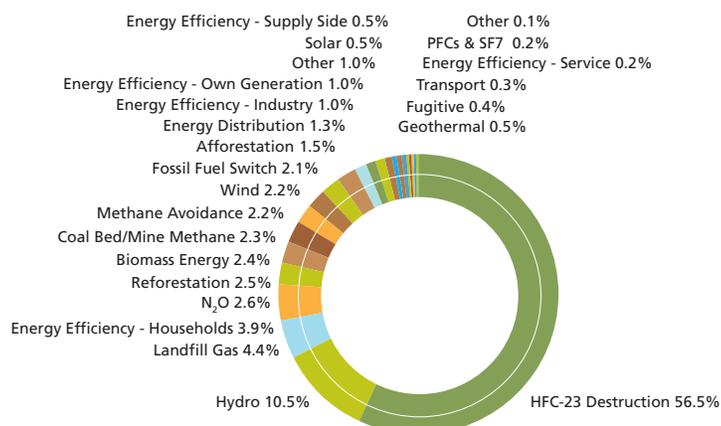
\* This figure includes cases where a project entity signs an ERPA with multiple funds. All such ERPAs are counted.

\*\*Africa is defined as North Africa and sub-Saharan Africa.

### Geographic Distribution (by Active ERPAs)



### Sectoral Distribution (by volume of CO<sub>2</sub>e)



# 2011 Highlights



Andrew Steer talks with Maurice Kwadha on his farm in Kenya.



Ibi Bateke Carbon Sink Plantation Project in the Democratic Republic of Congo.

- **A 10-day South-South Exchange** event on community forestry and REDD+ took place in Brazil in February and involved participants from six African countries meeting Brazilian counterparts ranging from government officials to forestry specialists, along with representatives from non-governmental organizations and the private sector, including forest reserves. The goal was to help these African countries better understand the role that community forestry and payments for ecosystem services schemes can play in their national REDD+ strategies. They also learned about Brazil's emerging institutional framework for REDD+, including the Amazon Fund.
- In February, Andrew Steer, World Bank Special Envoy for Climate Change, visited the site of an agricultural soil carbon project in Kisumu, Kenya. **The Smallholder Agriculture Carbon Finance Project**, supported by the Bank's BioCarbon Fund, enables farmers to adopt new farming techniques which bring them the "triple win in agriculture"—higher yields, improved resilience of their crops to drought, and better soils that sequester more carbon.
- In March, the **Ibi Bateke Carbon Sink Plantation Project** in the Democratic Republic of Congo was registered with the UNFCCC, which means that the first carbon credits started flowing to the country. This reforestation project, covering 4,200 hectares of land, is the first CDM project registered and the first reforestation project in the DRC. The revenues generated by the sale of the carbon credits



The Smallholder Agriculture Carbon Finance Project, supported by the Bank's BioCarbon Fund, enables farmers to adopt new farming techniques which bring them the "triple win in agriculture"—higher yields, improved resilience of their crops to drought, and better soils that sequester more carbon.

will finance health, education, and agroforestry activities for the local community.

- The **India-Fal-G Brick and Blocks Project** of the Community Development Carbon Fund was selected to sell its carbon credits to the International Monetary Fund as part of the institution's move to become carbon neutral. The India project aims to reduce greenhouse gas emissions by promoting and deploying an energy-efficient brick-making technology.
- The **Forest Carbon Partnership Facility (FCPF)** held its 8<sup>th</sup> Participants Committee meeting in Dalat, Vietnam, in March. A total of \$14.2 million in new grant allocations were approved for Ethiopia, Vietnam, Cambodia, and Peru, and France committed an additional €4 million to the Readiness Fund. Also in March, the World Bank's management and Board of Executive Directors approved the safeguards approach to be followed under the FCPF Readiness Fund and the opening of the Readiness Fund to several Delivery Partners. While more work was still needed on the modalities of opening up to other Delivery Partners, these two developments paved the way for grant agreements to be signed with REDD+ countries.
- In April, Italy joined the **FCPF's Readiness Fund**, signing a Participation Agreement for \$5 million. Italy became the 15<sup>th</sup> donor to commit funding to the Readiness Fund.



**India-Fal-G Brick and Blocks project** of the Community Development Carbon Fund aims to reduce greenhouse gas emissions by promoting and deploying an energy efficient brick-making technology.





Egypt Vehicle Scrapping and Recycling Programme

- In April, the World Bank's **Partnership for Market Readiness (PMR)** held its organizational meeting in Bangkok. Twenty-nine countries and various organizations attended, and donor countries pledged financial contributions of \$68 million—about 70% of the target amount of \$100 million. The meeting adopted the PMR Governance Framework and confirmed the expressions of interest of nine Implementing Country Participants.
- The **Hubei Eco-Farming Biogas Project** issued its first carbon credits on May 11. This project, which is selling its certified emission reductions to the Community Development Carbon Fund, is the first CDM household biogas project registered in China to generate carbon credits. With 33,000 individual households deriving biogas from pig manure, the project demonstrates innovative technical approaches and a credible process to trade carbon for household-based biogas projects.
- On May 11, the **Egypt Vehicle Scrapping and Recycling Programme** was the first ever transport Programme of Activities to be registered under the CDM. It gives taxi owners the financial incentives to scrap cabs older than 20 years and provides them with lower prices and guaranteed financing for the purchase of new vehicles. Most importantly, the program paves the way for the sustainable and environmentally sound removal and recycling of old cars.
- In May, the **BioCarbon Fund** organized a roundtable with a range of stakeholders to discuss the complex realities of Afforestation and Reforestation (A/R) projects and the issues they face in the application of CDM verification requirements. This workshop created a basis for two



new guidelines, approved by the CDM Executive Board at their 63th meeting, that help to streamline the verification of A/R CDM projects.

- From June 1-3, 2011, the Carbon Finance Unit participated in the annual **Carbon Expo** in Barcelona, Spain. It is the principal annual conference focused on carbon finance, and is co-hosted by the World Bank to showcase its support for current as well as post-2012 carbon markets through innovative financial instruments. The team's flagship publication *The State and Trends of the Carbon Market 2011* was launched at the event. Furthermore, the team started a work program on CDM reform and held a first expert workshop to discuss this topic.
- The **FCPF's Carbon Fund** became operational on June 1. The Fund, which is made up of three private sector and eight public sector participants, will provide 'payments for performance', where emission reductions from REDD+ programs are verified.
- The **FCPF's 9<sup>th</sup> Participants Committee Meeting** was held in Oslo in June. The Norwegian Minister of the Environment and Development Cooperation Erik Solheim and the World Bank's Special Envoy for Climate Change Andrew Steer signed an agreement contributing \$50 million to the newly launched FCPF Carbon Fund. In addition, Germany announced a new pledge of €30 million to the FCPF Carbon Fund. Also, \$6.8 million in



Annual **Carbon Expo** in Barcelona, Spain.



Climate Change Envoy Andrew Steer and Norwegian Minister Solheim celebrate Norway's contribution to FCPF.



**The *Unplanned Deforestation Methodology* developed by the BioCarbon Fund was approved by the Verified Carbon Standard Association which can help unlock carbon market revenues for countries and poor communities across Africa, Asia and Latin America, boosting the conservation of forests and creating new livelihoods.**

new grant allocations was approved for Liberia and Uganda, and three grant agreements of \$3.4 million each to support countries' REDD+ Readiness Preparation efforts were signed prior to the meeting (for Nepal, Indonesia and the DRC). In addition, the Participants Committee approved a pilot Multiple Delivery Partner arrangement of five REDD Country Participants, a Common Approach to environmental and social safeguards among Multiple Delivery Partners, and approved the Inter-American Development Bank and the United Nations Development Programme to act as the first Delivery Partners under the Readiness Fund in countries where the World Bank is not active. This was a key development in the life of the FCPF, which should improve the service coverage to REDD Country Participants.

- The Carbon Finance Unit's Policy and Methodology Team contributed to the World Bank's working paper *Carbon capture and storage in developing countries: a perspective on barriers to deployment*, published in June, and led the preparation of the chapter on the role of climate finance sources in accelerating CCS demonstration and deployment in developing countries. The report suggests that a range of support mechanisms, both market and nonmarket approaches working in tandem at the national and international levels, may be required to support different types of CCS projects throughout their lifetime.

- The **Africa Carbon Forum** was held on July 4-6 in Marrakesh, Morocco, bringing together stakeholders working in carbon markets in Africa. At the event, the BioCarbon Fund released a draft report which draws on seven years of experience of A/R projects in 16 developing countries. The report finds that such projects face numerous regulatory, capacity, finance and land tenure issues. Despite these barriers, the projects are not only mitigating climate change by contributing to the storage of carbon dioxide, they are also improving rural livelihoods, increasing resilience to climate change, conserving biodiversity, and restoring degraded lands.
- Also in July, the *Unplanned Deforestation Methodology* developed by the BioCarbon Fund was approved by the **Verified Carbon Standard Association**. This can help unlock carbon market revenues for countries and poor communities across Africa, Asia and Latin America, boosting the conservation of forests and creating new livelihoods. The new methodology allows projects in the voluntary market to calculate avoided emissions by reducing unplanned deforestation either on the edge ("frontier") of large cleared areas, like agricultural zones, or in a patchwork ("mosaic") within standing forests.
- In August and September, the **Nepal Biogas Project received its first carbon credits**. This was the first CDM project in Nepal and the first household biogas CDM project registered with the UNFCCC worldwide. The issuance of about 92,000 CERs marked a significant milestone, as it was one of the largest issuances ever made in a least developed country.



- On September 19, the **Minister of Environment of the Czech Republic signed an agreement** with the World Bank to purchase an additional 2.6 million Assigned Amount Units (AAUs) under the country's Green Investment Scheme, a second phase of an agreement that was signed in May 2010 for 2 million AAUs. The objective of the GIS program is to support selected measures in residential buildings that will lead both to reductions in carbon dioxide emissions and to the initiation of a long-term trend toward sustainable housing.
- **The Spanish Carbon Fund, the Carbon Fund for Europe, and the Polish Ministry of the Environment** signed two agreements in October to help increase the energy efficiency of public buildings in Poland. These agreements serve as a contribution towards the Polish Government's Green Investment Scheme initiative called the *Energy Management in Public Buildings* to combat climate change and generate a revenue stream from carbon credits.
- **In October, the FCPF hosted its 4<sup>th</sup> Participants Assembly Meeting, its 10<sup>th</sup> Participants Committee Meeting and its 2<sup>nd</sup> Carbon Fund Meeting in Berlin.** The Central African Republic and Colombia presented their Readiness Preparation Proposals (R-PPs) and were allocated grants totaling \$7 million; Guatemala and Mozambique presented their draft R-PPs. Participants also discussed the lessons learned from the Technical Advisory Panels' reviews of the 26 country R-PPs presented to the FCPF to date. A Readiness Preparation grant was signed with



The Spanish Carbon Fund, the Carbon Fund for Europe, and the Polish Ministry of the Environment signed **two agreements** in October to help increase the energy efficiency of public buildings in Poland.



The FCPF hosted its 4<sup>th</sup> Participants Assembly Meeting, its 10<sup>th</sup> Participants Committee Meeting and its 2<sup>nd</sup> Carbon Fund meeting in October.



Uganda Reforestation Project.

Ghana in October. The Food and Agriculture Organization was also approved to be a Delivery Partner for the FCPF. The size of the Multiple Delivery Partner arrangement was increased to 10 REDD Country Participants.

- In October, the **PMR** held its second Partnership Assembly meeting in Istanbul with its 15 Implementing Country Participants. The PMR also hosted its first technical workshop, on the topic of Mitigation Programs for Scaled-up Crediting Mechanisms, including concrete studies from three different areas: the housing sector in Mexico, geothermal energy in Indonesia, and opportunities for multi-sector initiatives, such as city-wide mitigation initiatives.
- Also in October, the Policy and Methodology Team carried out a consultation in Paris with representatives from developing countries and Annex I countries on CDM reform and standardized baselines to support the work on this topic by the Carbon Finance Unit.
- In November, the **Uganda Nile Basin Reforestation Project** became fully registered. This brought the total number of afforestation/reforestation projects in Africa that are registered with the UNFCCC to nine—eight of which are BioCarbon Fund projects.
- On December 5, the **Carbon Partnership Facility** (CPF) signed its first ERPA with Caixa Economica Federal, a municipal lending agency in Brazil. Caixa will sell three million carbon credits to the CPF's carbon buyers to capture methane gas from landfills, implementing a key environmental priority in Brazil while making a broader contribution to climate change mitigation. By combining a



World Bank loan and a programmatic carbon finance operation, it is a valuable innovation in the financing programs that produce environmental benefits.

- In December, Germany formalized its contribution of an additional €30 million to the FCPF, making Germany the largest contributor to the FCPF. To respond to forest country needs, the size of **the FCPF Readiness Fund and Carbon Fund** grew to \$230 million and \$204 million, respectively, by the end of the year. This expansion will enable the private sector and governments to contribute additional resources to the two funds.
- Also in December, Denmark pledged \$5 million to the **Partnership for Market Readiness**, bringing total pledges to \$75 million.
- At the **17<sup>th</sup> Conference of the Parties** in Durban in December, the World Bank announced two new financial initiatives—the Carbon Initiative for Development and the third tranche of the BioCarbon Fund. Both initiatives will help poor countries access financing for low-carbon investments and enable them to tap into carbon markets after 2012 by selling carbon credits from a diverse range of projects.
- On December 27, the **China Shandong Minhe Animal Manure Management System Project**, which treats the manure from 5 million chickens in 16 farms, supported by the Community Development Carbon Fund, issued its first carbon credits. This project is the first and only CDM project applying manure management systems methodology ACM0010 that has issued carbon credits. It is also the first CDM project in China to mitigate

emissions from chicken manure by improving its management at chicken farms and using a biogas-cogeneration system to supply cleaner power to a grid mainly based on fossil fuels.

- In late December, the **Adoption of Sustainable Agricultural Land Management Methodology** developed by the Carbon Finance Unit was approved by the Verified Carbon Standard. It allows projects to generate carbon credits by introducing sustainable land management practices in degraded agricultural landscapes. The approval of this methodology is an important step in supporting climate-smart agriculture through linkages between agricultural productivity, adaptation and climate change mitigation.



Uganda Reforestation Project.



## Next Generation Carbon Initiatives



As the first commitment period of the Kyoto Protocol comes to a close, the World Bank is looking toward the future and has, in the last several years, launched a number of initiatives that support the growth of carbon markets beyond 2012.

Such **'next generation'** carbon initiatives focus on moving from project to program-based activities in order to scale up the impact of low-carbon activities; they strengthen our support for activities in the areas of forestry, land use, and access to energy in the poorest countries; and they provide technical and financial support to help set up domestic emissions trading schemes and other activities in developing and emerging-market countries. Momentum among developing and emerging-market countries to take domestic action is building; the World Bank is designing initiatives to leverage it.





## The BioCarbon Fund (BioCF) Tranche 3



To date, the BioCarbon Fund (BioCF) has committed \$90 million to over 20 afforestation and reforestation projects as well as to three avoided deforestation, soil carbon and agriculture pilots. It has contributed to the development of the carbon market for land-use offsets through the development of these projects and through the development of methodologies and tools for project developers.

Carbon sequestration from changes to land use remains a largely untapped opportunity, particularly in low income countries. This situation is changing however, with new regional and international developments that are opening up markets to forest and land-use credits.

Tranche 3 of the BioCarbon Fund (BioCF T3) was launched in December 2011 to build on the Fund’s considerable on-the-ground experience and success while expanding the BioCF to new strategic areas. The next phase of the Fund will focus on i) *scaling-up* afforestation/reforestation and regeneration of degraded lands; ii) piloting areas not yet tested for *agricultural land* use which have significant greenhouse gas emissions potential, including methane emissions from rice paddies, grasslands and pasturelands, and wetlands and coastal areas; and iii) exploring how new approaches such as “*landscape accounting*” can be put into practice. Such a breakthrough approach will include an efficient accounting mechanism for a variety of land-use and energy activities within a defined large-scale boundary. As Tranche 3 activities scale-up, they will be cognizant of national readiness frameworks within which or based on which future BioCF operations would be designed.

Although the volume of carbon credits generated has been the main indicator of project success to date, additional benefits are also generated in land-use projects. Tranche 3 will also aim to pilot ways to quantify and subsequently value such co-benefits using some of the techniques deployed for robust carbon accounting. In time, this approach could be coupled with payments for ecosystem services.

The BioCF T3 is now actively seeking funding of \$75 million for two funds. A sub-fund dedicated to the purchase of emission reductions is seeking \$60 million (minimum contribution \$2.5 million) with windows that cater to purchasing credits from the voluntary and/or regulated markets; a sub-fund for technical assistance, financing and testing of non-ER generating activities—is seeking \$15 million (minimum contribution \$1 million).

Financing will be sought from numerous sources, including both donors and current participants. These sources will be linked to innovative financing operations to achieve scale, and will include fast-start climate finance, or green bonds. Innovative financing developed in parallel will likely need to incorporate some up-front investment which the BioCF T3 could provide.





## Aim and New Features

The aim of the next phase of the BioCarbon Fund is to use climate finance to catalyze large-scale regeneration of degraded lands and sustainable land management. The focus will be on land areas that are deforested and degraded that can be rehabilitated by better agricultural practices, and/or through reforestation, and/or those areas that interface with REDD+ boundaries.

### *Integrated landscape carbon accounting*

The BioCF T3 will build upon experience to-date and break down existing silos, where A/R, REDD+, agriculture and energy are treated separately, in order to pilot a landscape and ecosystem approach. This will involve greenhouse gas emission reduction activities with significant potential that have not yet been explored in developing countries, including improved grasslands and pastureland management and trees outside the forest (agroforestry). There are important synergies in the landscape approach, but also trade-offs, i.e., opportunity costs will be encountered. This work will also be complimentary with other activities supported by the World Bank such as access to energy and REDD+.

### *Additional payments for ecosystem and environmental services beyond carbon*

The BioCF T3 will test different models for determining premia or stand alone payments, and for understanding the optimal way of bundling or stacking a carbon asset with a premium for biodiversity or similar asset. This has been tested to a limited degree by the BioCarbon Fund by factoring environmental benefits into the contract price for carbon. The new approach would further whether

the measurement, reporting and verification (MRV) approach to carbon accounting could be applied to the monetization of other ecosystem services; or whether an independent system should be established. This approach would also involve actors under the UN Convention on Biological Diversity and the UN Convention to Combat Desertification. A variety of pilots are envisioned in different landscapes in partnership with biodiversity and wildlife conservation entities. In the long-term, it is envisioned that biodiversity benefits would be the first in a framework developed for making payments for a variety of ecosystem services.

### *Improved access for poor rural communities to environmental markets and safeguards*

An approach that specifically improves access to markets by the poorest communities is important. Equally, the nexus of people and land issues will not be overlooked; the Funds activities will conform to the World Bank's environmental and social safeguards, with special attention to benefit sharing.

### *Scaling-up*

The need for scaling-up is supported by requests to the BioCF from both project entities and project host countries that want to apply the knowledge acquired from implementing projects to larger-scale interventions. Since most experience to date revolves around projects, there will be challenges in attaining scale. With a landscape approach, scaling up from the project level to the jurisdictional level (i.e., a sub-national scale within a defined boundary) is the natural progression. New tools, such as standardized baselines, will be tested. Scaling up will aim to match national and sub-national criteria countries may be developing.



The aim of the next phase of the BioCarbon Fund is to use climate finance to catalyze large-scale regeneration of degraded lands and sustainable land management. The focus will be on land areas that are deforested and degraded that can be rehabilitated by better agricultural practices, and/or through reforestation, and/or those areas that interface with REDD+ boundaries.

### *Financing*

Tranches 1 and 2 of the BioCarbon Fund were not geared to providing up-front financing for projects. This was a significant challenge for project developers. As a result, it is proposed that BioCF T3 will: i) make provisions for some up-front financing for project entities (or else it will not be possible to embark on projects aiming for scale); ii) aim for a blend of financing with the Bank using its leveraging power, and co-invest alongside other public and private sector entities; and (iii) support innovative financial approaches that help close the early-stage funding gap.





## Forest Carbon Partnership Facility



2011 marked a clear shift in the Forest Carbon Partnership Facility (FCPF), from its early start-up phase of establishing the facility's modalities to a phase of providing and enhancing support to countries. Over the course of the year, the FCPF Participants Committee approved \$28 million in new Readiness Preparation grants to eight forest countries that presented Readiness Preparation Proposals describing how they will prepare for REDD+.

Recognizing that financial flows from the FCPF have been slower than expected, advances were made to clear the way for disbursement. The World Bank's management and Board of Executive Directors approved the safeguards approach to be followed under the FCPF Readiness Fund as well as the opening of the Readiness Fund to several Delivery Partners, in order to engage other partners in addition to the World Bank to carry out FCPF activities with REDD+ countries. Following this, the FCPF Participants Committee approved a "Common Approach" to environmental and social safeguards to be followed by Multiple Delivery Partners, and approved the Inter-American Development Bank, the United Nations Development Programme, and the Food and Agriculture Organization to act as Delivery Partners under the Readiness Fund in a pilot phase covering up to 10 countries where the World Bank does not have an active forest sector engagement. These key developments in the life of the FCPF paved the way for grant agreements to be signed with REDD+ countries, and should improve service coverage to these countries.

In line with these developments, grant agreements totaling US\$13.6 million were signed to support countries' REDD+ Readiness Preparation efforts; and a number of other grant agreements are nearing signature.

2011 also saw the start of operations of the FCPF's Carbon Fund, which will pilot performance-based payments for emission reductions from REDD+. This was a key milestone for the FCPF and a reminder that additional financial incentives are needed to sustain the momentum of REDD+. Participants

began laying the foundation for this work through discussions on the potential methodological framework and pricing approach for REDD+ programs to be supported by the Carbon Fund.

The team is encouraged by donors' demonstration of their confidence in the FCPF, with the European Commission and Italy becoming the latest donors to contribute to the Readiness Fund, and the Governments of France, Germany, and Norway committing additional resources. With these additional contributions, total pledged funding to both the Readiness Fund and the Carbon Fund amounted to over \$430 million by the end of 2011.

Also, the first evaluation of the FCPF was completed, and it highlighted the multi-sectoral and cross-cutting nature of REDD+ and the challenges that come with tackling an agenda that presents both opportunities and risks, thus requiring a strategic approach for addressing the challenges during the REDD+ readiness phase and beyond. Within this context, the FCPF is taking action to strengthen its support to REDD+ country governments and stakeholders, including accelerating financial flows to countries. The FCPF held a Global Dialogue with Indigenous Peoples and Forest Dwellers and, in response to requests from Indigenous Peoples and Forest Dwellers, is organizing a series of regional dialogues in 2012 and launching programs to build the capacity of Indigenous Peoples and southern civil society organizations to engage in their national REDD+ processes and increase their participation in FCPF meetings. Further work is also planned to enhance analytical

support to countries and promote knowledge exchange, including South-South cooperation, which REDD+ countries have found very valuable in the past.

Looking ahead, and with the confirmation at the UNFCCC in Durban in December 2011 of a role for the private sector in financing for REDD+ and with REDD+ likely to be part of the eventual agreement emanating from the Durban Platform agreement, the work of the FCPF remains critical. In the year ahead, the FCPF will advance its work on issues at the interface between readiness and carbon finance through the design of a Readiness Package and an assessment approach, the design of a methodological framework and pricing and valuation approach for the Carbon Fund, and on the development of reference levels and MRV systems for sub-national emission reductions programs.

To achieve this, it is clear that REDD+ requires cooperation among forest countries, donors, a variety of stakeholders and delivery partners. The advancements made in the FCPF in 2011 reflect this, and helped to build a stronger platform for all parties to engage in tackling REDD+.

## Background

The FCPF, which became operational in June 2008, is a global partnership focused on reducing emissions from deforestation and forest degradation, forest carbon stock conservation, sustainable management of forests and enhancement of forest carbon stocks (REDD+). The FCPF complements the UNFCCC negotiations on REDD+ by demonstrating how REDD+ can be applied at the country level and by learning lessons from this early implementation phase.

It is widely recognized that REDD+ presents a potentially huge developmental and environmental opportunity. In addition to the potential for substantial, cost-effective and immediate emissions reductions (around 17% of greenhouse gas emissions are from deforestation and forest degradation, though emissions may have declined in recent years), REDD+ also has the potential to provide benefits to the estimated 1.2 billion people living in or depending on forests for their

livelihoods. The potential for biodiversity conservation is also significant since forests are home to more than half of all species and approximately a quarter of pharmaceutical drugs are derived from rainforest plants. Similarly, in many countries deforestation is one of the major factors leading to depletion of water resources and degradation of water quality. REDD+ has the potential to maintain water quantity and quality, help control soil erosion, prevent flooding, and reduce run-off.

The FCPF has created a framework and processes for REDD+ readiness, which helps countries get ready for future systems of financial incentives for REDD+. Using this framework, each participating country develops an understanding of what it means to become ready for REDD+, in particular by developing reference emission levels, adopting a REDD+ strategy, designing monitoring systems and setting up REDD+ national management arrangements, in ways that are inclusive of the key national stakeholders.

## Governance

As of December 2011, 37 forest developing countries (14 in Africa, 15 in Latin America and the Caribbean, and eight in Asia-Pacific) were part of the partnership. The FCPF relies on an effective and inclusive governance structure, with the Participants Assembly and the Participants Committee at its core.

The Participants Assembly, which comprises of all the countries and organizations participating in the FCPF, meets annually and elects the Participants Committee. The Participants Committee is made up of an equal number of forest (REDD+) countries (14) and financial contributors (14), and is also composed of observers representing Indigenous Peoples, civil society, international organizations, the UN-REDD Programme, the UNFCCC Secretariat and the private sector. The Committee, which meets about three times a year, is the main decision-making body of the FCPF. It reviews country submissions, decides on grant resource allocation, and approves budgets inter alia.

The World Bank assumes the functions of trustee, secretariat



and Delivery Partner. The Inter-American Development Bank and United Nations Development Programme are in the process of becoming Delivery Partners in some countries under the Readiness Fund.

### Readiness Fund

With assistance from the Readiness Fund (about \$230 million committed or pledged by 15 public donors as at December 31, 2011), each participating forest country prepares itself for REDD+ by developing the necessary policies and systems, in particular by adopting national strategies; developing reference emission levels; by designing measurement, reporting and verification MRV systems; and by setting up REDD+ national management arrangements, including the proper safeguards.

The focus of the FCPF to date has been on REDD+ readiness. As at December 31, 2011 a total of 21 countries had received a formal assessment of their Readiness Preparation Proposals and almost \$80 million had been allocated in grant funding.

In the readiness phase, significant cooperation has been developed between the FCPF and the UN-REDD Programme, the Forest Investment Program and the Global Environment Facility. In addition, a common approach to environmental and social safeguards has been developed, which allows the proceeds of the FCPF Readiness Fund to flow through the various Delivery Partners.

### Carbon Fund

The Carbon Fund, the second fund of the FCPF, became operational in June 2011. It will provide payments for verified emission reductions from REDD+ programs in countries that have made considerable progress towards REDD+ readiness. About five REDD Country Participants will qualify for the Carbon Fund based on a progress assessment by the FCPF Participants Committee.

Programs submitted to the Carbon Fund (about \$204 million committed or pledged by 10 public and private

contributors as of December 31, 2011) will have to meet the following criteria:

- Focus on results, namely high-quality and sustainable emission reductions including social and environmental benefits.
- Sufficient scale of implementation (e.g., at the level of an administrative jurisdiction within a country or at the national level).
- Consistency with emerging compliance standards under the UNFCCC and other regimes.
- Diversity, so as to generate learning value for the FCPF and other Participants.
- Transparent stakeholder consultations.

In addition, programs implemented at the sub-national scale will need to be consistent with the emerging national strategies, reference emission levels and MRV systems, and be accompanied by measures to assess and minimize the risk of leakage.

The Carbon Fund is intended to play a catalytic role for REDD+, building on the experience of pioneering initiatives such as the BioCarbon Fund. Accordingly, Carbon Fund commitments should be made early enough to provide incentives to countries to adopt the necessary policies and systems and undertake the necessary investments. Consistent with the UNFCCC decision on REDD+ adopted in Cancun in December 2010, the readiness, investment, and performance-based payment phases are not purely sequential but will instead overlap to a large extent. Nevertheless, to ensure that carbon finance builds on readiness achievements, the FCPF Participants Committee must have assessed a country's Readiness Package before the country can enter into an Emission Reductions Payment Agreement with the Carbon Fund.

The Carbon Fund will deliver emission reductions to the financial contributors to the fund pro rata to the capital share.

# Readiness Fund Participants

## Donor Participants

- EUROPEAN COMMISSION
- GOVERNMENT OF AUSTRALIA
- GOVERNMENT OF CANADA
- GOVERNMENT OF DENMARK
- GOVERNMENT OF FINLAND
- GOVERNMENT OF FRANCE
- GOVERNMENT OF GERMANY
- GOVERNMENT OF ITALY
- GOVERNMENT OF JAPAN
- GOVERNMENT OF THE NETHERLANDS
- GOVERNMENT OF NORWAY
- GOVERNMENT OF SPAIN
- GOVERNMENT OF SWITZERLAND
- GOVERNMENT OF THE UNITED KINGDOM
- GOVERNMENT OF THE UNITED STATES OF AMERICA

## Carbon Funds Participants

### PUBLIC SECTOR

- EUROPEAN COMMISSION
- GOVERNMENT OF AUSTRALIA
- GOVERNMENT OF GERMANY
- GOVERNMENT OF NORWAY
- GOVERNMENT OF SWITZERLAND
- GOVERNMENT OF THE UNITED KINGDOM
- GOVERNMENT OF THE UNITED STATES OF AMERICA

### PRIVATE SECTOR & NGOs

- BP TECHNOLOGY VENTURES
- CDC CLIMAT
- THE NATURE CONSERVANCY



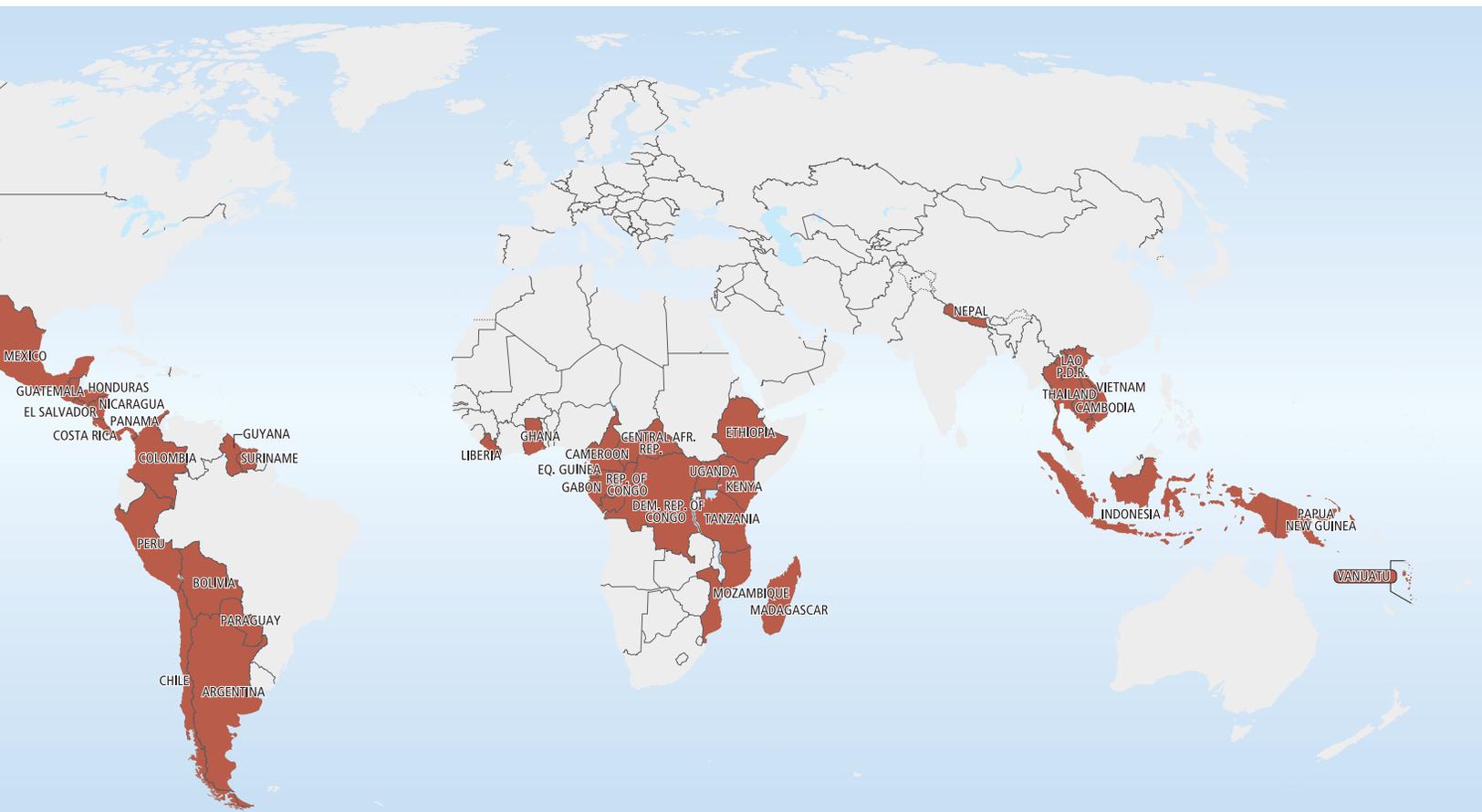
## REDD COUNTRY PARTICIPANTS

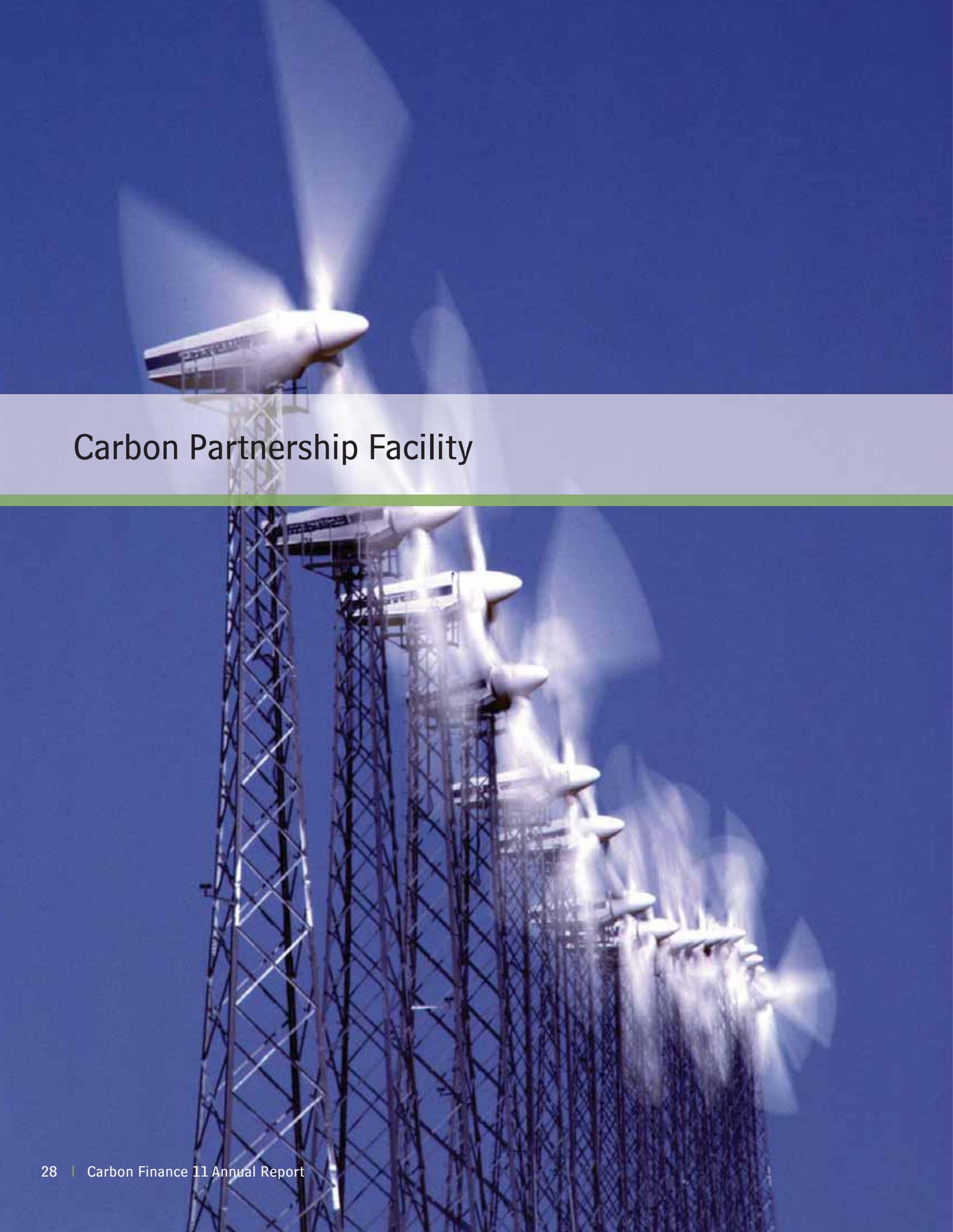
REDD Country Recipients.  
The 37 tropical and sub-tropical developing countries thus far selected by the Participants Committee of the Forest Carbon Partnership Facility to be assisted in their efforts to reduce emissions from deforestation and degradation—called REDD+—by providing value to standing forests.

*Argentina	*Ghana	Papua New Guinea
Bolivia	Guatemala	Paraguay
*Cambodia	*Guyana	*Peru
Cameroon	Honduras	Suriname
*Central African Rep.	*Indonesia	*Tanzania
Chile	*Kenya	Thailand
*Colombia	*Lao P.D.R.	*Uganda
*D.R. of Congo	*Liberia	Vanuatu
*Rep. of Congo	Madagascar	*Vietnam
*Costa Rica	*Mexico	
El Salvador	Mozambique	
Equatorial Guinea	*Nepal	
*Ethiopia	Nicaragua	
Gabon	*Panama	

IBRD 37852  
MAY 2011  
This map was produced by the Map Design Unit of The World Bank. The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of The World Bank Group, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries.

\* Countries with Readiness Preparation Proposals formally assessed as of December 31, 2011.



A photograph of a wind farm with several turbines in a row, set against a clear blue sky. The turbines are white with dark accents on the nacelles. The blades are blurred, suggesting they are in motion. The towers are made of a dark metal lattice structure. A semi-transparent grey bar with a green underline is positioned over the middle of the image, containing the text 'Carbon Partnership Facility'.

## Carbon Partnership Facility

The Carbon Partnership Facility (CPF) is one of the World Bank's major new carbon finance instruments. It is designed to develop and market emission reductions by providing carbon finance to investments focused on delivering post-2012 emission reduction assets. It consists of the Carbon Asset Development Fund, which supports the preparation of the emission reduction programs, and the CPF Carbon Fund, which will purchase emission reductions generated by CPF programs.

The CPF collaborates with governments and market participants on investment programs and sector-based interventions that are consistent with low-carbon economic growth and the sustainable development priorities of developing countries.

The CPF has been established as a *partnership*, where both our Buyer and Seller Participants, together with Donors and Host Country Partners, can sit together at the table, learn from each other's experience and challenges, and work together to design solutions that will work on the ground and be mutually beneficial.

The Facility draws on the World Bank's financial and knowledge resources to strategically integrate carbon finance with sustainable development plans by aligning carbon finance with World Bank country assistance programs—and often linking with lending operations. It facilitates the implementation of low-carbon programs across an array of sectors and technologies—energy generation and distribution, energy efficiency, and waste management—in situations where governments need policy measures or investments.

In the current Kyoto period, existing carbon finance mechanisms (e.g. CDM) operate largely on a project-by-project basis. The CPF utilizes scaled-up, programmatic approaches, such as the CDM Programme of Activities (PoA), to enable carbon finance to systematically support partner country initiatives in support of low-carbon investments. The team will work on a larger, more programmatic basis with governments and agencies to develop large-scale carbon finance programs. These programs will be linked to Bank operations and other sources of funding to provide more comprehensive approaches to financing clean technologies. The CPF also targets areas that have not been reached effectively by mechanisms in the past, such as energy efficiency and will pilot city-wide carbon finance programs.

The fundamental goal of the CPF is to help our partner countries utilize carbon finance to implement systematic approaches to low-carbon growth. To do this, our focus has to be on finding ways to support their policies and initiatives to catalyze public and private investment in clean technologies.





## CPF Status

The First Tranche of the Carbon Partnership Facility became operational on May 15, 2010. By the end of 2011, it had €132.5 million in commitments to the Carbon Fund and an additional €11 million in contributions to the Carbon Asset Development Fund.

The key objective of the First Tranche is to test the CPF model. The goal is to demonstrate the efficacy of using the CDM Programme of Activities approach on a large scale, linked to Bank operations that support partner country initiatives.

New approaches, such as city-wide programs, will be tested, and new CDM methodologies in areas of great potential for emission reductions, such as energy efficiency in buildings, will be developed. The aim is to generate emission reductions that will provide benefits to both Buyer and Seller Participants.

The longer-term vision is to use the CPF to innovate and scale up CDM modalities. The lessons learned from initial efforts on the First Tranche programs will set the stage for the Bank to make further constructive contributions to the design and implementation of future carbon market mechanisms.

## 2011 Participants

### Buyer Participants



GOVERNMENT OF SPAIN



ENDESA



E.ON



MINISTRY OF FINANCE

GOVERNMENT OF NORWAY



SWEDISH ENERGY AGENCY

### Seller Participants

FONDS D'EQUIPEMENT COMMUNAL OF MOROCCO

CAIXA ECONÔMICA FEDERAL OF BRAZIL

MINISTRY OF INDUSTRY AND TRADE OF VIETNAM

GREATER AMMAN MUNICIPALITY

PROVINCIAL ELECTRICITY AUTHORITY OF THAILAND

HEBEI GREEN AGRICULTURE COMPANY

TANZANIA RURAL ENERGY AGENCY

### Donors to the Carbon Asset Development Fund

GOVERNMENT OF SPAIN

GOVERNMENT OF NORWAY

GOVERNMENT OF ITALY

EUROPEAN COMMISSION

Host Country Partner

GOVERNMENT OF CHINA



## The Partnership for Market Readiness

Launched in December 2010, the Partnership for Market Readiness (PMR) is one of the World Bank's newer carbon market instruments focused on emissions reductions in emerging and developing economies. It brings together most of the world's key market players to create a global platform for discussions on new market instruments, including new crediting instruments and domestic emissions trading schemes. In little more than a year, PMR participants have demonstrated a strong appetite to learn from one another, to generate an open dialogue on lessons learned from previous successes and failures, and to work together on devising new market-based tools for GHG reduction.

The PMR Participants include Contributing Participants—those who provide financial support to the PMR trust fund—and Implementing Country Participants—those who receive funding. Together, they make up the PMR Partnership Assembly, the decision-making body of the PMR.

Participants include:

- **Contributing Participants:** Australia, Denmark, the European Commission, Germany, Japan, the Netherlands, Norway, Spain, Switzerland, the United Kingdom and the United States. These participants have pledged \$75 million to the PMR Trust Fund. Target capitalization is \$100 and fundraising is ongoing.
- **Implementing Country Participants:** Brazil, Chile, China, Colombia, Costa Rica, India, Indonesia, Jordan, Mexico, Morocco, South Africa, Thailand, Turkey, Ukraine and Vietnam.

The PMR is country-led. It provides systemic support to enhance Implementing Country Participants' technical and institutional capacities in order to implement market-based instruments, such as a domestic emissions trading scheme or a scaled-up crediting mechanism. As countries are at different stages of development and market readiness, each will approach the use of market instruments in a different way. Some will focus on building core "readiness" components, such as new systems for MRV, data collection, baseline setting, and establishing regulatory institutions; others will go further and pilot a domestic or international market-based scheme. Regardless of a country's choice, capacity building and piloting can have cross-cutting benefits relevant to implementing non-market based mitigation actions, designing low emissions development strategies, and identifying areas of low-cost mitigation potential.

Since it began operation, 10 of the 15 Implementing Country



Participants (Chile, China, Colombia, Costa Rica, Indonesia, Mexico, Morocco, Thailand, Turkey and Ukraine) have presented frameworks outlining anticipated PMR activities; each has received PMR Preparation Phase funding in the amount of \$350,000. The remaining five Implementing Country Participants are expected to present similar frameworks at the PMR's meeting in May 2012. Preparation Funding is used to identify capacity-building gaps and to prepare a roadmap for

implementing readiness components or a market instrument. This roadmap is known as the Market Readiness Proposal (MRP). Implementation Phase funding (in the amount of between \$3 million and \$8 million) is given following the successful submission of an MRP. A number of countries are expected to complete a draft MRP before the end of 2012.

President Robert Zoellick launches the Partnership for Market Readiness at COP 16 in Cancun.





## The Carbon Initiative for Development



The Carbon Initiative for Development (Ci-Dev) was launched in December 2011 and is focused on building capacity and developing tools and methodologies for supporting carbon market development in the poorest countries of the world, mainly in the area of energy access.

The Ci-Dev consists of a Readiness Fund, a Carbon Fund and a Financing Fund. The “buyer” Carbon Fund will facilitate the sale and purchase of the carbon credits created by the supported activities. The Readiness Fund will provide grants to help least developed countries (LDCs) build capacity and realize their potential in carbon market participation. The Financing Fund, an innovative approach to front-loading carbon revenues, will provide upfront financing for projects, a critical component for expanding carbon finance in poor countries.

## The Challenge

At a global level, the magnitude of development and climate change challenges facing the poorest countries is such that all financing sources, including carbon markets, must be harnessed. This was underscored, in the recent report from the UN Secretary-General’s High-level Advisory Group on Climate Change Financing. Energy poverty is a particularly relevant example. There are today about 1.4 billion people without access to electricity, 85% of whom are in rural areas. About 2.7 billion people are relying on the traditional use of biomass for cooking, which results in an estimated 1.45 million premature deaths each year due to indoor air pollution.

Achieving universal access to electricity by 2030 would require an additional annual average investment of \$36 billion.

At the same time, energy is the greatest contributor of greenhouse gas emissions worldwide. Poor countries are among the most vulnerable to climate change, underlying the importance of clean energy for increasing energy access and the role carbon finance can play by serving as a catalyst.

Carbon finance can also be used in other relevant sectors to support the sustainable development of poor countries with fast-growing populations. Waste management, energy efficiency for services like water, lighting, and transportation are relevant examples.

## Applying Lessons Learned

The World Bank has gained extensive experience in improving carbon market access for low-income countries. One example is the Community Development Carbon Fund, a fund created in 2003 with a specific focus on the poorest developing countries and on small-scale projects providing co-benefits to the poorest communities. These lessons learned from the World Bank’s experience will be applied to the implementation of the Ci-Dev.

Currently, World Bank Carbon Funds are supporting 59 CDM projects in IDA countries, with close to half of these in Africa.

#### Two main lessons can be drawn from this experience:

- Large-scale development of carbon finance in LDCs and other poor countries requires significant, or even radical, improvements in the CDM regulations and the development of new carbon finance mechanisms that take into consideration the capacity and needs of poor countries.
- Front-loading carbon revenues is key and will require innovative approaches and public support to mitigate the associated risks.

#### The Readiness Fund

The Ci-Dev Readiness Fund, aimed to be capitalized at \$20 million, will focus on enhancing existing and developing new carbon finance mechanisms, building capacity to undertake carbon finance transactions in the poorest countries and disseminating the lessons learned.

The Fund will contribute to ongoing efforts to reform the CDM. Through its on-the-ground work creating carbon assets for its various carbon funds, the World Bank has made significant contributions to capacity building, and to knowledge creation and dissemination of carbon finance initiatives—efforts which benefit the carbon finance community (“public good creation”) and can have a large leverage in terms of further opening carbon finance to these countries and communities. The technical work of the Readiness Fund will include:

- (IDA is the World Bank’s International Development Association, which provides concessional financing to some of the world poorest countries.)

- Supporting poor countries’ Designated National Authorities develop standardized baselines in such key areas as rural electrification, household energy access and energy efficiency.
- Ensure the crediting of low-carbon projects in energy poor countries by establishing “suppressed demand” accounting standards.
- Contributing proposals to further improve and extend the scope of the CDM towards new market mechanisms for use by the poorest countries.

#### The Financing Fund

A Financing Fund, aimed at a capitalization of \$50 million, will help project sponsors use future carbon revenues to contribute to closing the capital investment gap. Access to finance remains a key barrier to investment in the poorest countries—especially in sub-Saharan Africa—due to lack of capital, poorly developed financial markets, and other barriers to business activity.

These barriers compound well-documented obstacles to investment in clean technologies (including renewable energy generation), such as high upfront costs, lack of familiarity with the technology, and lack of adequate tariffs. Household clean energy programs, like cookstoves, solar home systems, and biogas digesters also require high upfront investments. Project owners have been mostly unable so far to monetize future carbon credits due to the high perceived risks associated with carbon finance.

The Financing Fund is under development and will be launched in 2012.



## The Carbon Fund

A Carbon Fund, aiming at a capitalization of \$50 million, will provide resources from buyers to project proponents for carbon asset creation in exchange for a right of first refusal to sign an ERPA forward contract once the project reaches validation. The Carbon Fund will initially target certified emission reductions in LDCs through the Clean Development Mechanism. It will broaden its geographical reach over time as new market mechanisms appear and become eligible for compliance markets.

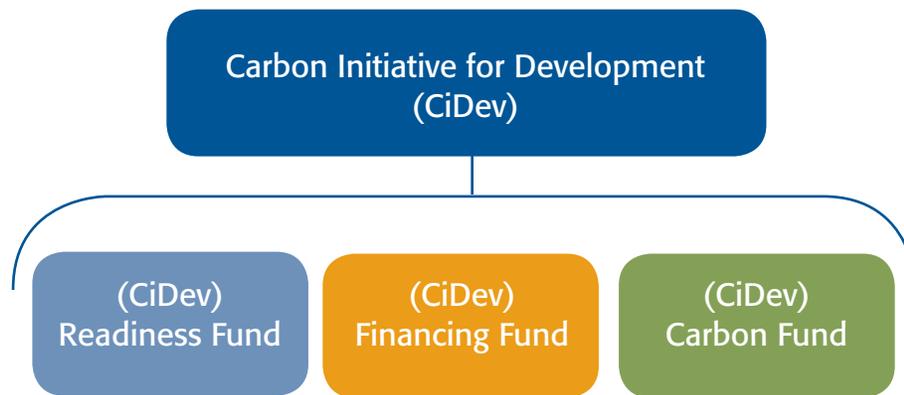
The Carbon Fund will support on-the-ground asset creation work, including financial and technical support for project design documents and validation. Once a project reaches a late stage in its validation process, but before it is registered by the UNFCCC or other regulatory body, an ERPA with buyers will be signed.

The Carbon Fund will offer access to market prices for sellers and a long-term purchase commitment.

## Potential for Operations

The following operations have been identified by the World Bank as potential projects where piloting and testing of the approaches would be applied:

- Household biogas in Nepal
- Household solar power in Bangladesh
- Energy efficiency in brick making in Bangladesh
- Cookstoves in Africa
- Municipal solid waste in Africa
- Renewable energy access in Mali





Carbon Finance  
AT THE WORLD BANK

## Who We Are



## Carbon Finance Glossary

### Assigned Amount Unit (AAU)

A Kyoto Protocol unit equal to one metric ton of carbon dioxide equivalent. Each Annex I Party issues AAUs up to the level of its assigned amount, established pursuant to Article 3, paragraphs 7 and 8, of the Kyoto Protocol. Assigned amount units may be exchanged through emissions trading.

### Adaptation

Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities; for example, the construction of flood walls to protect property from stronger storms and heavier precipitation, or the planting of agricultural crops and trees more suited to warmer temperatures and drier soil conditions.

### Afforestation

Planting of new forests on lands that historically have not contained forests.

### Annex I Parties

The countries listed in Annex I of the UNFCCC and in Annex B of the Kyoto Protocol.

### Avoided Deforestation

Preventing deforestation by compensating countries for carbon dioxide reductions realized by maintaining their forests.

### Biomass Fuel

Fuels produced from dry organic matter or combustible oils produced by plants. These fuels are considered renewable as long as the vegetation producing them is maintained or replanted, such as firewood, alcohol fermented from sugar and combustible oils extracted from soy beans. Their use in place of fossil fuels cuts greenhouse gas emissions because the plants that are their sources recapture carbon dioxide from the atmosphere.

### Cap-and-Trade System

An environmental policy tool that institutes a mandatory cap on emissions while providing emitters with flexibility on how they may comply. Successful cap-and-trade programs reward innovation, efficiency, and early action and provide strict environmental accountability without inhibiting economic growth.

### Carbon Asset

The potential of greenhouse gas emission reductions that a project is able to generate and sell.

### Carbon Credits

A permit that allows the holder to emit the equivalent of one metric tonne of CO<sub>2</sub>. Credits are awarded to countries or groups that have reduced their emissions below an assigned quota. Credits can be exchanged between businesses or bought and sold in international carbon markets at the prevailing market price.

### Carbon Finance

Resources provided to projects generating (or expected to generate) greenhouse gas emission reductions in the form of the purchase of such emission reductions.

### Carbon Market

A market created to buy and sell carbon credits. Under a regulated limit on carbon emissions (a "cap" on emissions), permits or allowances are given or auctioned to carbon emitters. Entities emitting below their cap may trade their extra allowances (carbon credits) to those who need additional capacity, creating a market for buying and selling carbon credits.

### Carbon Sequestration

The process of removing carbon from the atmosphere and depositing it in a reservoir.

### CDM Executive Board

A 10-member panel that supervises the Kyoto Protocol's CDM under the authority and guidance of the Conference of the Parties. The CDM Executive Board is the ultimate point of contact for CDM Project Participants for the registration of projects and the issuance of CERs.

### Certified Emission Reduction (CER)

A unit equal to one metric tonne of carbon dioxide equivalent, which may be used by Annex I parties towards meeting their binding emission reduction commitments under the Kyoto Protocol. CERs are issued for emission reductions from CDM project activities. Two special types of CERs (temporary CERs and long-term CERs) are issued for emission reductions from afforestation and reforestation CDM projects.

### **Clean Development Mechanism (CDM)**

A mechanism provided by Article 12 of the Kyoto Protocol, through which developed countries may finance greenhouse gas emission reduction projects in developing countries, and receive credits for doing so which they may apply toward meeting mandatory limits on their own emissions.

### **Clean Energy or Clean Technology**

Although there appears to be no strict definition, clean energy is any energy that causes little or no harm to the environment. Wind energy, solar energy (in all its forms—photovoltaic, geothermal, solar thermal, etc.), hydrogen and fuel cells, wave and tidal energy and biomass are all examples of clean energy.

### **Community Benefits**

Community benefits are identifiable and quantifiable improvements in the quality of life of a local group of people who are identified by the trustee and the project entity as in the vicinity of or affected by a project.

### **Countries with Economies in Transition**

Those Central and Eastern European countries and former republics of the Soviet Union in transition from state-controlled to market economies.

### **Designated National Authority (DNA)**

An office, ministry or other official entity appointed by a Party to the Kyoto Protocol to review and give national approval to projects proposed under the CDM.

### **Emission Reduction (ER)**

The measurable reduction of release of greenhouse gases into the atmosphere from a specified activity or over a specified area and a specified period of time.

### **Emission Reductions Purchase Agreement (ERPA)**

Agreement which governs the purchase and sale of emission reductions.

### **European Union Emissions Trading Scheme (EU ETS)**

In January 2005, the European Union Emissions Trading Scheme commenced operation as the largest multi-country, multi-sector greenhouse gas emissions trading scheme worldwide. The scheme is based on Directive 2003/87/EC, which entered into force on October 25, 2003.

### **Flexible Mechanisms**

Three procedures established under the Kyoto Protocol to increase the flexibility and reduce the costs of making greenhouse gas emissions cuts; they are the Clean Development Mechanism, International Emissions Trading and Joint Implementation.

### **Greenhouse Gases (GHGs)**

The atmospheric gases responsible for causing global warming and climate change. Six gases are listed in Annex A of the Kyoto Protocol. The major greenhouse gases are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O). Less prevalent—but very powerful—are hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF<sub>6</sub>).

### **Green Investment Scheme (GIS)**

A financing mechanism in which the proceeds from emissions trading under the Kyoto Protocol are reinvested in projects in the host country's economy with the objective of further reducing emissions.

### **HFC-23 (trifluoromethane)**

Greenhouse gas that has 11,700 times the global warming potential of carbon dioxide and is a by-product in the manufacturing process of HCFC-22, used in air conditioning, refrigeration and as a feedstock.

### **International Development Association (IDA)**

One of the five institutions composing the World Bank Group, which focuses exclusively on the world's poorest countries.

### **Joint Implementation (JI)**

A mechanism under the Kyoto Protocol through which a developed country can receive "emission reduction units" when it helps to finance projects that reduce net greenhouse gas emissions in another developed country (in practice, the recipient state is likely to be a country with an "economy in transition"). An Annex I Party must meet specific eligibility requirements to participate in Joint Implementation.

### **Kyoto Protocol**

An international agreement standing on its own, and requiring separate ratification by governments, but linked to the UNFCCC. The Kyoto Protocol, among other things, sets binding targets for the reduction of greenhouse gas emissions by industrialized countries. It entered into force on February 16, 2005.



### **Land Use, Land-Use Change and Forestry (LULUCF)**

A greenhouse gas inventory sector that covers emissions and removal of greenhouse gases resulting from direct human-induced land use, land-use change and forestry activities. Expanding forests reduce atmospheric carbon dioxide; deforestation releases additional carbon dioxide; various agricultural activities may add to atmospheric levels of methane and nitrous oxide.

### **Least Developed Countries (LDCs)**

The world's poorest countries. Least developed countries are countries (i) listed in the World Bank's IDA list of countries; (ii) countries commonly referred to as "IDA blend," with a population of less than 75 million; or (iii) countries designated as least developed countries by the United Nations.

### **Mitigation**

In the context of climate change, a human intervention to reduce the sources or enhance the sinks of greenhouse gases. Examples include using fossil fuels more efficiently for industrial processes or electricity generation, switching to solar energy or wind power, improving the insulation of buildings and expanding forests and other "sinks" to remove greater amounts of carbon dioxide from the atmosphere.

### **Programme of Activities (PoA)**

Emission reductions that are achieved by multiple verifiable activities executed over time as a direct response to a government measure or private sector initiative. Programmes typically result in a multitude of greenhouse gas-reducing activities in multiple sites over the life of the programme.

### **Reforestation**

Replanting of forests on land that was previously forested but subsequently converted to other use.

### **Small-scale Projects**

Projects that are compatible with the definition of "Small-scale CDM Project Activities" set out in decision 17/CP.7 by the Conference of Parties to the UNFCCC.

### **Sustainable Development**

Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.

### **Tonne of Carbon Dioxide Equivalent (tCO<sub>2</sub>e)**

The universal unit of measurement used to indicate the global warming potential of each of the six greenhouse gases. Carbon dioxide—a naturally occurring gas that is a byproduct of burning fossil fuels and biomass, land-use changes and other industrial processes—is the reference gas against which the other greenhouse gases are measured.

### **Tranche**

The Spanish Carbon Fund, the BioCarbon Fund, and the Umbrella Carbon Fund consist of tranches. For example, the BioCarbon Fund's first tranche supports a wide variety of land use, land-use change and forestry projects, some providing emission reductions potentially eligible for credit under the Kyoto Protocol, and some that explore options for carbon credits that achieve them by activities other than afforestation and reforestation and therefore not eligible for Kyoto credits in the first commitment period. Depending on the interests of contributors, various additional tranches may be opened, each one with a specific focus, which could be sectoral or geographic.

### **United Nations Framework Convention on Climate Change (UNFCCC)**

The international legal framework adopted in June 1992 at the Rio Earth Summit to address climate change. It commits the Parties to the UNFCCC to stabilize human-induced greenhouse gas emissions at levels that would prevent dangerous man-made interference with the climate system. In December 1997, the Parties to the UNFCCC adopted the Kyoto Protocol. In February 2005, the Kyoto Protocol entered into force thus becoming a legally binding instrument.

### **Voluntary Carbon Market**

The unregulated market which allows individuals, companies and organizations to purchase emission reduction credits to offset the emissions they produce.









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