



WORLD BANK CARBON FINANCE UNIT CARBON PARTNERSHIP FACILITY

OPERATION OF THE FACILITY

Building a solid portfolio

Growing from an early trailblazer, the World Bank Carbon Finance Unit has built a mature portfolio while continuing to pioneer new products.

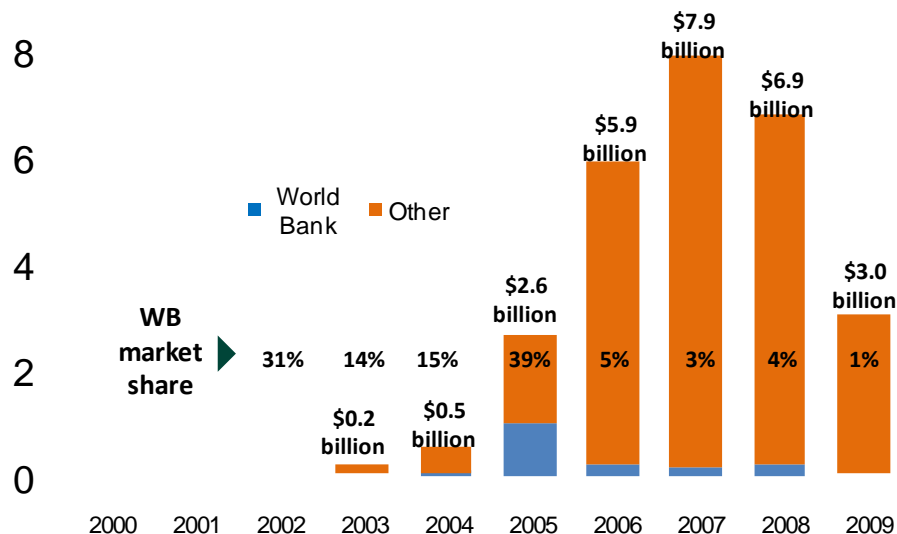
Growth of carbon funds

- ◆ “Crowding-in” of the private sector – the World Bank catalyzes markets and pioneers new products.
- ◆ The World Bank’s extended carbon finance family is large – 82 governments and private sector companies – together account for **28% of all CDM projects**.⁺

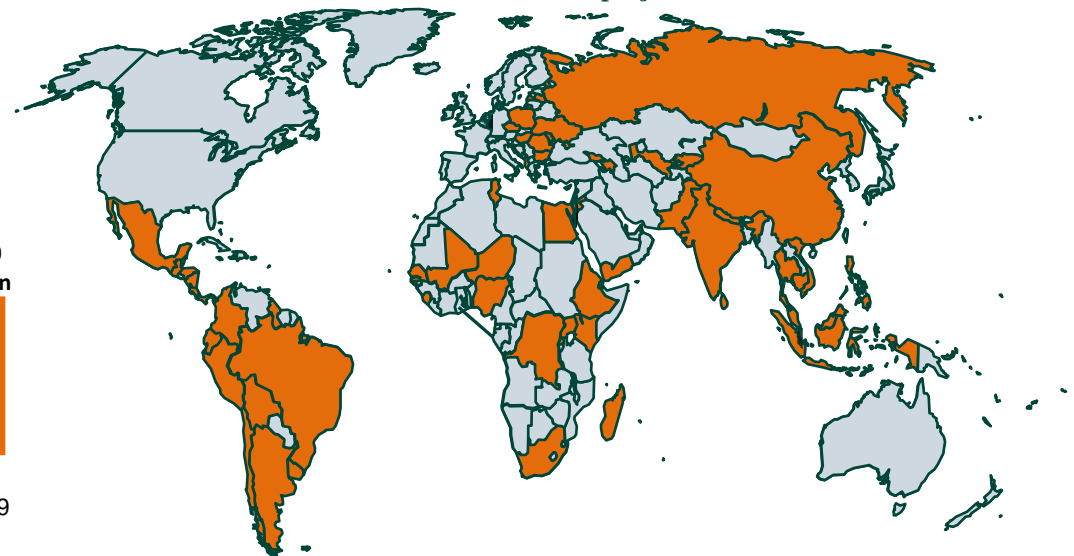
Global diverse experience

- ◆ The World Bank’s carbon funds are developing projects in 57 countries – for many their first carbon finance project.
- ◆ The World Bank is also a leader in forest carbon development and active in many cutting-edge CDM technology types and programs of activities.

Value of CDM & JI Transactions (per year)
(US\$ billion)**



World Bank active projects



The Carbon Finance Unit's first generation of carbon funds



<p>April 2000</p>  <p>Prototype Carbon Fund</p> <p>World's First Global Carbon Fund</p> <p>\$220,000,000</p>	<p>May 2002</p>  <p>Netherlands Clean Development Mechanism Facility</p> <p>Pioneer purchaser of CDM</p> <p>**</p>	<p>March 2003</p>  <p>Community Development Carbon Fund</p> <p>Poorest country focused</p> <p>\$128,600,000</p>	<p>March 2004</p>  <p>Italian Carbon Fund</p> <p>Government & private sector</p> <p>\$155,600,000</p>	<p>May 2004</p>  <p>BioCarbon Fund Tranches I & II</p> <p>Afforestation, Reforestation, REDD+ & soil carbon</p> <p>\$90,400,000</p>
<p>August 2004</p>  <p>Netherlands European Carbon Facility</p> <p>Purchasing JI</p> <p>**</p>	<p>January 2005</p>  <p>Danish Carbon Fund</p> <p>Government & private sector</p> <p>€90,000,000</p>	<p>March 2005</p>  <p>Spanish Carbon Fund</p> <p>Government & private sector</p> <p>€220,000,000</p>	<p>August 2006</p>  <p>Umbrella Carbon Facility Tranches I & II</p> <p>Adding liquidity to market at key moments</p> <p>€904,100,000</p>	<p>March 2007</p>  <p>Carbon Fund for Europe</p> <p>Governments & private sector</p> <p>€50,000,000</p>

** Unpublished



The World Bank has established public-private partnerships to pioneer carbon markets



Public sector partners



Private sector partners



The Carbon Partnership Facility

A fund to scale up investment in clean technology through programmatic and sector-based approaches

Mission

- ◆ Support systematic approaches to low carbon growth by countries to catalyze investment in clean technologies
- ◆ The governance of the CPF is based on a partnership of buyers and sellers of carbon credits
- ◆ CPF utilizes programmatic modalities to scale up emission reduction programs beyond project by project approach
- ◆ Carbon finance included in integrated financing packages linked to Bank operations
- ◆ Develop innovative methodologies in areas such as energy efficiency and city-wide programs; and promote the introduction of new technologies

Participation

- ◆ € 99 million in Buyer commitments to Carbon Fund
- ◆ Agreements signed with Seller Participants:
 - Morocco Solid Waste Management
 - Vietnam Renewable Energy
 - Brazil Solid Waste Management
 - Amman Green Growth (City-wide approach)
 - Thailand Clean Energy
 - China Hebei Regional Farm Biogas
 - Tanzania Renewable Energy Program
 - Egypt Vehicle Scrapping and Recycling
 - Philippines Animal Waste and Landfill Gas
- ◆ € 11 million in donor contributions in Carbon Asset Development Fund (for program preparation and implementation; methodology development)

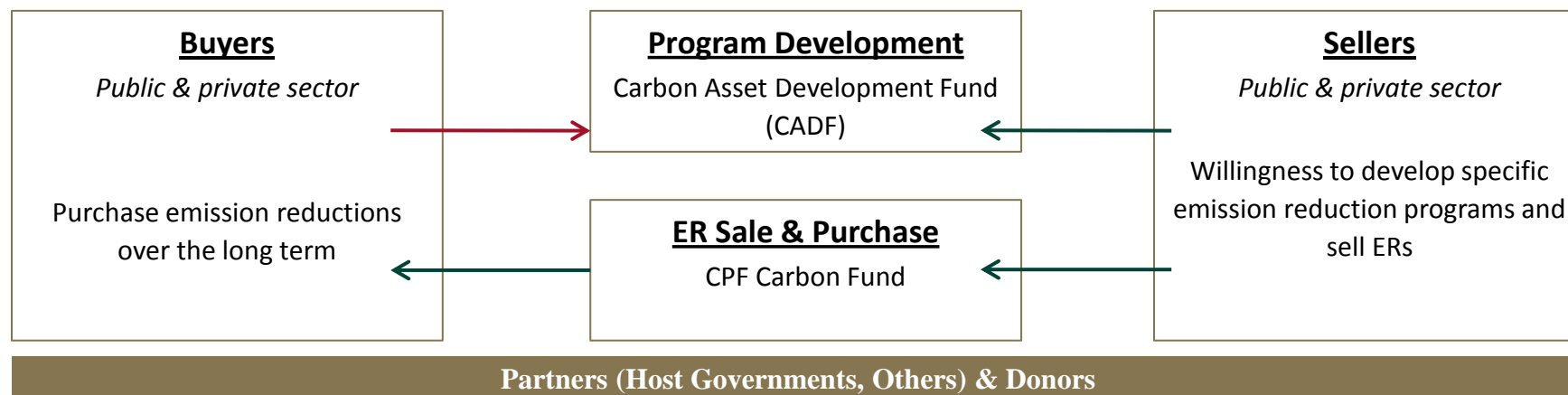
Governance/Participants

Governance

- ◆ The CPF is a partnership of Buyer and Seller Participants, also includes Donors and Host Country Partners
- ◆ Partnership Committee is comprised of an equal number of Buyers and Sellers and makes decisions on key policies
- ◆ All Participants are entitled to attend and to participate in Partnership Committee meetings
- ◆ Decisions on programs to include in the First Tranche portfolio are made by Buyers

Participants

- ◆ **Buyer Participants:** Governments of Spain, Norway and Sweden
- ◆ **Seller Participants:** Caixa Economica (Brazil), Ministry of Industry and Trade (Vietnam), Fonds D'équipement Communal (Morocco), Greater Amman Municipality; Provincial Electricity Authority (Thailand), Hebei Green Agriculture Co. (China), Rural Electricity Agency (Tanzania); Ministry of Finance (Egypt), Land Bank of the Philippines
- ◆ **Donors:** Governments of Spain, Norway, Italy; European Commission
- ◆ **Host Country Partner:** NDRC (China)



Brazil Solid Waste Management Program

Program Highlights

- ◆ **Objective:** Enable public entities to access carbon markets through innovative financing packages in the SWM sector. Reduce environmental and social impacts and GHG emissions from the solid waste management sector.
- ◆ **Strategic Relevance:** The program is linked to a World Bank loan to Brazil to support the implementation of a law on national solid waste policy that was enacted in 2010 to upgrade landfill practices.
- ◆ **Program Overview:**
 - **PoA Type:** Land Fill gas Methane capture and use (flaring, electricity generation)
 - **Contract Volume:** 3 million tCO₂e in ER Volume + 2 million tCO₂e in Options
 - **Methodology:** ACM0001: Consolidated baseline and monitoring methodology for landfill gas project activities --- Version 11.0
 - **World Bank Operations/Safeguards:** World Bank loan to Caixa to finance landfill upgrading; Caixa lending to landfill operators collateralized with carbon finance revenues. Pilot program for use of Country Systems for safeguards assessment.
- ◆ **Scaling up Potential:** The program could eventually be extended to municipalities throughout Brazil.
- ◆ **Coordinating and Managing Entity (CME):** Caixa Economica Federal , a major public sector development bank.

Program Highlights

- ◆ **Objective:** The objective of the Program is to increase the supply of electricity to the national grid from renewable energy sources on a commercially, environmentally and socially sustainable basis
- ◆ **Strategic Relevance:** The Program is strategically aligned with Vietnam Socio-Economic Development Plans (SEDP) 2006 – 2010 and 2011 - 2015, Renewable Energy Action Plan (REAP), as well as the World Bank Group Country Partnership Strategy for Vietnam
- ◆ **Program Overview:**
 - Development of 20 – 25 small hydropower projects (CPAs) with total installed capacity of around 250 MW
 - REDP World Bank Credits (US\$ 202 mil) are available through financial intermediaries
 - Carbon Finance has been an integral part of the Program design.
 - Contract volume of three million tCO₂e from 2013-2020
- ◆ **Scaling up potential:** The project represents around 9 % of total potential small hydropower in Vietnam which is estimated to be around 2,900 MW which could generate more than 6 million tCO₂e of GHG emission reductions, annually
- ◆ **Coordinating and Managing Entity (C/ME):** Ministry of Industry and Trade is the main counterpart of the Bank loan and also serves as C/ME

Program Highlights

- ◆ **Objective:** The objective of the Program of Activities is to reduce greenhouse gas emissions (methane and carbon dioxide) through flaring and/or use of landfill gas for energy generation.
- ◆ **Strategic Relevance:** The Program is strategically linked to two development policy loans granted by the World Bank to the Moroccan government as part of a national program to modernize the sector. The two loans are well aligned with the World Bank Group Country Partnership Strategy for Morocco.
- ◆ **Program Overview:**
 - Development of 8-10 landfill gas management projects (CPAs) for flaring of CH₄ or use for energy generation
 - CPAs are implemented and financed by private sector operators, and are included in the contracts with municipalities
 - Carbon Finance has been an integral part of the Program design.
 - Contract volume of 4.5 million tCO₂e from 2012-2020
- ◆ **Scaling up potential:** The program targets the main urban areas of Morocco and medium-size cities as well.
- ◆ **Coordinating and Managing Entity (C/ME):** Fonds d'Equipement Communal, the main Moroccan local development bank (public entity)

Program Highlights

- ◆ **Objective:** Reduce energy consumption for highway street lighting.
- ◆ **Strategic Relevance:** The Program is strategically aligned with Thailand National Economic and Social Development Plan 2007-2011, Alternative Energy Development Plan 2008-2022, as well as the World Bank Group Country Partnership Strategy for Thailand
- ◆ **Program Overview:**
 - Energy Efficiency (EE) of National Highway Street Lighting Program : Replacement of up to 500,000 High Pressure Lamps with LED lamps
 - Carbon Finance has been an integral part of the Program design
 - Contract volume of 825 thousand tCO₂e from 2013-2020
- ◆ **Scaling up potential:** The project could be extended to cover highway street lighting on a nation-wide basis
- ◆ **Coordinating and Managing Entity (C/ME):** Provincial Electricity Authority (PEA)

Program Highlights

- ◆ **Objective:** Expand coverage of rural electrification in Tanzania, by promoting both off-grid and on-grid renewable energy projects
- ◆ **Strategic Relevance:** The Program is strategically aligned with Tanzania's Energy Sector Policy. The Government has set up Rural Energy Agency (REA) to promote rural electrification in the country
- ◆ **Program Overview:**
 - Development of 10-12 small hydropower projects (CPAs) with total installed capacity of around 100 MW
 - IDA Line of Credit – long term financing through local banks
 - Preparation Grant – financing upfront project preparation cost
 - Connection grant – a form of capital subsidy (depending upon the number of rural connections provided)
 - Carbon Finance - bridging part of equity gap
 - Contract volume of about 850,000 tCO₂e from 2014-2020
- ◆ **Scaling up potential:** Tanzania has abundant renewable resources, with significant scaling up potential
- ◆ **Coordinating and Managing Entity (C/ME):** The Rural Energy Agency (REA), the main counterpart of the IDA project

Program Highlights

- ◆ **Objective:** The purpose of the PoA is to support the enforcement of Traffic Law #121 (2008) to accelerate the rate of fleet replacement, thereby improving air quality, reducing greenhouse gas emissions, and improving overall road safety in Egypt.
- ◆ **Program Overview:**
 - Egypt's MOF is authorized to disburse a subsidy of up to EGP 5,000 (= USD 750) per eligible surrendered vehicle.
 - Almost 41,000 taxis have joined the program as of November 30, 2012 in Greater Cairo Region. More vehicles are expected to join the POA as a new phase has started in March 2013.
 - Carbon finance plays an important role in ensuring sustainability of the program by providing support for implementing and monitoring the program.
 - The expected emission reductions are 470,000 CERs from 2013 to 2018.
- ◆ **Scaling up potential:** The program can be extended to cover a wider geographical area in Egypt and target minibuses as well as taxis
- ◆ **Coordinating and Managing Entity (C/ME):** Ministry of Finance

Program Highlights

- ◆ **Objective:** Reduce environmental and social impacts and GHG emissions from the animal waste from piggeries
- ◆ **Strategic Relevance:** The program is part of the Philippine government's efforts to improve environmental management of piggeries, reduce GHG emissions and reduce reliance on fossil fuels
- ◆ **Program Overview:**
 - The waste produced from the participating pig farms will be treated in an enclosed anaerobic system that will prevent the release of methane. The methane will then be flared and/or combusted for electricity generation, reducing the use of fossil fuels.
 - The first two CPAs (Marcela and Biotech) included/under inclusion process and three to five (3-5) additional bundles, representing 28 farms with potential for inclusion
 - LBP will provide carbon finance and investment finance assistance; US EPA providing technology and training
 - Potential to reduce more than 2.5 millions tons of GHG emissions between 2013 and 2020
- **Scaling up potential:** In the long-term, program scale-up is expected as the livestock sector is eyed to be export-competitive within the ASEAN region in 2015.
- ◆ **Coordinating and Managing Entity (C/ME):** Land Bank of the Philippines (LBP)

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Program Highlights

- ◆ **Objective:** Reduce environmental and social impacts and GHG emissions from the solid waste management sector.
- ◆ **Strategic Relevance:** Philippine Ecological Solid Waste Management Act of 2000 and RA 9003 requires sanitary landfills with more than 0.5 million tons of waste to have gas control systems (or consider a landfill gas to energy (LFGTE) facility), if economically viable.
- ◆ **Program Overview:**
 - PoA will promote the implementation of RA 9003 by providing CDM revenue to help cover costs of installation and operation of landfill gas recovery and flaring or electricity generation systems..
 - LBP will provide carbon finance and investment finance assistance for the installation of LFG collection systems
 - The first CPA: Bulacan Engineered Sanitary landfill
 - Potential to reduce more than 2.5 millions tons of GHG emissions between 2013 and 2020
- **Scaling up potential:** The program can help promote the closure of many existing dumpsites with the added incentive of CDM revenue from reduced methane emissions. The program will also provide a valuable incentive for new landfills, which replace dumpsites, to comply with RA 9003 throughout the Philippines.
- **Coordinating and Managing Entity (C/ME):** Land Bank of the Philippines (LBP)

Future Directions for CPF

- ◆ Objective of first set of programs has been to demonstrate the efficacy of using Program of Activities approach to scale up emission reductions
- ◆ Key objective of CPF is to continue to innovate in developing programmatic carbon market mechanisms
- ◆ The UNFCCC negotiations have created the prospect for a “new market mechanism” (NMM) and a “Framework for Various Approaches”
- ◆ The CPF is the ideal instrument for piloting new scaled-up crediting mechanisms