

# INTRODUCTION FROM THE MANAGERS



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ustainable development to fight poverty and finance for climate action are inextricably linked. This is particularly true in our most vulnerable client countries, where the poorest are most impacted by climate change. Meeting the climate financing commitments to mobilize \$100 billion a year by 2020 is a tremendous challenge. And even that is not enough.

At the World Bank Group, mobilizing climate finance is at the top of our agenda. The decisions taken now on how to use scarce public resources and leverage financing and action from others will lay the foundation for climate action for decades to come.

Within the broader climate agenda of the World Bank Group, we have been working in carbon markets for well over a decade. We have launched 18 carbon initiatives that have mobilized both public and private funds to lower greenhouse gas emissions through technical advisory services and about 145 mitigation projects across the world. As we move toward scaled-up national mitigation efforts and a network of carbon markets, we build on the lessons learned along the way.

In 2014, the World Bank Group's support for carbon markets grew, and several new innovative financial products were launched. In the course of 2014, verbal pledges and commitments were made to the tune of \$300 million. By the end of the year, the total fund allocation had reached almost \$3 billion.

The next generation of carbon markets faces many challenges, including the lack of a global climate agreement and a pervasive low price on carbon. At the World Bank Group, we continue to support and develop instruments that

provide client countries with opportunities to pursue a low emissions development pathway. These include innovative financial products that can help countries convert mitigation and sequestration outcomes into much needed financing. Such instruments include the Carbon Partnership Facility, created to scale up emission reductions programs, and the Carbon **Initiative for Development**, which supports innovative and transformative business models that facilitate low-carbon energy access projects in least developed countries (mainly Africa).

The World Bank Group's most recently launched climate finance initiative, the Pilot Auction Facility for Methane and Climate Change Mitigation, will support private sector investment initially in methane abatement projects by setting a floor price for future carbon credits via an auction, thus creating a predictable revenue stream.

Furthermore, two of our carbon initiatives are supporting sustainable landscape management: the Forest Carbon Partnership Facility and the BioCarbon Fund's Initiative for Sustainable Forest Landscapes. These funds continue to pioneer work in more than 50 countries to ensure that both countries and private sector actors adopt integrated solutions that support sustainable landscapes, climate-smart land use, and green supply chains. Both funds had a significant year, with over a dozen countries entering their carbon fund pipelines, each submitting proposals to address reducing emissions from deforestation at the subnational level and, in time, becoming eligible for large-scale, results-based finance transactions.

We also continue to provide advisory services to support countries with their carbon

pricing efforts. The Partnership for Market Readiness brings together 30 of the world's major emitters—representing over 80 percent of global emissions—and helps those in developing countries design and implement domestic efforts to reduce emissions, whether through market-based mechanisms or taxes.

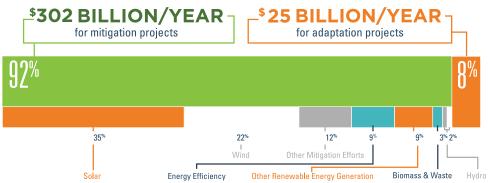
As countries implement their choice of carbon pricing, we will continue to play an important role in catalyzing the transition from preparing for market-based carbon pricing approaches to piloting their implementation. In addition to the initiatives and financial products already mentioned, this also involves discussions on a facility that will help convert outcomes from scaled-up crediting mechanisms—or large-scale approaches to emission reductions, including those induced through the policy measures of the host country—into much needed development cash.

As various countries develop heterogeneous approaches to carbon pricing that best suit their development needs, it will be important to avoid fragmentation of future carbon markets. The World Bank Group's Networked Carbon Markets initiative is looking ahead to see what institutions and services will likely be needed to ensure fungibility and liquidity in an international carbon market with a long-term, transparent, and robust price on carbon.

Such technical support and financial products can ultimately be meaningful only if they have political support. In 2014, the Carbon Pricing **Leadership Coalition** was launched to rally governments, private sector, and civil society behind putting a price on carbon and bending the arc of greenhouse gas emissions.

Carbon finance explores the financial implications of living in a carbon-constrained world, a world in which emissions of CO, and other GHGs carry a price. Climate finance refers to financing channeled by private sector as well as national, regional, and international entities for climate change mitigation and adaptation projects and programs.





# PUBLIC CLIMATE FINANCE

Development banks are providing more than

# \$100 BILLION

for clean energy each year





The CIF leverages



Wealthy countries have committed to provide \$100 BILLION A YEAR BY 2020

# BUT PUBLIC MONEY ALONE IS NOT ENOUGH

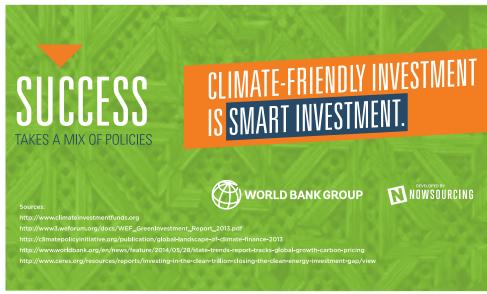


IS STEPPING UP

INVESTORS & ASSET MANAGERS
ARE EMPHASIZING SUSTAINABILITY
and shifting their portfolio from brown to green



\$11 BILLION in 2013 \$33 BILLION in the first ten months of 2014



Source: This infographic was published by the World Bank Group on September 5, 2014, and adjusted for this report based on data from 2013.

# OVERVIEW: NEXT GENERATION CARBON MARKET INITIATIVES

The World Bank Group (WBG) has taken the lead in shaping the next generation carbon initiatives for the post-2012 period by developing new approaches to performance-based payments and piloting carbon instruments.

In its portfolio, the WBG has six different carbon initiatives that aim to scale up emission reductions (ERs), build readiness for

domestic carbon pricing plans, use auctions to put a price on carbon, increase access to energy in least developed countries (LDCs), and reduce emissions from deforestation and forest degradation. These carbon initiatives had a total fund allocation of \$1.6 billion as of December 31, 2014, and commitments totaled close to \$275 million in 2014.



#### **Carbon Partnership Facility**

Tranche 1 of the Carbon Partnership Facility (CPF) became operational in May 2010 and the CPF's Carbon Asset Development Fund became operational in January 2009. The CPF uses scaled-up, programmatic approaches to enable carbon finance to support partner country initiatives aimed at moving toward low-carbon economies. It targets such areas as renewable energy, energy efficiency, and waste management.

Facility Capital <sup>1</sup>	\$142 million*
Date Operational	May 2010
Participants	10**

<sup>\*</sup> Note that the reduction in fund capital from last year's \$165 million merely reflects an exchange rate adjustment.



#### Partnership for Market Readiness

The Partnership for Market Readiness (PMR) was launched in December 2010 and includes more than 30 countries. PMR supports market readiness capacity building, promotes market instruments, and provides a platform for sharing knowledge and experiences. It is a country-led initiative that builds on individual countries' mitigation priorities.

Facility Capital	\$127 million
Date Operational	April 2011
Participants	33



#### Forest Carbon Partnership Facility

The Forest Carbon Partnership Facility (FCPF) was launched in 2008 and focuses 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 demonstrates how REDD+ can be applied at the country level.

Facility Capital	\$828 million	
Date Operational	June 2008	
Participants	64*	

<sup>\* 17</sup> financial contributors and 47 REDD+ participants.



#### Carbon Initiative for Development

The Carbon Initiative for Development (Ci-Dev) was launched in December 2011 to increase access to low-carbon energy in the world's poorest countries by offering carbonlinked results-based finance (RBF) using the CDM. Ci-Dev supports initiatives that deliver strong development benefits in LDCs, using performance payments based on ERs while building capacity and developing tools and methodologies to help the poorest countries access carbon finance.

Facility Capital	\$123 million
Date Operational	April 2014
Participants	4



#### **Pilot Auction Facility for Methane and** Climate Change Mitigation

In 2014, the Pilot Auction Facility for Methane and Climate Change Mitigation (PAF) was launched. PAF is an innovative climate finance model to stimulate investments in projects that reduce GHG emissions—initially only methane—while maximizing the impact of public funds and leveraging private sector financing. It uses auctions to set a floor price for future carbon credits.

Facility Capital	\$18 million*
Date Operational	Novemberl 2014
Participants	1

<sup>\*</sup> As of December 31, 2014, both pledges and contributions totaled \$53 million



#### **BioCF** Initiative for Sustainable Forest Landscapes

The BioCF Initiative for Sustainable Forest Landscapes (ISFL) was launched in December 2011 and aims to create a portfolio of programs that promote sustainable agriculture, forestry, and smarter land-use practices in an integrated way. ISFL programs cover a variety of geographies and transform large rural areas by protecting natural forests, restoring degraded lands, and enhancing agricultural productivity, using RBF to incentivize changes at the landscape level.

Facility Capital	\$361 million
Date Operational	November 2013
Participants	6

<sup>\*\*</sup> Three buyer participants and seven seller participants.

<sup>&</sup>lt;sup>1</sup> This year's facility capital includes legal commitments. Previous years included both pledges and legal commitments

## KYOTO FUNDS AND FACILITIES

The WBG launched the first global carbon fund, the Prototype Carbon Fund, in April 2000. In the following seven years, another 11 Kyoto Funds and Facilities were launched at the World Bank Group to pioneer a full range of flexibility mechanisms.<sup>2</sup> The first generation of carbon funds successfully harnessed private sector funding, amounting to 56 percent of total capital contributions.

By the end of 2014, the Kyoto Funds and Facilities had delivered 196 million tCO<sub>2</sub>e, reaping the fruits of their work over the past decade. This figure includes ERs of 5 million tCO<sub>2</sub>e that were generated by the IFC funds, which are included in this report now that carbon finance activities across the WBG have been merged. This also

increased the number of participants.

In 2014, the Netherlands European Carbon Facility fulfilled its mandate to its facility participants and was closed. The Kyoto Funds and Facilities' success is now informing the GCCCF in preparing and piloting the next generation of carbon finance initiatives.

Peak Capitalization	\$2.76 billion
Date Operational	April 2000
Participants	74
Private Capital Invested	56%

<sup>&</sup>lt;sup>2</sup> Flexibility mechanisms, mechanisms defined under the Kyoto Protocol, such as the Clean Development Mechanism (CDM), Joint Implementation (JI), or emissions trading, intended to lower the overall costs of achieving its emissions targets.



Prototype Carbon Fund



**CDCF** Community Development Carbon Fund



Netherlands Clean Development Mechanism Facility



BioCarbon Fund



Danish Carbon Fund



Italian Carbon Fund



Netherlands European Carbon Facility



Spanish Carbon Fund



**Umbrella Carbon Facility** 



Carbon Fund for Europe



IFC Post-2012 Carbon Facility



IFC-Netherlands European Carbon Facility



# STATE AND TRENDS OF CARBON PRICING

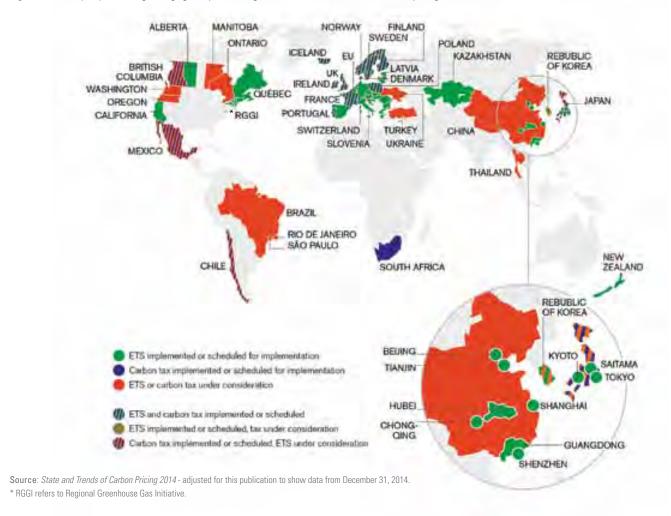
2014

WARMEST YEAR ON RECORD

The **State and Trends of** Carbon Pricing 2015 report will be launched in October 2015. A preview of the report, the **Carbon Price Watch**, will be released at Carbon Expo in May 2015.

Significant progress has been made over the last 10 years in establishing national and subnational carbon pricing schemes. About 40 national and over 20 subnational jurisdictions are putting a price on carbon. Together, these carbon pricing instruments cover 7 GtCO<sub>2</sub>e or about 12 percent of the annual global GHG emissions, which represents a threefold increase over the past decade. The total value of the Emissions Trading Scheme (ETS) and carbon tax markets is estimated to be \$50 billion in 2015.

Figure 1: Summary map of existing, emerging, and potential regional, national, and sub-national carbon pricing schemes (ETS and tax)



#### Developments in 2014

Notable developments in 2014 include the implementation of carbon taxes in France and Mexico, and the passing of legislation for a carbon tax in Chile. In addition, two new carbon pricing mechanisms entered into force on January 1, 2015: the Korean ETS and Portugal's carbon tax.

As new carbon pricing instruments emerge, existing national and regional carbon pricing instruments have continued to develop. Structural reform to improve market stability was the top priority of the European Union (EU) ETS agenda, with the debate on the market stability reserve reaching a consensus on a 2019 start date.

In addition, California and Québec successfully linked their ETSs and expanded their GHG coverage, while China's seven pilot schemes expanded in scope. China continued preparing for a national ETS, and explored possibilities of cooperation with other regions.

Some setbacks in 2014 include the repeal of Australia's carbon pricing mechanism

and the delay in linking the Swiss and EU ETS. Allocation modalities of allowances within ETS and spending of carbon pricing revenues were topics of increasing importance in the carbon pricing discourse.

The prices in these existing carbon pricing instruments are diverse and varied. Prices are a reflection of the national or regional context of the instrument. They have shown little movement over the last year and most of the emissions are priced at a rather low level. Governments commonly use funds raised through carbon taxes and the sale of allowances in ETSs to lower other taxes on businesses and households or to finance emission mitigation projects. In 2014, over \$15 billion in government revenue was raised in this manner—50 percent higher than the \$10.2 billion currently pledged to the Green Climate Fund.

#### International Carbon Pricing

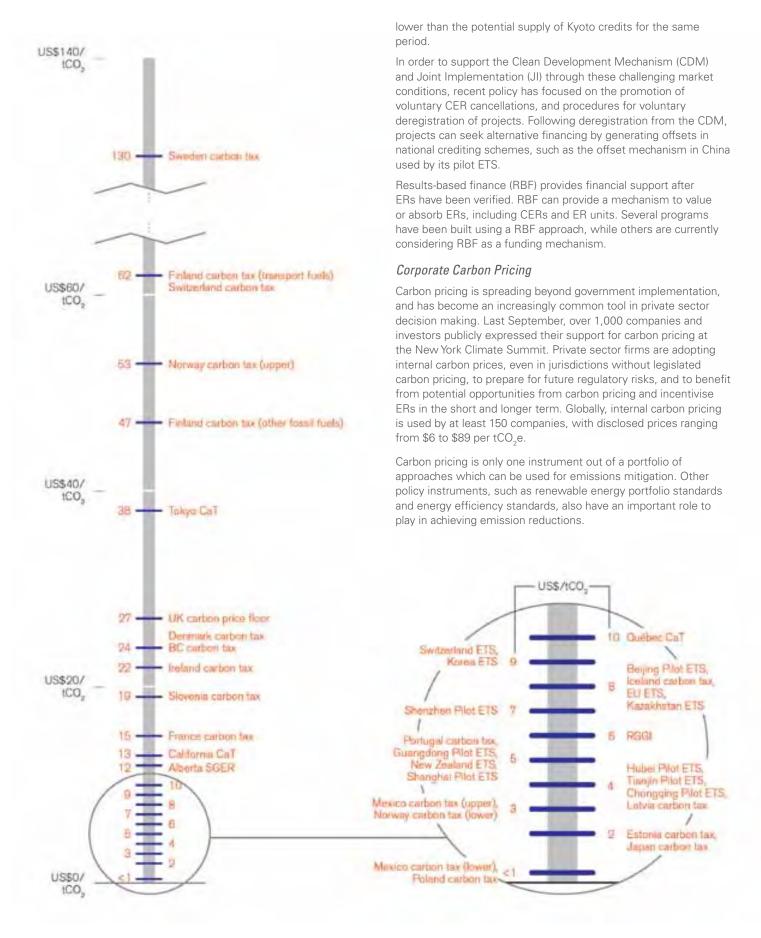
Despite progress on the national and subnational level, the world is still waiting for a break-through at the international level. The key objectives of the Conference of the

Parties (COP) 20 in Lima, Peru in December 2014, were to decide on what information is required in the Intended Nationally Determined Contribution (INDC) documents and to consider the elements of the draft negotiation text in preparation for COP21 in Paris. On both fronts, progress was limited and the lack of pre-2020 ambition remains an issue. The agreement reached in Lima on INDCs was not as ambitious as some had hoped for, as it made a series of recommendations rather than detailing requirements for the contents of the INDCs. It is likely that the ambition level of INDCs will need to be revised following COP21 in order to limit global warming to 2°C. Furthermore, the Doha amendment to the Kyoto Protocol is currently not legally binding, since to date it has been ratified by only 28 Parties out of the required 144.

#### Kyoto Credits and Results-Based Finance

The market trend for Kyoto credits (Certified Emission Reductions (CERs) and Emission Reduction Units) continued downward in 2014. Total residual demand between 2015 and 2020 is expected to be substantially

Figure 2: Prices in existing carbon pricing schemes





# NEW APPROACHES IN CARBON FINANCE

The World Bank Group (WBG) creates and pilots innovative financial products that find new ways to put a price on carbon and make financing for climate change action available to client countries. Thinking outside the box is instrumental to addressing the climate change

challenge. The WBG continues to develop carbon and climate finance solutions and to offer technical assistance to developing countries as they explore their options and develop mechanisms that can bring mitigation to scale.

This section provides an

overview of various efforts within the institution centered on carbon pricing and presents a selection of six new climate and carbon finance approaches developed in 2014 at the WBG.

#### MAKING THE CASE AND EVIDENCE FOR CARBON PRICING

• Carbon Pricing Leadership Coalition • State and Trends of Carbon Pricing reports

## PLANNING. **DESIGN**

*Innovating and building* 



## IMPLEMENTATION, **SCALE-UP**

Enabling scale-up of carbon pricing efforts for a meaningful price on carbon

- Carbon Partnership Facility
  - Partnership for Market Readiness
    - Pilot Auction Facility
    - Scaled-Up Crediting Mechanisms



## CONNECTIVITY, **GLOBAL TRADE**

Enabling connectivity of carbon pricing efforts for a long-term, stable price on carbon

 Networked Carbon Markets initiative



# FOCUS ON EFFORTS TO PROMOTE AND ENABLE CARBON PRICING

The WBG is focused on promoting carbon pricing that has the potential to bring down GHG emissions. The institution has embarked on several efforts to enable carbon pricing across all stages of development.

The Carbon Pricing Leadership Coalition (CPLC) builds the case for carbon pricing by making the business case for a steadily rising carbon price—through the development of robust future carbon price scenarios with a set of global experts. It is also working with key knowledge partners like the Organisation for Economic Co-operation and Development and the International Monetary Fund to develop "Principles for Effective Carbon Pricing" endorsed by business, government, academia, and civil society. The CPLC will use this evidence to bring together government and business leaders to address key issues and challenges in developing carbon pricing policies that cut across the political, corporate, and technical spectrums.

The State and Trends of Carbon Pricing report provides insight into market and policy developments. As the international community works on effective and practical solutions to mitigate GHG emissions on a large scale, it is imperative that full use is made of accumulated experience, knowledge, and capacity. The State and Trends of Carbon Pricing Report provides critical technical input to inform public and private stakeholders engaged in

the design and implementation of carbon pricing schemes worldwide and in the negotiations leading to the COP21 in Paris.

The PMR is helping countries build a technical foundation for the design, development, and implementation of carbon pricing and other costeffective instruments. Ensuring the essential readiness components for these instruments—such as data management, Measuring, Reporting and Verification (MRV) systems, and the creation of policy and regulatory frameworks—is a crucial part of the PMR. The PMR also provides a platform for technical discussions and policy analysis, which in turn can spur innovation and help integrate carbon pricing into national low-carbon development plans and strategies.

Through market-based mechanisms and RBF, the GCCCF and GCCGT units provide funding and encourage client countries as well as the private sector to scale up mitigation ambition. This is in response to the fact that a growing number of countries are preparing ER programs. In the absence of clear signals from the international climate regime, carbon funds and facilities, like the CPF, will play a key role in enabling these programs to transition from readiness to implementation, by supporting purchases of ERs on a larger scale, using carbon finance.

Through the Networked Carbon Markets (NCM) initiative, the WBG is developing the services and institutions needed to enable a connected international carbon market that is liquid and delivers climate-smart financing more efficiently. Governments are designing

The World Bank Group supports carbon pricing to bring down emissions and drive investment to cleaner options.

and implementing carbon pricing systems in ways that best suit their unique contexts. While these unilateral efforts are to be commended, the resulting regulatory fragmentation has made it increasingly difficult to compare and connect efforts across jurisdictions. The NCM initiative creates the conditions for a connected international carbon market.

#### Looking Ahead

All of these efforts support the WBG's position that carbon pricing is a necessary way to reduce GHG emissions and lower climate risks. They also leverage the WBG's accumulated experience, knowledge, and analytical capacities.

# **FOCUS ON CARBON** PRICING LEADERSHIP COALITION

At the UN Climate Leadership Summit held in September 2014, WBG President Jim Yong Kim invited public and private actors to join a growing coalition to put a price on carbon. This group came to be known as the Carbon Pricing Leadership Coalition, consisting of 74 national governments, 23 state, provincial, and city governments, and over 1,000 company leaders.

The CPLC's objective is to bring carbon pricing supporters together and lay an analytical foundation for climate change mitigation that includes future carbon price scenarios and best practice principles for pricing carbon. Its work complements that of the PMR and NCM initiative.

The CPLC held its first meeting in conjunction with the WBG Annual Meetings in October 2014 and has embarked on three streams of work:

To understand the business case for putting a price on carbon as different prices emerge across the world in different forms. Countries need to shift their economies toward zero net emissions in the second half of this century and this involves pricing carbon, sending signals to investors, and decoupling carbon intensity from growth, jobs, and competitiveness.

To work with jurisdictions that are considering moving forward with carbon



pricing, and supplement the technical support offered by the PMR and other programs. The countries, regions, and cities that have introduced carbon pricing or are in the process of doing so are pockets of the future. The role of the coalition is to identify those who are pioneering the future of carbon pricing.

To encourage business to do more in their own use of carbon prices in operations and to be transparent about how they use a carbon price. By revealing a carbon price, the true cost of emissions will become evident. Leadership in this area can build momentum and produce the signals to get the basics right.

To pull all this together, the coalition is working on principles to guide the introduction of carbon pricing. These principles will stand countries, regions, and states in good stead, will be helpful in boardrooms, and will provide a focus to G7 and G20 leaders, as well as ministers, as they prepare for the climate conference in Paris in December, and develop their Intended National Determined Contributions (INDCs).

#### Looking Ahead

Myriad conversations are taking place around the world about how carbon pricing should fit into INDCs and what it would take to adopt more effective carbon prices over the next few years.

The forceful effect of business and government leaders voicing their support for carbon pricing will be essential in the run-up to COP21 to building confidence that a Paris package will materialize.

# **FOCUS ON PMR SUPPORT FOR** INDC PREPARATION PROCESS

*In the run-up to COP21 in* December, countries will publicly outline what actions they intend to take under a global climate agreement. These pledges on mitigation are known as Intended Nationally Determined Contributions. Their form and rigor will largely determine whether the world achieves an ambitious post-2020 climate agreement toward a low-carbon, climate-resilient future.

The PMR is supporting countries that are developing their INDCs. This involves helping them develop post-2020 mitigation scenarios and analyzing effective and cost-efficient policy instruments to achieve their climate change mitigation targets.

Policy analysis is an important step to assess the impacts of adopting different carbon pricing instruments. Many countries are at a crossroads in their decision to adopt specific pricing instruments, such as an ETS or a carbon tax, as a means to deliver mitigation objectives. In 2014, the PMR initiated an Upstream Policy Analysis work stream to help countries with this. One activity under this work stream is to support countries in their INDC preparation

This work supports the development of common technical guidance on analytical approaches, methodologies, and processes for setting post-2020 mitigation scenarios. It also provides analytical support for select PMR countries in their INDC preparation process.

Colombia is one of the countries using PMR analytical support as part of its INDC preparation. While the formulation of its INDC is a larger effort, the PMR support is critical to filling gaps and addressing questions that emerge in its ongoing modeling work. This support includes:

- Understanding the opportunities and challenges of various options for national mitigation objectives;
- Strengthening Colombia's modeling capacity to analyze alternative mitigation pathways; and
- Conducting technical analyses of the macroeconomic and social impacts of different post-2020 emissions scenarios.

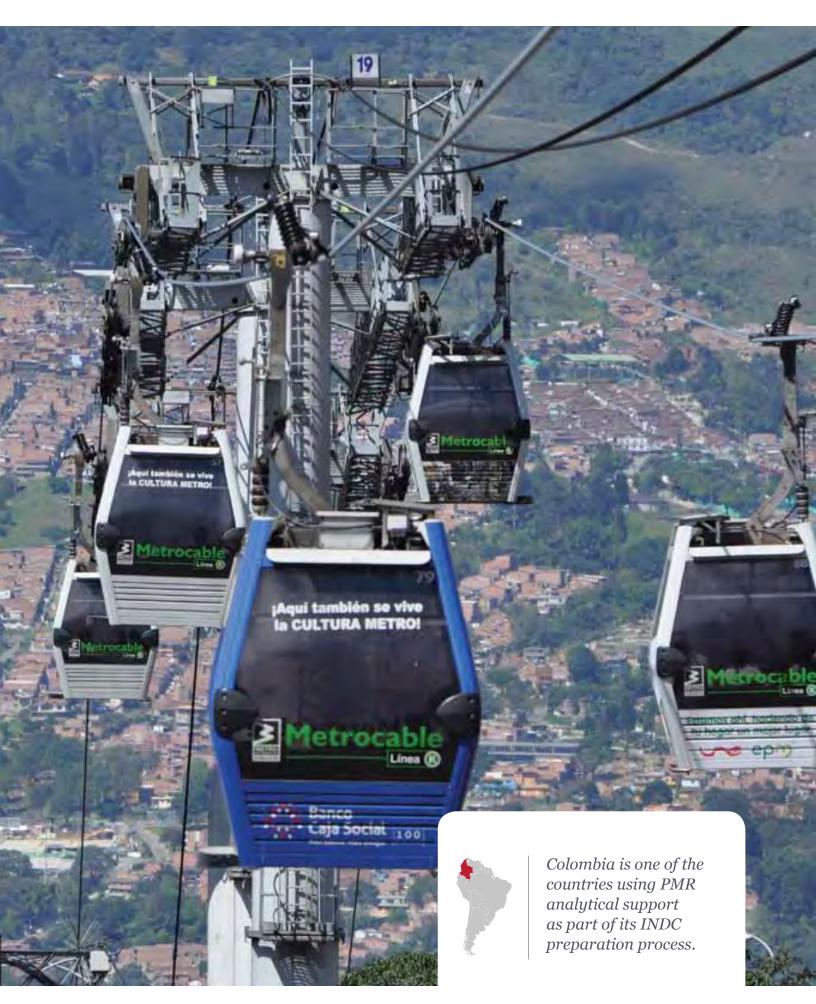
#### Looking Ahead

In 2015, the WBG will finalize common technical guidance, a "checklist," which provides a menu of analytical tools to help countries establish and assess various mid- and long-term emissions pathways. The checklist is intended to help make the analytical approaches, methodologies, and processes used by countries to set their post-2020 mitigation scenarios more transparent and comparable.

Furthermore, the checklist can be used to help countries identify important gaps or shortfalls in their own methods and tools, as well as foster a better understanding of the approaches and basic principles used.

The checklist is a valuable tool for countries to refine their analyses, performance tracking, and results assessment of mitigation outcomes, beyond their actual INDC submissions.





# FOCUS ON CHINA: PUTTING A PRICE ON CARBON, ONE STEP AT A TIME

In 2011, the National Development and Reform Commission announced that China would introduce emissions trading on a pilot basis to put a price on carbon and reduce the country's growth of GHG emissions. Pilots are being implemented across the provinces of Guangdong and Hubei, and in the cities of Beijing, Shanghai, Shenzhen, Chongqing, and Tianjin. These pilots will provide the groundwork for a nationwide ETS, expected to be rolled out in 2016.

The emissions trading pilots mark a major milestone in China's climate and energy policy. They represent the world's second largest ETS (after the EU's). The first phase has focused on technical aspects and on allocation of emission allowances (caps) for companies. But, as a market-based tool to curb emissions in a cost-effective and flexible way, emissions trading poses new challenges for companies, financial institutions, emissions exchanges, policy makers, and regulators in China. How is this being resolved?

The International Finance Corporation (IFC) is working with local emissions exchanges to enhance their capacity. These exchanges are expected to lead the development of the emissions trading pilots. To achieve this, they need a strong business focus, space for innovation, and a clear business vision, in addition to professional trading experience and qualified staff.

IFC is addressing regulatory issues, under advice of the Chinese government, that prevent or unduly limit banks and other financial institutions that offer market access to clients who want to buy or sell carbon. Lack of intermediation of emissions allowance trading may result in high transaction costs for firms, and in liquidity and price issues, with negative implications for future emissions trading across China. Current regulations only allow for spot trading of carbon but it is paramount that futures contracts and other derivatives also become available in the market.

IFC will help financial institutions expand their capacity and experience in the carbon market.

Financial institutions, in turn, need to provide companies with advice on risks and opportunities in emissions trading. While China has benefited significantly from the sale of ERs in the carbon market linked to the Kyoto Protocol, Chinese financial institutions have gained little experience that could be useful for an emerging ETS.

IFC will also help build knowledge and analytical tools for carbon pricing for financial institutions.

With mandatory regulation of CO<sub>2</sub> emissions currently being phased in, CO<sub>2</sub> is becoming a potential liability for companies. Financial institutions will need to understand the implications of CO<sub>2</sub> regulation for their core lending activities and portfolios, analyze client exposure to carbon price risks, and explore possible risk mitigation

#### Looking Ahead

Emissions trading is an important policy tool for the Chinese government to limit future growth of GHG emissions, reduce the economy's dependence on heavy industry, achieve energy security, protect the national environment, and control local pollution. The emissions pilots are already providing important lessons for the designers of a future national ETS. It is encouraging that Chinese decision makers are increasingly paying attention to the dynamics of allowance markets and the trading aspects per se of the emerging carbon market.





# **FOCUS ON SCALED-UP** CREDITING MECHANISMS

There is value and strong interest from a number of countries, including PMR participants, in piloting crediting mechanisms that can generate very large quantities of ERs at a low cost. These mechanisms could support sectoral or other large-scale mitigation programs. They could also support policy interventions that reduce emissions, such as energy efficiency standards. These mechanisms would assist developing countries in making long-term contributions to global mitigation targets and building their carbon pricing infrastructure.

The experience gained through this piloting effort could be used to inform global standards and international climate finance agreements as well as future national, regional, and international carbon market mechanisms. These new instruments would also support the development of GHG accounting methodologies and MRV tools, with a potential for application in a broad range of contexts.

Piloting new instruments would take the form of supporting individual programs in developing countries through resultsbased payments for independently verified ERs. These national, subnational, sectoral or citywide programs would be developed against the backdrop of the implementing countries' INDCs, aim to have a lasting impact, and lead to transformational change. They would leverage large volumes of financing from international financial institutions, private investors, and domestic sources.



A piloting effort of this kind would also lead to the development of new methods and tools to account for ERs on a much larger scale than has been achieved through CDM projects or programs. The new methodologies would include approaches to quantify and monitor ERs from policy measures—an innovation from existing carbon standards. They would keep an emphasis on environmental integrity and transparency and improve efficiency by lowering transaction cost.

Piloting outside of an existing international set of rules would allow for methodological approaches tailored to specific country and sector circumstances. This would maximize innovation and learning, while feeding lessons back to international climate negotiations.

#### Looking Ahead

The WBG is in dialogue with a range of stakeholders on shaping an impactful piloting effort for these new mechanisms. This includes looking at the scope, objectives, and modalities of such a work program. These conversations will guide the WBG's next steps in its engagement in scaled-up crediting mechanisms.

The new methodologies would include approaches to quantify and monitor ERs from policy measures an innovation from existing carbon standards. They would keep an emphasis on environmental integrity and transparency and improve efficiency by lowering transaction cost.

## **FOCUS ON NETWORKED CARBON MARKETS**

The WBG launched the NCM initiative to support a connected international carbon market that is liquid and delivers climate-smart financing more efficiently.

Around the world, countries are developing ways to put a price on carbon to fight climate change. Depending on their national circumstances, about 40 national and more than 20 subnational jurisdictions are participating or preparing to participate in an ETS today, and other countries are considering other climate change mitigation

These domestic initiatives are crucial to lowering GHG emissions; however, this bottom-up development of climate change mitigation efforts has led to a certain amount of regulatory fragmentation and heterogeneity across jurisdictions.

The NCM initiative responds to the fact that governments are designing and implementing climate change mitigation efforts in ways that meet their needs and targets. While these domestic efforts are to be encouraged, it leads to regulatory fragmentation, which makes it increasingly difficult to track progress, compare achievements, and connect efforts across iurisdictions.

The NCM initiative aims to develop a framework for enhancing transparency, comparability, and fungibility of heterogeneous climate change mitigation efforts. The ultimate goal is to determine trading ratios for carbon units (carbon exchange rates) and a mechanism to support carbon market-related functions. This is intended to facilitate connectivity of carbon pricing systems through networking so that they have liquidity, scale, and the foundation for a long-term stable price on carbon.

The Networked Carbon Markets initiative seeks to enable a connected international carbon market that comprises a wide range of heterogeneous climate change mitigation efforts.

#### **Price instruments**

- Carbon tax
- Capital subsidies
- Feed-in tariffs
- Energy efficiency tariffs

#### **Quality instruments**

- Cap-and-trade
- Offsets
- Credit and baseline
- Clean energy standard
- Renewable Energy Certificates

#### **Regulatory instruments**

- GHG performance standards
- Offsets
- Technology standards
- Fuel standards

Networking domestic efforts can help countries achieve their climate change mitigation objectives in a more costeffective way. When different carbon pricing systems are connected, they create a larger, potentially more liquid, market. The larger the market, the more the price of carbon is resilient to extreme volatility.

Also, by connecting with different carbon pricing systems, countries can tap into other abatement options, which can help reduce costs. The cost and efficiency benefits that result from networking may, therefore, enable countries to increase the ambition of their climate change mitigation efforts.

#### Looking Ahead

NCM complements the WBG's ongoing low-carbon development activities and its efforts to promote carbon pricing as critical to achieving climate change mitigation on a greater scale in an effective and cost-efficient way.

While countries are developing custom-made answers to the climate change problem, stakeholders from the private and public sectors, research communities, and civil society are working on ways to compare them so that all climate action is accounted for and accommodated by a more efficient and networked international carbon market. The economies of scale that are expected to result from networking may enable countries to increase the ambition of their climate change mitigation efforts and provide the basis for a long-term, stable, and influential price on carbon in the future.

## CARBON FINANCE ACROSS THE WORLD

The World Bank Group supports carbon finance operations and programs in more than 75 countries. These comprise activities undertaken by the FCPF, BioCF ISFL, and the PMR, as well as CDM and JI projects and programs by Kyoto Funds and Facilities, as shown on the map.

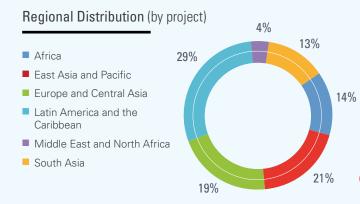
In 2014, operations expanded into three new countries: Belize, Sudan, and Zambia. Also, nine new programs were launched, some of which are highlighted on the map.

A total of 21 governments support the carbon funds and facilities by purchasing ERs as carbon fund participants and/or contributing donor resources to readiness activities.

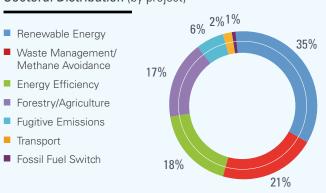
Moreover, 59 private sector firms and three civil society organizations (CSOs) also support the Units' activities and, together with the public sector, purchase ERs through the carbon funds and facilities.



These charts depict the regional and sectoral distribution of the GCCCF's and GCCGT's 142 carbon projects active in 2014. The project shares include both the number of active Emission Reductions Purchase Agreements (ERPAs) and closed ERPAs (that is, those that have fully delivered ERs per their contracts). Note that these figures do not include FCPF, BioCF ISFL, and PMR activities.

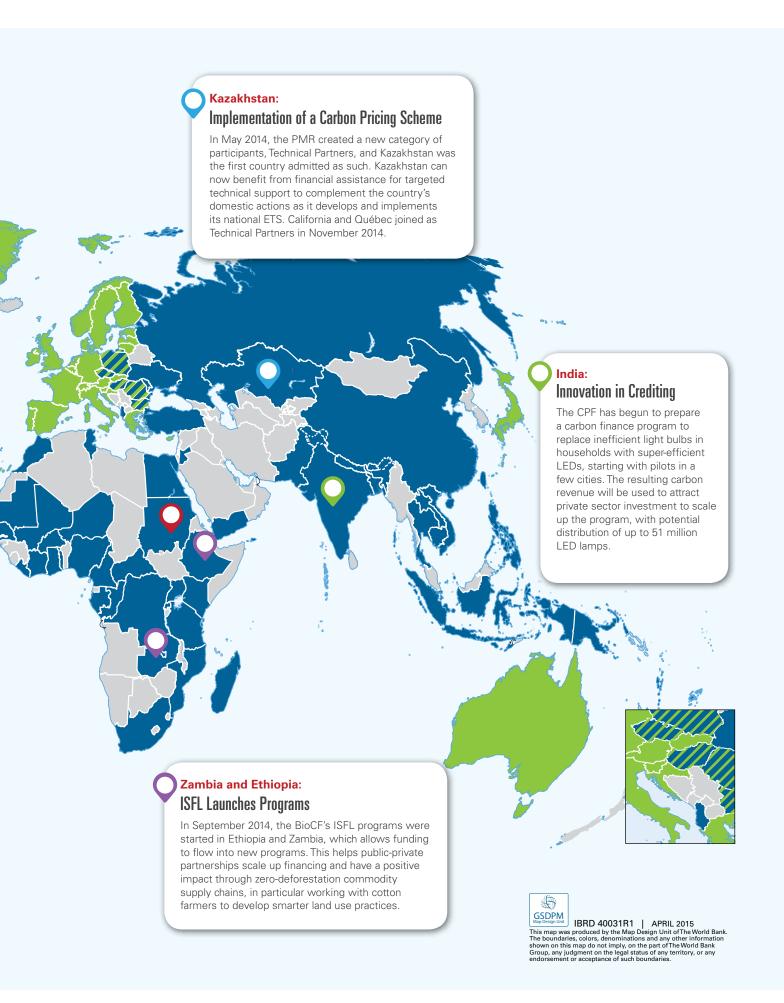


#### Sectoral Distribution (by project)



## Belize, Sudan, and Uruguay: FCPF Expands

In July 2014, the FCPF accepted Belize, Sudan, and Uruguay into the partnership, bringing the number of REDD+ country participants to 47. In Uruguay, the REDD+ project will be executed by the Ministry of Livestock, Agriculture, and Fisheries and is looking at expanding silvopastoral activities and controlling invasive species, while preparing the means to measure forest degradation.



# 2014 HIGHLIGHTS

### **Kenyans Earn First Ever Carbon Credits From Sustainable Farming**

Supported by the BioCarbon Fund, the Kenya Agricultural Carbon Project involves 60,000 smallholder farmers on 45,000 hectares, promoting farming that is more productive, sustainable, and climate-friendly. In January, the project issued its first carbon credits for sequestering carbon in soil. The credits represent a reduction of close to 25,000 metric tons of CO<sub>3</sub>.

### The NCM initiative Complements **Ongoing Low-Carbon Development Activities**

In February, representatives from private sector and industry associations, developed and developing country governments, think-tanks and academia, nongovernmental organizations (NGOs), and multilaterals discussed how different carbon markets can be compared. This international working group promotes the connectivity of carbon markets as being critical to achieving climate change mitigation on a greater scale in an effective and cost-efficient way.

#### **Tunisia and Kazakhstan Develop Strategies for Climate Action**

At the 8th PMR Partnership Assembly meeting, two new countries—Tunisia and Kazakhstanjoined the PMR. Tunisia will use PMR support to design and test scaled-up ER crediting mechanisms in the cement and energy sectors, while Kazakhstan, the PMR's first Technical Partner, is seeking technical support for the implementation of its national ETS.



**FEBRUARY** 

JANUARY

THE NEPAL BIOGAS **PROGRAM ISSUED** 

**2**35,000 **CERS AND BENEFITS** 0,000

HOUSEHOLDS,

REPLACING TRADITIONAL **FUEL SOURCES FOR COOKING-FUEL WOOD** WITH BIOGAS PLANTS

## **Delivering Ground-Breaking Action in 2014**

MONTH	PROJECT	COUNTRY	PROJECT TYPE	CARBON CREDITS (CERs)	PIONEERING RESULTS
February	Improving Kiln Efficiency in the Brick Making Industry in Bangladesh	Bangladesh	Brick	17,403	First project in brick sector in Bangladesh to deliver carbon credits
June	Kenya Optimization of Kiambere Power Station	Kenya	Hydro	47,309	First hydro rehabilitation project in Kenya and in Africa to deliver carbon credits
October	The Nepal Biogas Program	Nepal	Biogas	234,550	First household biogas project to deliver carbon credits generating largest issuance in Nepal and in an LDC
October	The Rwanda CFL Distribution Project	Rwanda	Compact Flourescent Lamps (CFL)	23,491	First CDM project in Rwanda and first CFL project in Africa to deliver carbon credits

Total of more than 320.000 CERs in total carbon reduction

## New Carbon Initiative Focuses on Energy Access in LDCs

The Ci-Dev became operational on April 1, 2014, with funding closed at \$123 million, and has started building a pipeline of energy access programs in LDCs as well as knowledge products that will identify successful examples of RBF.

## **Bold Ideas from Pioneering REDD+ Countries**

The 9<sup>th</sup> meeting of the FCPF Carbon Fund focused on launching some of the REDD+ proposals on a path to become reality, in order to show global and local stakeholders that REDD+ is moving forward not only in the UNFCCC negotiations but also on the ground. Ten countries presented concepts for REDD+ programs at the landscape level and were selected into the Carbon Fund pipeline, which now totals 11 countries (Chile, Costa Rica, Democratic Republic of Congo, Ghana, Guatemala, Indonesia, Mexico, Nepal, Peru, Republic of Congo, and Vietnam). The REDD+ proposals are each expected to receive between \$50 and \$70 million in results-based payments.

## Carbon Expo in Cologne

More than 1,700 participants from about 70 countries gathered in Cologne, Germany, for the 11<sup>th</sup> Carbon Expo to learn about recent developments in carbon markets.

#### State and Trends of Global Carbon Pricing 2014

The WBG published its annual carbon pricing report. The report describes key domestic carbon initiatives around the world, and is one of the reports downloaded most often from the World Bank website.

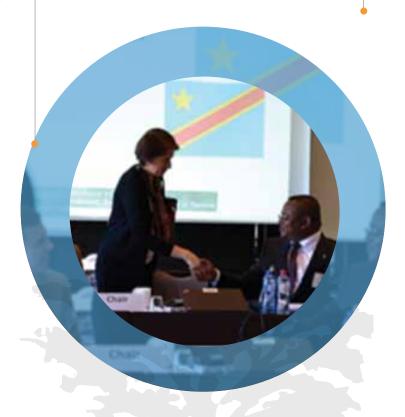
## Ci-Dev Hosted the First Meeting of the CDM Reform Working Group

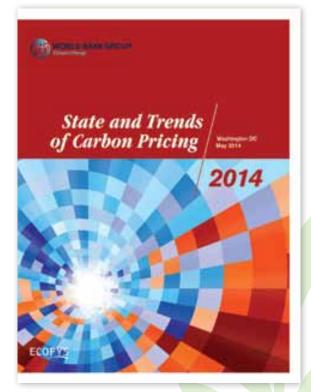
The working group brings together key carbon and climate finance stakeholders to improve, exchange views on, and promote shared understanding of the CDM. It serves as a forum for generating knowledge, promoting CDM reform and mitigation activities that yield high sustainable development benefits, and raising awareness of carbon RRF

JUNE

MAY

## APRIL





State and Trends of Carbon Pricing 2014



Vikram Widge and Neeraj Prasad were appointed as new managers of the Climate and Carbon Finance Unit (GCCCF) and the Forest and Landscape Climate Finance Unit (GCCGT), respectively.

#### **Africa Carbon Forum**

The 6th Africa Carbon Forum in Windhoek, Namibia, brought together public and private sector representatives of African nations to discuss



climate change mitigation and domestic climate action. The WBG team gave a presentation on how RBF can support energy access programs in Africa and discussed which CDM reforms are necessary

to make it happen. The team also discussed the future of carbon markets in the context of ongoing UNFCCC negotiations.

## 74 Countries and Over 1,000 **Businesses Speak Out in Support** of a Price on Carbon

At the UN Climate Leadership Summit, the states, provinces and cities, and over 1,000 private companies and investors who signaled their support for carbon pricing. Together, these countries represent 54 percent of global GHG emissions and 52 percent of global GDP.



Watch video online: worldbank.org/carbonpricing

SEPTEMBER

**AUGUST** 

JULY

## Celebrating 10 Years of the BioCarbon Fund

In August, the BioCarbon Fund celebrated its 10th anniversary. The BioCF has paved the way for land-based carbon innovation and been at the heart of linking carbon finance, sustainable land use, and rural communities





Watch video online: wbcarbonfinance.org/BioCF

#### The World Bank Group Stands behind the New York Declaration on Forests

A coalition of over 150 stakeholders—including 32 national governments, 18 subnational governments, 40 companies, 16 Indigenous Peoples groups, and 49 civil society organizations—endorsed the New York Declaration on Forests, with the shared goal of ending natural forest loss by 2030. The FCPF is working with 11 forest countries on large-scale ER programs and building public-private partnerships with companies to take action on the collective commitments.

2030 NEW YORK DECLARATION ON FORESTS GOAL OF ENDING NATURAL FOREST LOSS BY 2030

## **Discussion of Net** Mitigation: an Effort of Countries to Go beyond Offsetting

A workshop on net mitigation was organized in Paris to help negotiations on UNFCCC market mechanisms. It brought together Ci-Dev and CPF participants as well as key African and European climate negotiators. The WBG presented early-stage concepts on how net mitigation can be operationalized within CPF pilot activities.

# OCTOBER

"By supporting a price on carbon, leaders from across the political and business world have come together to send a strong signal that they will build their economies for a safer, cleaner, and more prosperous planet. Today we see a real momentum."

Dr. Jim Yong Kim President, World Bank Group

## **Using Auctions to Combat Climate** Change

Watch video online: pilotauctionfacility.org

In November, the WBG Board of Directors approved the Pilot Auction Facility for Methane and Climate Change Mitigation (PAF). The PAF is an innovative instrument that will use auctions to support projects that reduce emissions—starting with methane—by guaranteeing a floor price on their carbon credits.

#### Simplifying CDM Rules **Benefits Africa**

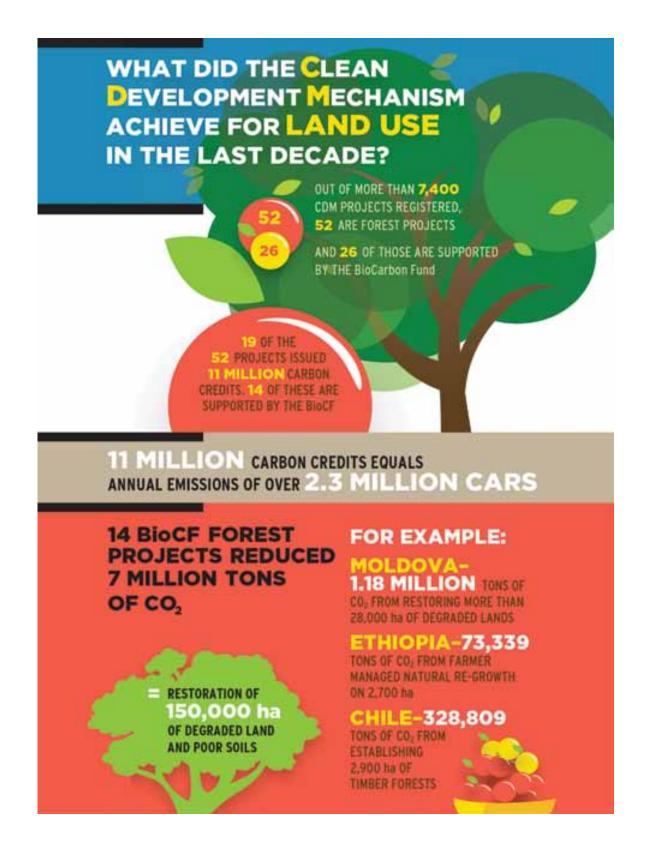
The GCCCF Policy and Methodology Team provided capacity building and engagement with African negotiators through Ci-Dev on streamlining the Programme of Activities (PoA) process. This led to a request to the CDM Board at the COP20 in Lima for an evaluation of options to simplify the validation process for projects and programs that are considered additional.

DECEMBER NOVEMBER ROUND TWO LIMA COP20 CMP10 UN CLIMATE CHANGE CONFERENCE 2014 BUDGET EXERCISE PRICE \$5 MILLION 56.00 DEMAND



# **BIOCARBON FINANCE**

#### FOREST CARBON TRANSACTIONS



# PROJECTS HAVE MANY PURPOSES AND BENEFITS



AGROFORESTRY, 1% SILVOPASTORAL, 1% WETLAND REGENERATION, 1% NON-TIMBER FOREST PRODUCTS, 2% ASSISTED NATURAL

REGENERATION, 6%

## ALL FOREST PROJECTS

ARE IMPLEMENTED ON DEGRADED LANDS AND SUPPORT THE LIVELIHOODS OF POOR FARMERS

## **EVOLUTION OF THE FOREST CDM SECTOR**



## FOREST PROJECTS BROUGHT CDM TO 22 COUNTRIES; 5 LDCS



THE BIOCF HAS BEEN A PIONEER IN PILOTING FOREST CARBON TRANSACTIONS





# \$140+

**MILLION** By the end of 2014, the Carbon Fund had \$127 million in commitments and another \$14.5 million in donor contributions to the Carbon Asset Development Fund.

#### **BUYER PARTICIPANTS**





**GOVERNMENT OF SPAIN** 





#### SELLER PARTICIPANTS

Fonds d'équipement Communal of Morocco

Caixa Econômica Federal of Brazil Ministry of Industry and Trade of Vietnam

Provincial Electricity Authority of Thailand

Tanzania Rural Energy Agency Ministry of Finance of Egypt Land Bank of the Philippines

#### **DONORS**

Government of Spain Government of Norway Government of Italy European Commission

#### **HOST COUNTRY PARTNER**

Government of China



http://cpf.wbcarbonfinance.org

# **Carbon Partnership Facility**

The Carbon Partnership Facility (CPF), operational in May 2010, helps its partner countries use carbon finance to implement systematic approaches to low-carbon growth.

The CPF's primary objective is to innovate in scaling up carbon finance. The CPF is designing ER programs for investments that deliver carbon assets after 2012. It consists of the Carbon Asset Development Fund, which supports the preparation of the ER programs, and the Carbon Fund, which will purchase the ERs generated by these 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 was established as a partnership, where both Buyer and Seller Participants, together with Donors and Host Country Partners, sit together at the table, learn from each other, and design solutions that will

work on the ground and be mutually beneficial.

The CPF draws on the WBG's financial and knowledge resources to strategically integrate carbon finance with sustainable development plans by aligning it with country assistance programs—and often linking it to 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 managementin situations where governments are welcoming policy measures or

#### Scaled-Up

investments.

The key objective of the first set of CPF programs is to scale up carbon finance through the CDM PoA approach. The aim is to generate ERs that will provide benefits to both Buyer and Seller Participants.

CDM has historically operated largely on a project-by-project basis. The CPF uses scaled-up approaches to enable carbon finance to support partner country initiatives for lowcarbon growth. These programs are aligned with WBG operations and

other sources of funding to provide more comprehensive approaches to financing clean technologies.

#### Low-Carbon Technology

The CPF focuses on finding ways to support country policies and initiatives to catalyze public and private investment in clean technologies. The CPF specifically targets areas that have not been reached effectively by mechanisms in the past, such as energy efficiency and urban programs. The fundamental goal of the CPF is to help client countries use carbon finance to implement systematic approaches to sustainable development.

#### Looking Ahead

The next step for the CPF is to develop and pilot a new generation of scaled-up crediting modalities. The lessons learned from initial efforts will set the stage for further contributions to the design and implementation of new international carbon crediting approaches envisaged under the UNFCCC.

#### Methodology

The CPF supports conceptual work to develop innovative methodologies and to test these approaches through concrete pilot programs. The conceptual work targets broad segments of the economy with substantial potential for GHG mitigation, like the power sector, and where opportunities to develop programs have been identified.

In 2014, the CPF team identified two initial pilots: the Sri Lanka Renewable Energy Program (smallscale hydro, wind, and solar) and

the India Energy Efficiency Program (household LED bulb distribution). The next step is to turn these pilots from ideas into concrete programs, together with country counterparts. Preparations for the first pilots will begin in 2015.

In addition to the conceptual work being undertaken, work programs have been developed in two more

 New market-based mechanisms (NMMs) for mitigation actions in cities. A multidisciplinary study

titled "Lowering cities' carbon emissions: examining new carbon crediting options" is underway to explore options for cities and suggest a design framework for piloting city wide mitigation actions under the NMM.

· Economy-wide policy MRV. The CPF is exploring innovative approaches to GHG monitoring and accounting for economy-wide policies, such as the introduction of a carbon tax and the reform of fossil fuel subsidies.





### Partnership for Market Readiness

The PMR supports countries to assess, prepare, and implement carbon pricing instruments in order to scale up GHG mitigation. It also serves as a platform for countries to share knowledge and work together to shape the future of cost-effective climate change mitigation.

An increasing number of middleincome countries are in the process of introducing carbon pricing and other economic instruments to reduce GHG emissions in a cost-effective way. While there is a growing array of policy options and instruments that countries can draw on to shift toward a lowcarbon pathway, tailoring these to a country's unique circumstances and development priorities is a challenge. The PMR is a key platform to help countries prepare for such policy choices and their future implementation, by focusing on improving their technical and institutional readiness.

Partnership to Foster Innovation

The PMR brings together more than 30 countries, various international organizations, and technical experts to facilitate country-to-country exchange and knowledge sharing as well as to enable cooperation and innovation

The PMR includes 13 Contributing Participants, which provide financial support to the PMR trust fund, and 17 Implementing Country Participants,

which receive funding for the assessment, technical ground work, design, and piloting of market-based approaches to GHG mitigation.

In 2014, the PMR created a new participant category—the Technical Partner—to include countries and subnational jurisdictions who have made significant progress with the implementation of a carbon pricing instrument, and who can benefit from technical support in the form of funding and/or expert advice, and learn from experiences of other PMR Participants.

The WBG serves as the PMR Secretariat, trust fund manager, and principal delivery partner to the Implementing Country Participants.

Support for Domestic Action

Implementing Country Participants follow a two-phased process: a Preparation Phase in which they formulate a Market Readiness Proposal (MRP), and an Implementation Phase in which they agree on implementation arrangements and carry out the activities identified in their MRP.

Countries are allocated \$350,000 each to formulate an MRP. As of December 2014, all 17 Implementing Countries had been allocated this Preparation Phase funding.

Final MRPs are presented to the Partnership Assembly (PA) for allocation of Implementation Phase funding in the amount of \$3 million, \$5 million, or \$8 million. As of December 2014, 12 countries had been allocated Implementation Phase funding.

The PMR also supports countries' efforts to determine post-2020 mitigation scenarios and identify effective and cost-efficient policies—including carbon pricing instruments—to achieve climate change mitigation. Much of this support contributes to the Implementing Countries' work to prepare the mitigation component for their INDCs under the UNFCCC process.

Through its Technical Work Program, the PMR promotes best practices and facilitates efforts to establish common standards and approaches for GHG mitigation. Drawing on country experience, global industry experts, and in-house resources, the PMR Secretariat generates a host of knowledge products on various economic policy instruments and technical elements related to carbon pricing.

#### Looking Ahead

In response to new domestic and international developments, the PMR has broadened its membership to include a new participant category and expanded its areas of focus.

For example, in 2014 the PMR scaled up activities on upstream policy analysis and private sector readiness, among others. In order to ensure that the PMR's impacts are maximized and sustained over time, discussions on the PMR's strategic direction for the future are ongoing.

## PMR's Knowledge Products and Exchanges

The PMR serves as a forum for countries to share technical knowledge and experiences in order to inform the design and implementation of innovative instruments to ramp up GHG mitigation. To maximize these country-to-country exchanges, the PMR organizes PA meetings, workshops, technical training and meetings, as well as public events and e-learning courses to help raise the profile of action by Implementing Countries. In addition, the PMR generates knowledge products such as technical notes, handbooks, and training materials on various economic policy instruments and technical elements related to carbon pricing.



#### PA Meetings

The PA is the governing body of the PMR. It consists of all Contributing and Implementing Country Participants. PA meetings are held three times a year to provide strategic operational guidance, confirm the participation of new countries, and approve the allocation of PMR resources.



#### Technical Workshops

PMR Technical Workshops provide an important platform for countries and private sector representatives to engage in discussions on carbon pricing instruments—from baseline setting to how to design a domestic ETS to providing peer feedback on innovative policies. Workshops also harness momentum to spur action toward post-2020 GHG mitigation efforts using innovative and costeffective instruments.



#### Technical Trainings and Meetings

Technical trainings are designed as hands-on learning events featuring case studies and group exercises to examine the practical considerations of a topic, such as MRV. Also, the PMR holds technical meetings that are tailored to specific country needs or programs and use country-tocountry exchanges on a specific subject matter.



#### Events

PMR organizes public events to facilitate discussions on topics ranging from progressive domestic climate action to showcasing the experiences and lessons learned from the use of carbon pricing instruments. These events are a valuable platform for audience interaction beyond the PMR, including with the private sector.



#### E-learning

E-Learning presents tremendous opportunities for capacity building by connecting practitioners to just-in-time sources of knowledge and learning and communities of practice which is not just affordable but also convenient to access.



#### Technical Notes

Drawing upon country experience, global industry experts, and in-house resources, the PMR publishes a series of Technical Notes to provide insight and guidance on an array of technical aspects associated with market readiness and carbon pricing. The publications contribute to the ongoing work of the PMR as well as to the general debate on market readiness and carbon pricing.





Lessons Learned from Linking Emissions Trading Systems: General Principles and **Applications** 

MARCH.

#### Mexico City, Mexico

#### 8th PA Meeting:

Thailand was allocated \$3 million to implement its PMR project; Colombia and Morocco presented their draft MRPs. The new Technical Partner category was created and Kazakhstan was endorsed as such and allocated funding for targeted technical support; Tunisia was confirmed as Implementing Country Participant.

- **Developing Domestic Offset Schemes**
- Second Regional MRV Technical Training—Latin America & Caribbean
- Stepping Up to the Challenges: Domestic Climate Action and Carbon **Pricing Instruments**

#### Cologne, Germany

#### 9th PA Meeting:

Colombia and Morocco were allocated \$3 million each to implement their PMR projects: Brazil, Ukraine, and Vietnam presented their draft MRPs; upstream policy work on post-2020 mitigation scenarios was endorsed.

- Carbon Tax Technical Workshop
- Preparing for Carbon Pricing Policies: A Business-Government Dialogue

#### Mexico City, Mexico

International Experiences and Lessons to Inform the Development of Mexico's ETS



#### Watch video online: thepmr.org



E-Learning: ETS

Izmir, Turkey Third Regional MRV Technical Training—Europe & Central Asia, and Middle East & North Africa

Washington D.C., USA Approaches and Tools to Setting Mitigation Scenarios

Bonn, Germany MRV-ing GHG Emissions under Existing and **Developing Pricing** Mechanisms

····JUNE · · JULY

> A Survey of the MRV Systems for China's ETS Pilots



Set of training materials on MRV



Preparing for Carbon Pricing: Case Studies from Company Experience



Overview of Carbon Offset Programs: Similarities and Differences

Santiago, Chile

10th PA Meeting:\*

Brazil, Ukraine, and Vietnam were allocated \$3 million each to implement their PMR projects; South Africa presented its draft MRP; California and Québec<sup>5</sup> were confirmed as Technical Partners.

Different Market-Based Approaches and Implications for a Future Carbon Market

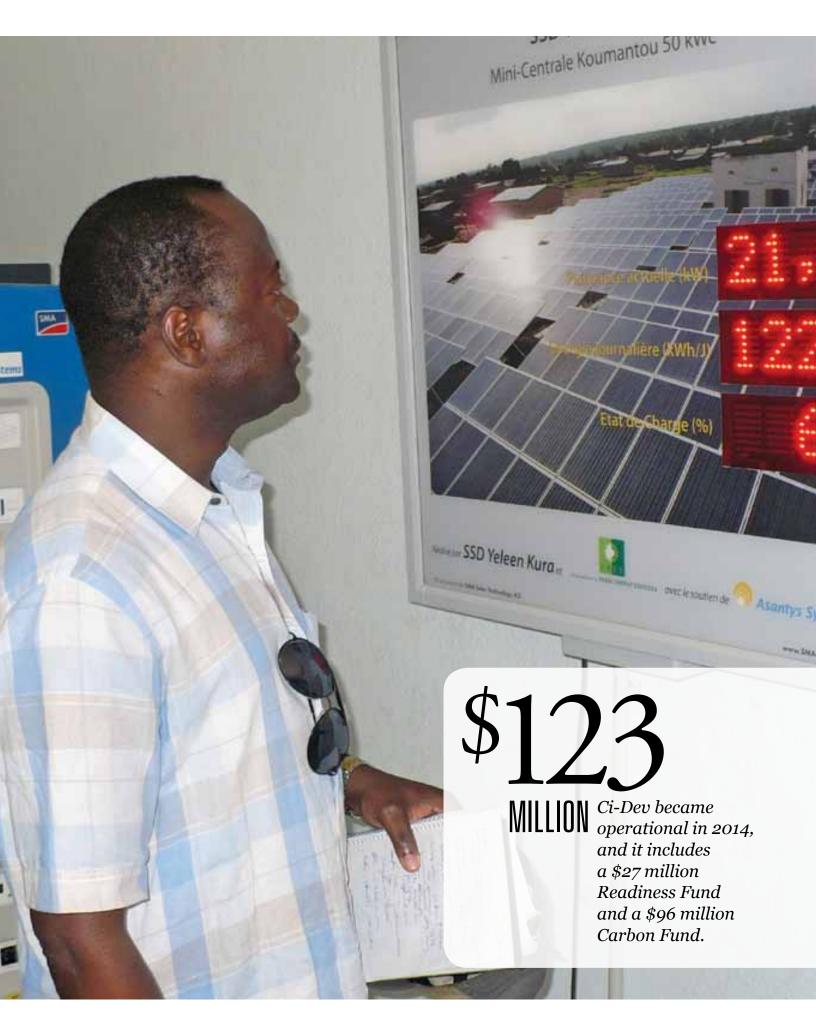
NOVEMBER

- Interactions between Energy and Carbon **Pricing Policies**
- Getting Ready for Carbon Pricing Policies: Challenges and Opportunities for the Energy Sector



PMR Technical Notes are available in different languages.

The PA allocated Implementation Phase funding during inter-sessional period between PA9 and PA10.





## Carbon Initiative for Development

The Carbon Initiative for Development (Ci-Dev) seeks to increase low-carbon energy access in the world's poorest countries by offering carbon-linked RBF to lower GHG emissions using the CDM.

Ci-Dev supports initiatives that deliver solid development benefits in LDCs, using performance payments based on ERs. It also builds capacity and develops tools and methodologies to help the poorest countries of the world access carbon finance.

Ci-Dev seeks to support innovative business models and pilot programs that leverage private sector finance and that could transform energy access to clean and efficient technology sectors like household solar and biogas, micro-hydro, mini-grids, water purification, and cook stoves. By learning from its portfolio of pilots and other engagements, and by distilling and disseminating these lessons learned, Ci-Dev contributes to the further scaling up and replicating of models that have been proven successful.

The first tranche of Ci-Dev closed for further capitalization and became operational in April 2014. It includes a \$27 million Readiness Fund and a \$96 million Carbon Fund supported by the United Kingdom, the Swedish Energy Agency, and the Switzerlandbased Climate Cent Foundation.

#### Energy Access and Results-Based Finance

About 1.3 billion people live without access to electricity and 2.6 billion people are without clean cooking facilities—of which 85 percent live in rural areas. Achieving universal access to electricity by 2030 will require an additional average annual investment of \$35-40 billion. Given this figure, neither Ci-Dev nor the international donor community can tackle the energy access challenge on its own.

Ci-Dev focuses on identifying carbon RBF business models in energy access that could be scaled up and replicated by governments, NGOs, and in particular by the private sector. By supporting a portfolio of programs, Ci-dev is seeking to test the usefulness of carbon RBF in the field of energy access.

Ci-Dev tests specific business models in its own portfolio to demonstrate engagements that are most viable and that can be most beneficial to energy access technology sectors as a whole. Ci-Dev is actively seeking partners who wish to engage in these learning activities and share knowledge.

Capacity Building, Learning, and Unlocking the CDM The Readiness Fund will provide capacity building, technical assistance, and grants to sponsors of programs supported by Ci-Dev in the areas of carbon and methodology monitoring and supervision, as well as general business model support. The Readiness Fund will also support Ci-Dev administration and operations, program management, monitoring of development benefits, and execution of its knowledge management strategy.

In 2014, Readiness Fund activities included research and studies to establish a baseline of the current status of carbon RBF in energy access technology sectors. Findings are expected in 2015 and will include: (i) a study on business models with potential for innovative and transformative impacts on energy access, (ii) a study on how carbon finance has been used in energy access to date, and (iii) a study on MRV procedures to identity improvements that could be made to methodologies currently applied in energy access programs. This work will help to inform and launch Ci-Dev's knowledge management efforts in 2015.

The Readiness Fund also supports Ci-Dev's methodology work program, which delivered several key achievements in 2014 that will help unlock the CDM for LDCs—particularly those in Africa. These include three Ci-Dev proposals agreed by the CDM Executive Board (EB) to streamline the project cycle, namely:

- 1. Allowance for batched issuance of Certified Emission Reductions (CERs) for PoAs;
- 2. Simplified sampling rules for monitoring surveys;
- 3. Definition of default eligibility criteria for some energy access methodologies for cook stoves, biogas digesters, and rural electrification.



#### Building a Pipeline

To be accepted into the Ci-Dev portfolio, projects must be or become registered CDM programs that will result in CERs that are recognized by the UNFCCC. Ci-Dev supports CDM PoAs and component project activities. Subsequently, the Carbon Fund will support energy access programs by providing performance-based payments for the resulting CERs.

In 2014, Ci-Dev focused on building a pipeline of programs that will eventually form a portfolio of pilot programs. In the past year, Ci-Dev has reviewed over 220 proposals, including 165 received from the public in two calls for project ideas. The pipeline

now comprises 15 programs from 11 countries in Africa—of which nine are LDCs and 10 are eligible for financing from the International Development Association.

These pipeline programs are

undergoing rigorous due diligence assessments to identify potential social and environmental risks as well as risk mitigating actions. Further, Ci-Dev is evaluating whether and how each of the programs offers viable business models that could be scaled and replicated to help transform energy access technology sectors.

#### Looking Ahead

Ci-Dev will continue to perform due diligence on its pipeline programs in 2015 and hopes to sign ERPAs by the end of the year. It will also continue its efforts to make the CDM more accessible via its methodology work program. Moreover, it will build capacity in its portfolio programs through readiness grants and technical assistance.

2015 will be an important year for Ci-Dev to develop and execute a robust knowledge management strategy—in conjunction with internal and external partners—that is built around the initiative's unique ability to test carbon RBF research questions on actual pilot programs.

#### Methodology and Policy Work

Ci-Dev has contributed with significant progress in the CDM methodology work dedicated to rural electrification. The relevant CDM methodologies have been simplified and strengthened mainly to improve access to carbon financing for LDCs.

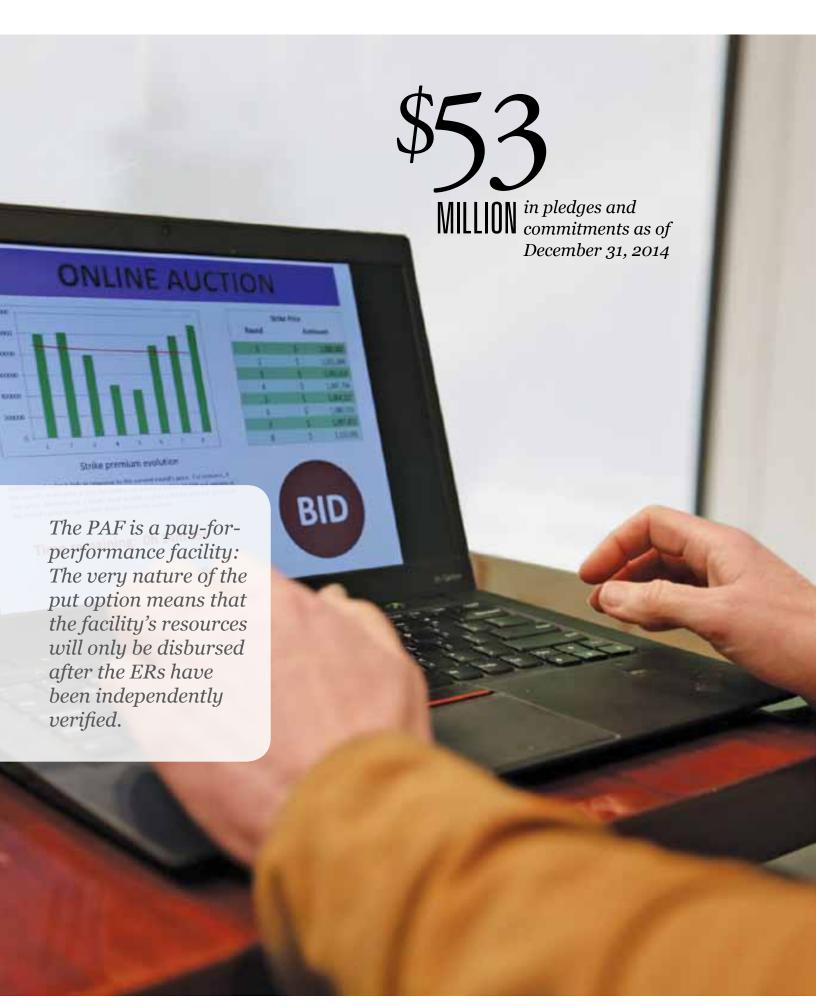
First, Ci-Dev supported a revision of the off-grid rural electrification methodology in order to more accurately track the site-specific amount of time off-grid technologies produce electricity (called site-specific availability factors). The revision may yield more ERs, as the methodology previously underestimated these availability

Second, the CDM EB simplified monitoring procedures for rural grid extension projects based on Ci-Dev contributions. These improvements allow consumers to use and account for energy use through prepaid electricity meters, and allows utilities to apply a sampling approach for non-metered consumers, which could decrease the transaction costs associated with carbon monitoring.

Furthermore, Ci-Dev submitted a new consolidated rural electrification methodology to the CDM EB. This methodology broadens the coverage of current methodologies and reduces their complexity and transaction costs.

The new methodology, if approved, is especially useful in cases where multiple technologies are used.

Finally, during the COP20 in Lima, Ci-Dev supported African countries in putting forward ideas to simplify the CDM project cycle. The COP recognized the ideas, which include adjusting the qualification thresholds for micro-scale activities and streamlining the validation process of projects and PoAs that qualify as automatically additional. It also requested the CDM EB to explore options for their implementation. If accepted, these changes—to which Ci-Dev will continue to contribute—may help to lower transaction costs for small projects.





www.pilotauctionfacility.org

## Pilot Auction Facility for Methane and Climate Change Mitigation

The Pilot Auction Facility for Methane and Climate Change Mitigation (PAF) is an innovative mechanism that pioneers the use of auctions to allocate public finance for climate action efficiently.

The PAF plans to demonstrate a new, cost-effective climate finance mechanism that incentivizes private sector investment and action in climate change in developing countries by providing a guaranteed floor price on carbon reduction credits.

The PAF was created as a result of a report from the Methane Finance Study Group, 6 an international group of experts convened in 2012 at the request of the G8 to review innovative financing approaches to methane abatement. Through its work, the Study Group identified 1,200 methane projects that were at risk of being decommissioned due to the low price of carbon credits. Yet the additional revenue required to unlock these investments, and/ or to allow them to continue their operation was considered small. The Study Group estimated that, across all developing countries, methane-reducing opportunities could entail a reduction of as much as 8,200 million tCO<sub>2</sub>e at less than \$10 per ton in incremental cost financing. In its design and development phase, the facility benefited from the support of Partners in the Climate and Clean Air Coalition.

#### Initial Focus on Methane

Reducing methane emissions is attractive because methane, a byproduct of a range of industrial and agricultural processes, is a highly potent GHG with a global warming potential about 25 times that of CO<sub>2</sub>. Thus, the reduction of one ton of methane is equivalent to the reduction of 25 tons of CO<sub>a</sub>.

Methane reduction actions alone could lead to approximately 0.3°C in avoided

global warming by 2050. Implementation of technically feasible and cost-effective methane reduction measures would not only slow down the rate of climate change over the next decades, but also contribute to improvements in local air quality and food security. Additionally, captured methane can be burned for cooking or electricity generation, contributing to increased access to clean energy.

Over the next 20 years, methane emissions are expected to grow by 19 percent, accounting for nearly half of all warming over this period. In its Global Non-CO, GHG Emissions 1990-2030 report, the U.S. Environmental Protection Agency estimates that about 7,000 million tCO<sub>2</sub>e of methane was emitted globally in 2010. In the absence of concerted action, this figure is expected to grow to close to 8,000 million tons by 2020 and more than 8,500 million tons by 2030.

#### Price Guarantee on Carbon and Auction

To respond to this opportunity, the PAF will take advantage of existing tools and experience from the CDM and related carbon markets to deliver financing, in the form of a price guarantee, to projects that mitigate climate change. The guaranteed floor price will be delivered through an auction of put options supported by donor funding. The competitive nature of the auction used to allocate the price guarantee will reveal the minimum price required by the private sector to invest in climate change mitigation projects, thereby maximizing the impact of public funds and achieving the highest possible volume of climate benefits per dollar. The very nature of the put option means that the facility's resources will only be disbursed after the ERs have been independently verified, making the PAF a pay-for-performance facility.

The PAF's put options will be embedded into puttable bonds issued by the WBG. The institution's obligation under the bonds will be backed by the PAF. Under the terms

of the bond, the bondholders will have the right, but not the obligation, to sell the ERs generated by the underlying projects to the PAF at a pre-agreed price, the put option strike price.

This optionality allows put option owners to benefit if carbon prices in international markets rise above the strike price. In such a case, the PAF will have achieved its objective (to stimulate private sector investment in mitigation) at no cost to it. If carbon prices fall, however, the put option owner has the right to sell the carbon credits to PAF at the strike price. Either way, the price guarantee has provided the private investors with the financial incentive to fund projects.

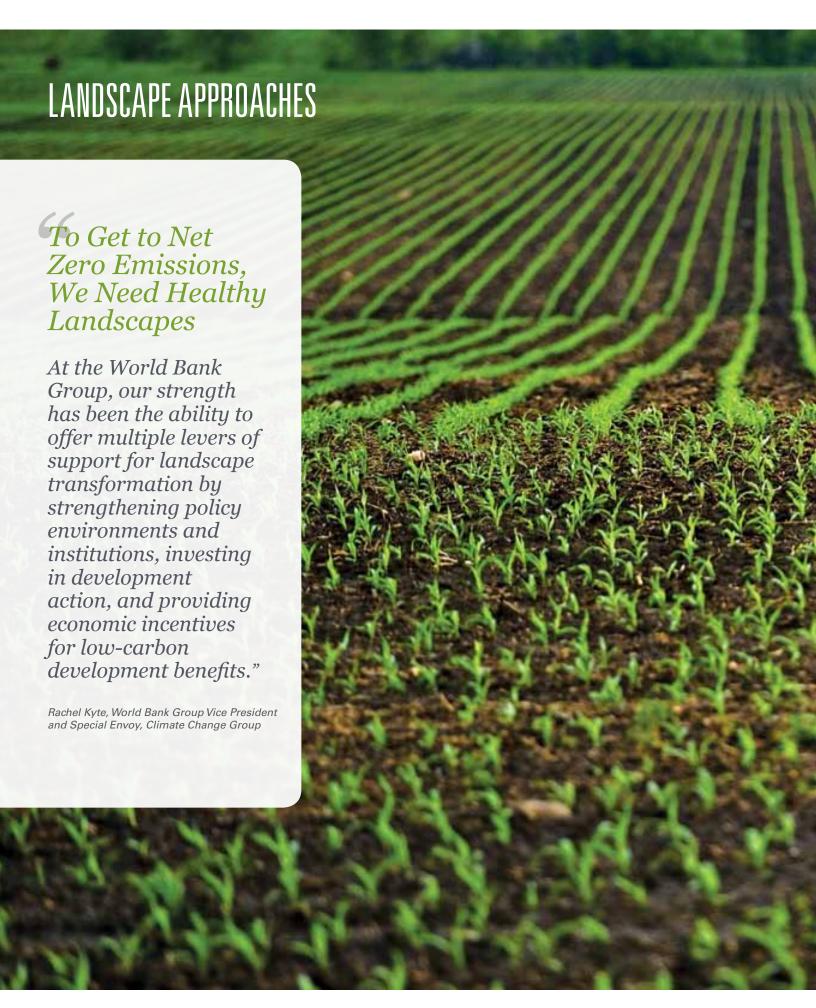
Additionally, the PAF will disburse its resources only against independently verified ERs, using existing carbon auditing standards such as the CDM or voluntary standards such as the Verified Carbon Standard or Climate Action Reserve. This pay-for-performance feature is attractive for governments facing expanding funding needs and scrutiny on achievements. The combination of an auction process and payments based on performance maximizes value for public money.

#### Looking Ahead

The PAF's first auction is targeted to be completed in the first half of 2015 after bidders have been trained on how to use an online auction platform. It will focus on methane reduction projects such as landfill gas, animal waste, and wastewater.

The PAF is backed by several government donors—Germany, Sweden, Switzerland, and the United States—and has a capitalization target of \$100 million. The facility has a strong potential for replication and quick scaling up in methane or other sectors.

<sup>6</sup> Methane Finance Study Group Report: Using Pay-for-Performance Mechanisms to Finance Methane Abatement, April 2013.





www.forestcarbonpartnership.org

### Forest Carbon Partnership Facility

The FCPF became operational in June 2008 and 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 drawing lessons from this early implementation phase. The FCPF has created a framework and processes for REDD+ readiness, which helps countries get ready for future systems of financial incentives for REDD+.

#### Achievements

In its sixth year of operation, the FCPF made progress shaping a diverse portfolio of landscape-level programs for the Carbon Fund. These programs can generate high-quality and sustainable ERs at scale, deliver environmental and community benefits, and yield important lessons.

The adoption of the Methodological Framework for the Carbon Fund in December 2013 marked an important milestone that spurred competition from REDD+ countries to present early ideas and full-fledged Emission Reduction Program Idea Notes (ER-PINs). In 2014, 10 new and diverse ER-PINs were selected, bringing the total to 11 ER-PINs in the Carbon Fund pipeline.

In 2014, the Carbon Fund attracted high interest from REDD+ countries, and additional country observers joined meetings to benefit from the unique opportunity these provide—to learn about countries' experiences in designing large-scale, cross-sectoral, multi-institutional programs that

bring public and private sector partners together around forest conservation and sustainable land use. As the Carbon Fund is moving toward operationalization and eventually implementation of programs, its role will become even more relevant in generating on-the-ground insights for piloting performance-based mechanisms for REDD+ and informing international negotiations in the UNFCCC process.

Remarkable progress was made under the Readiness Fund as well. Eight Readiness Preparation Proposals (R-PPs) were assessed by the Participants Committee, allocating a total of just over \$30 million of readiness grant funding to REDD+ countries. In 2014, the FCPF grew to 47\* REDD+ Country Participants, 45 of which have endorsed R-PPs. This demonstrates countries' high interest to benefit from the partnership's track record of cross-country collaboration and capacity building, and to participate in the partnership's inclusive governance structure. It also confirms the partnership's cooperative spirit and central role in the REDD+ community.

The caliber of new R-PPs presented also demonstrated to what extent new countries are able to build on the wealth of knowledge generated by countries with more advanced REDD+ readiness. Three more of these frontrunner countries advanced to the mid-term stage in 2014, providing a wealth of lessons on REDD+ readiness implementation. Across the portfolio of REDD+ countries, substantial progress was made to advance from R-PP endorsement to readiness preparation grant signature and implementation. An additional 10 grants were signed, including five through new Delivery Partners (the Inter-American Development Bank and the United Nations Development Programme), almost doubling the total number of countries that have reached this second readiness milestone.

\* Bolivia and Gabon are inactive.

45 REDD+ countries have endorsed their readiness plans

#### The Readiness Fund

With assistance from the Readiness Fund, a \$370 million fund committed by 15 public donors, each participating country develops policies and systems for REDD+. This involves adopting national strategies, developing reference emission levels, designing MRV systems, and setting up REDD+ national management arrangements, including proper safeguards.

As of December 2014, 45 countries had prepared R-PPs. Approximately \$200 million had been allocated to them, and 24 countries had signed grants to implement their proposals.

#### The Carbon Fund

The FCPF Carbon Fund, a \$458 million fund committed by 11 public and private contributors, became operational in May 2011. It will provide payments for verified ERs from REDD+ programs in up to 12 countries that have made considerable progress toward REDD+ readiness. The readiness, investment, and performancebased payment phases are not purely sequential but will 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 ERPA with the Carbon Fund.

The Carbon Fund will deliver ERs to the financial contributors of the fund pro rata based on their share of capital.

#### Looking Ahead

Looking ahead to 2015, REDD+ countries will focus on operationalizing their emerging REDD+ strategies and their proposals for large-scale REDD+ programs. At the readiness stage, this means building multi-sectoral national REDD+ strategies that prioritize key drivers of deforestation and forest degradation, and proposing actionable strategy options to address the underlying barriers such as natural resource rights, land tenure, and governance. For Carbon Fund countries, this means turning ER-PINs into actionable programs, which can leverage public and private sector expertise as well as financial support, thus building investment packages that generate ERs and ultimately RBF.

Meanwhile, the FCPF facility management team will focus on finalizing the legal and business standards and processes to support carbon finance transactions at scale and providing customized technical support to countries.



In April 2014, the Carbon Fund hosted its 9th meeting in Brussels, Belgium, in which Participants selected programs in the Democratic Republic of Congo, Ghana, Mexico, and Nepal into the Carbon Fund pipeline.

In June 2014, at the 10th meeting of the Carbon Fund in Bonn, Germany, Participants selected programs in Chile, the Republic of Congo, and Vietnam into the Carbon Fund pipeline.

In October 2014, the Carbon Fund hosted the 11th meeting in Washington, D.C., where the Participants selected Guatemala, Indonesia,\* and Peru's proposals for ER programs into the Carbon Fund

### Meetings Held in 2014



In July 2014, the Participants Committee hosted its 17th meeting in Lima, Peru, where three countries—Belize, Sudan, and Uruguay—were accepted into the partnership, expanding it to 47 countries. Five countries (Belize, Madagascar, Paraguay, Sudan, and Uruguay) received initial grant allocations. Costa Rica, Ghana, and Indonesia presented their mid-term progress reports and were each allocated an additional \$5 million.

In November 2014, at the 18th Participants Committee meeting hosted in Arusha, Tanzania, the Participants Committee approved the General Conditions for a future ERPA—the legal underpinning for large-scale carbon transactions. Liberia presented its mid-term progress report and was allocated additional funding of \$5 million to support readiness.

<sup>\*</sup>Invitation into the CF pipeline was conditional based on the presentation of a revised ER-PIN.

#### **READINESS FUND 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 FUND PARTICIPANTS**

Government of Australia

BP Technology Ventures

Government of Canada

European Commission

Government of France

Government of Germany

Government of Norway

Government of Switzerland

The Nature Conservancy

Government of the United Kingdom

Government of the United States of America







### BioCarbon Fund Initiative for Sustainable Forest Landscapes

The BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL) seeks to promote the reduction of GHG emissions from the land sector, deforestation, and forest degradation in developing countries (REDD+) and sustainable agriculture, as well as smarter land-use planning, policies, and practices.

This multilateral facility deploys RBF to incentivize changes at the landscape level. Taking a landscape approach, the ISFL is building a diverse portfolio of programs that have a significant impact and transform rural areas by protecting forests, restoring degraded lands, enhancing agricultural productivity, and improving livelihoods and local environments.

In September 2014, ISFL programs in Ethiopia and Zambia were officially opened, allowing funding to flow and program activities to commence. Programs in Colombia and Indonesia are currently being considered for inclusion in the ISFL.

Established in 2013, the governments of the United Kingdom, Norway, Germany, and the United States have made commitments to the ISFL totaling about \$380 million. In 2014 alone, commitments to the ISFL totaled \$185 million.

#### Landscape Approach

Operating at the jurisdictional landscape scale is considered one of the key design features of the ISFL. It is a prerequisite that national or jurisdictional governments consider the trade-offs and synergies between different uses of land that may compete in a jurisdiction—such as agriculture, energy, and forest protectionand successfully identify integrated solutions that serve multiple objectives.

Adopting a landscape approach means implementing a development strategy at scale that is climate-smart, equitable, productive, and profitable while striving for positive environmental, social, and economic impacts.

#### Public-Private Partnership

Another key design feature that sets ISFL apart from previous forest initiatives is the important role that the private sector plays in spurring innovation; leveraging cutting-edge expertise and knowledge; and mobilizing the capital necessary to scale up successful land-use practices and accelerate the greening of supply chains.

Global and local companies in the agricultural and food sectors increasingly recognize the value of prioritizing sustainability within their operations to secure long-term supply chains and reduce investment risksevidenced by public commitments to zerodeforestation supply chains, including those made in the UN Declaration on Forests endorsed during the UN Climate Summit in 2014.

The initiative is designed to work alongside a wide range of private actors; from multinational corporations to large national entities, small and medium enterprises, and smallholder farmers. These private sector actors are incentivized to accelerate forest-proof sourcing of commodities and to redirect market forces toward more sustainable and equitable land management practices.

An example of such an effort is the partnership between ISFL and Cargill in Zambia. Cargill endorsed the UN Declaration on Forests, committing to improved management practices, which is expected to result in reduced deforestation across supply chains. ISFL is collaborating with Cargill Zambia on cotton supply chains to reduce emissions from deforestation in the country.

#### Results-Based Finance

The ISFL will provide countries with the following types of financing:

- 1. Grant funding and technical assistance (BioCFplus) to support transformational change in developing countries, leading to implementation of their REDD+ strategies and to enabling environments that change the way land-use decisions are made. Grants will be disbursed through BioCFplus based on performance milestones.
- 2. Results-based payments for achieved ERs (BioCFT3). The main metric for results-based payments will be carbon ERs, but other economic, environmental, and social indicators may be monitored as well. Carbon payments (including some upfront payments) will be made through the BioCFT3.

The ISFL aims to test carbon accounting at a landscape level, including forest, agriculture, and possibly energy into a comprehensive methodological approach on which payments will be based.

#### Looking Ahead

The ISFL builds on a decade's worth of experiences from pilot projects under the BioCarbon Fund. These earlier pilots created knowledge on how to quantify ERs from different land-use activities as well as lessons on land tenure issues. financing arrangements, and benefitsharing schemes that are essential for the long-term success of the ISFL.

Going forward, the ISFL will apply this body of knowledge from project-level interventions to large-scale programs that partner with the private sector to incentivize transformative change across the landscape.

### WHO WE ARE



### **ACKNOWLEDGMENTS**

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