

# Carbon Finance

for sustainable development



2015  
ANNUAL  
REPORT

## OUR MANDATE

*Deploy innovative financial solutions and technical expertise to deliver results-based climate finance for low carbon growth in World Bank Group client countries. Support design of domestic climate policy and build capacity for clients to price carbon through either market-based mechanisms like emissions trading schemes or taxes.*

The report covers the carbon-related funds, facilities, and financial products managed by the World Bank Group between January 1, 2015 and December 31, 2015. An online version of this report is available at: [www.worldbank.org/climatefinance](http://www.worldbank.org/climatefinance)

**Note:** All dollar amounts are in U.S. dollars (\$) unless otherwise indicated. The euro/U.S. dollar exchange rate used in this report is 1.20, the pound sterling/U.S. dollar exchange rate used in this report is 1.55, and the NOK/U.S. dollar exchange rate used in this report is 0.13. These exchange rates were used by the carbon funds and facilities in reporting to their participants in 2015.

All greenhouse gas emission reductions are reported in metric tons of carbon dioxide equivalent (tCO<sub>2</sub>e).

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

Carbon finance is providing solutions and integrating climate action into development work



# ACRONYMS

BioCF	BioCarbon Fund	MRV	Monitoring, Reporting, and Verification
CDM	Clean Development Mechanism	MWP	Methodology Work Program
CER	Certified Emission Reduction	NCM	Networked Carbon Markets
Ci-Dev	Carbon Initiative for Development	NGO	Nongovernmental organization
COP	Conference of the Parties	PA	Partnership Assembly (PMR)
CO <sub>2</sub>	Carbon Dioxide	PAF	Pilot Auction Facility for Methane and Climate Change Mitigation
CPF	Carbon Partnership Facility	PC	Participants Committee (FCPF)
ER	Emission Reduction	PMR	Partnership for Market Readiness
ERPA	Emission Reduction Purchase Agreement	POA	Programme of Activities
ETS	Emissions Trading System	RBF	Results-Based Finance
EU	European Union	REDD	Reducing Emissions from Deforestation and Forest Degradation
FCPF	Forest Carbon Partnership Facility	REDD+	REDD plus Conservation, Sustainable Management of Forests, and Enhancement of Forest Carbon Stocks
GHG	Greenhouse Gas	RGGI	Regional Greenhouse Gas Initiative
INDC	Intended Nationally Determined Contribution	tCO <sub>2</sub> e	Metric tons of Carbon Dioxide Equivalent
IP	Indigenous Peoples	TCAF	Transformative Carbon Asset Facility
ISFL	Initiative for Sustainable Forest Landscapes (BioCF)	WBG	World Bank Group
JI	Joint Implementation		
LDC	Least Developed Country		
MRP	Market Readiness Proposal (PMR)		

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*“The world needs to find effective ways to reduce carbon pollution. We must design the best ways to price carbon in order to help cut pollution, improve people’s health, and provide governments with a pool of funds to drive investment in a cleaner future and to protect poor people.”*

Dr. Jim Yong Kim  
President  
World Bank Group



## BUILDING ON THE PARIS CLIMATE AGREEMENT

**John Roome**  
Senior Director, Climate Change  
World Bank Group

Last year was historic in many ways, ending on a high note in Paris with nations around the world agreeing to limit the global temperature rise this century to well below 2° Celsius.

By the time the COP21 concluded, 187 countries had submitted their proposals on climate action in their Intended Nationally Determined Contributions (INDCs). Implementation of these INDCs is the foundation for the success of the Paris Agreement. We were happily surprised to see the extent to which language enabling the establishment of a new carbon market was ultimately included in the agreement. It essentially acknowledges that markets can help countries get on a low-emission development pathway and also enhance collective ambition.

We were also excited to see that countries signed off on wording in the final agreement that explicitly recognizes the role that land use—forests in particular—has in addressing climate change. After decades of work, the technical and scientific rules to build forest protection plans, the significance of REDD+, and the vital contributions that forests and landscapes can make have all been recognized on the international stage.

And while we cannot expect that carbon markets will be rebuilt in the near future, the Paris Agreement paves the way for a renewed international carbon market that will look and be different. Some of the parameters and “rules of the game” may change for carbon markets, but we at the World Bank Group are well-positioned—with decades of experience and a solid set of procedures and infrastructure in place—to inform the next steps:

- **Countries will continue to design, test, and implement market-based domestic carbon pricing initiatives.** Each country will find a solution that fits its circumstances—whether it is cap and trade, a carbon tax, or something else.
- **Countries will need to create the infrastructure necessary to compare and connect a wide range of climate actions.** And they will have to get ready to trade carbon assets and emission reductions under the rules of the new agreement and other bilateral, regional, or club-like frameworks.

We have been supporting carbon market development and building capacity for carbon pricing instruments for 15 years. This has involved implementing about 150 mitigation projects on the ground and piloting new approaches to deliver innovative market- and results-based carbon instruments. We will continue our work of balancing implementation and innovation through our growing list of next generation carbon market initiatives.

We have the **Partnership for Market Readiness**, which helps countries establish market-based carbon pricing mechanisms. For example, the PMR is supporting the implementation of carbon taxes in Chile and South Africa, and the development of national cap-and-trade systems in China and Kazakhstan. We are helping many other countries prepare and implement innovative instruments to scale up climate change mitigation domestically, and share lessons learned.

Key to implementing the country climate plans and keeping global warming under 2° Celsius is to dramatically scale up climate action. The **Carbon Partnership Facility** is one initiative that focuses on scaled up mitigation programs to catalyze investment for low-carbon growth. Also, the **Carbon Initiative for Development** is piloting new projects that focus on energy access in previously underserved communities, such as poor countries in Africa, with the goal to test what works and could also be successfully done elsewhere. Both are examples of Results-Based Finance, meant to comply with the provisions on market mechanisms in the Paris Agreement.

We are also mobilizing climate finance for forests and landscapes on a larger scale. The **Forest Carbon Partnership Facility** and the **BioCarbon Fund Initiative for Sustainable Forest Landscapes**—with combined financial contributions of more than \$1.4 billion—collaborate with over 50 forest countries to reduce emissions from deforestation and forest degradation. Through these efforts, the release of millions of tons of emissions into the atmosphere can be avoided and, just as important, the investments made and capacity built will improve livelihoods, reduce poverty, and ensure the long-term sustainability of these countries’ economies.

Continuing our support for scaled up mitigation, we announced the new **Transformative Carbon Asset Facility** on the first day of COP21 in Paris. The facility will help create and monetize the next generation of carbon credits, including those achieved through policy actions. This will be important in the context of carbon assets created under a new regime, for which TCAF can act as a catalyst.

Ultimately, it will be the private sector that makes the massive investments needed for a sustainable future. To promote these green investments, we are working to put in place a robust and predictable price on carbon, make climate opportunities more investor-friendly, and leverage private capital. For example, last July, the new **Pilot Auction Facility** held its first auction to support methane projects with the participation of 28 private sector bidders from around the world. And in Paris, the **Carbon Pricing Leadership Coalition** was officially launched, bringing together governments, businesses, and NGOs who all agree and advocate that carbon pollution should be priced fairly, effectively, and efficiently.

Looking ahead, the **Networked Carbon Markets Initiative** is working to create the institutions and services to link the different climate actions that countries are now designing and implementing. By making voluntary cooperation workable—through the establishment of a basis to compare different climate actions—assets could be transferred from one jurisdiction or country to another.

Lessons learned from all these initiatives will ensure effective implementation of mitigation actions and contribute to new, innovative approaches to deliver climate finance. While we cannot underestimate the challenges involved, we have a hub of knowledge and pilots to test approaches that document country process and progress, and pioneer solutions that we hope will help deliver on the Paris Agreement.

We are proud to share our highlights and milestones in this annual report, and we invite you to explore this work further online and through social media, and engage in conversation with us in 2016 and beyond.





Global Emissions Covered by a Carbon Price

*“Putting a price on carbon is now widely acknowledged as a priority. Helping countries get it right will be key, and market-based approaches can help with that.”*

Vikram Widge  
Head  
Carbon and Climate Finance  
World Bank Group



**12%**  
**7 BILLION**  
tons of CO<sub>2</sub> covered  
by carbon price

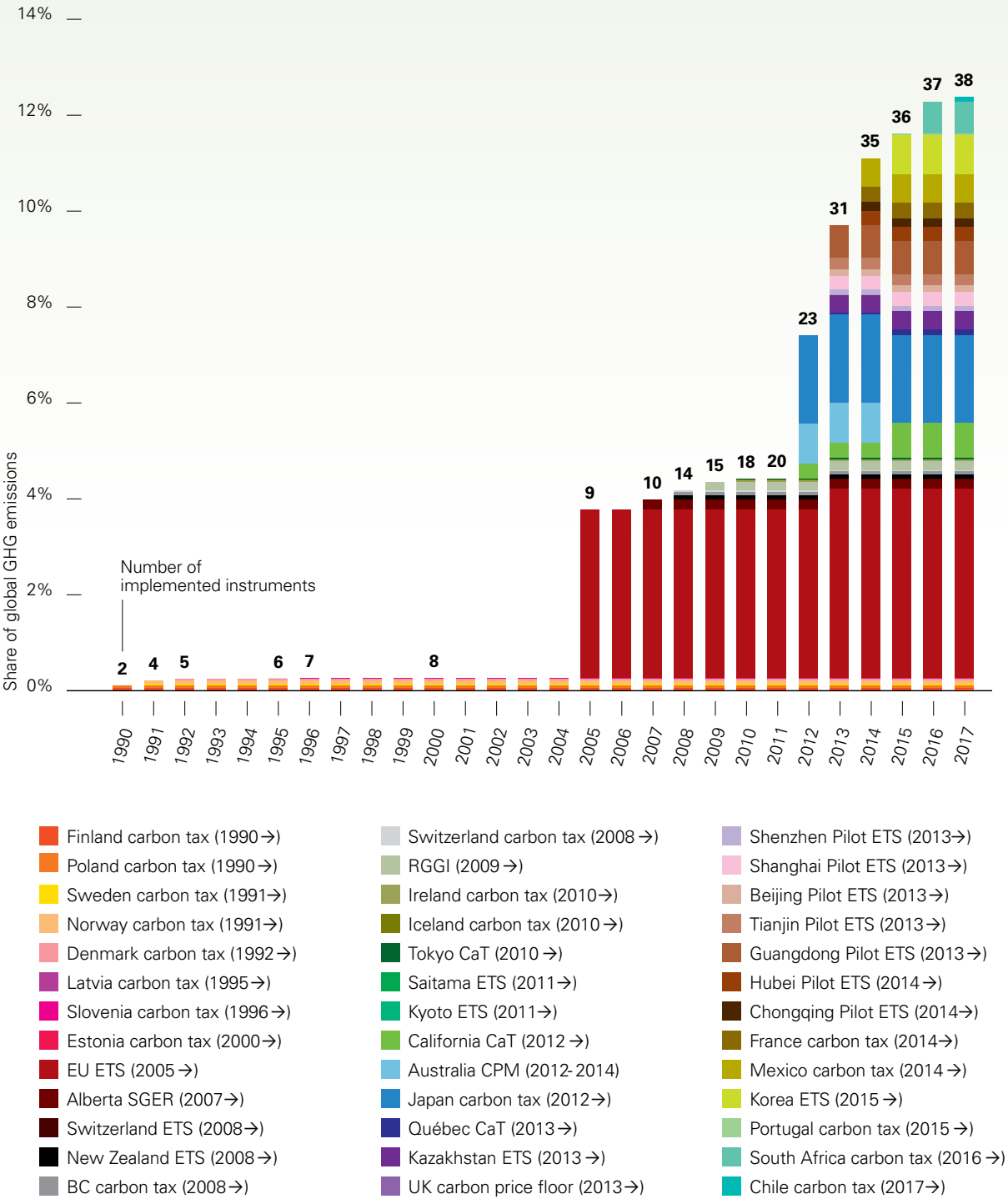
THE WORLD REACHED AN ACCORD ON CLIMATE CHANGE

Representatives of 195 nations signed on to the landmark Paris climate agreement on December 12, 2015. Each country pledged to lower greenhouse gas (GHG) emissions in what could mark a turning point in the global effort to slow climate change. The deal recognized the role of incentives in reducing emissions, including

carbon pricing. Currently, about 40 countries and 23 cities, states, and regions are using a carbon price—their outputs represent only 12 percent of annual GHG emissions. As part of the Paris deal, more than 90 developed and developing countries have included carbon-pricing schemes among the actions they intend to take.

Climate change could have a significant impact on poverty levels. The World Bank Group (WBG) is working with 130 countries to help implement “climate-smart” development and will increase investments in climate-related projects by as much as \$29 billion a year by 2020—a one-third increase over current levels.

Regional, national, and subnational carbon pricing instruments already implemented or scheduled for implementation: share of global GHG emissions covered



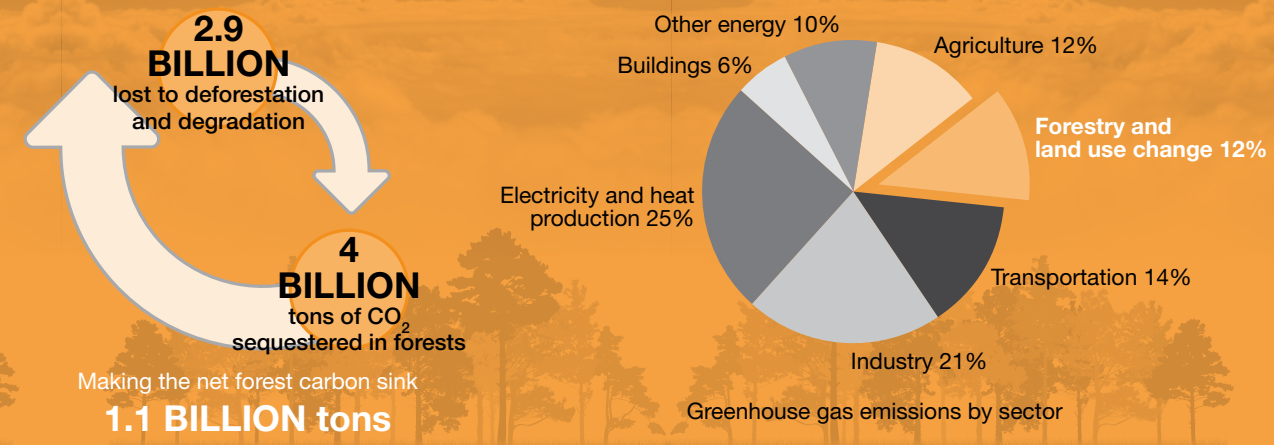
**Note:** Only the introduction or removal of an Emissions Trading System (ETS) or carbon tax is shown. Emissions are given as a share of global GHG emissions in 2012. Annual changes in global, regional, national, and subnational GHG emissions are not shown in the graph. Data on the coverage of the city-level Kyoto ETS are not accessible; its coverage is therefore shown as zero.

Source: State and Trends of Carbon Pricing 2015

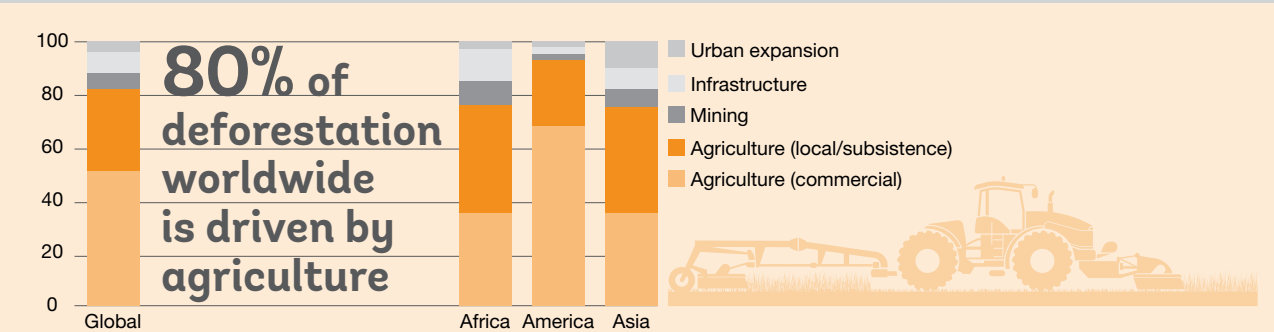


# FORESTS SLOW CLIMATE CHANGE AND INCREASE RESILIENCE

Forests provide a critical carbon sink. It is eroded however by deforestation and forest degradation.



Sustainable management of rural landscapes can reduce pressure on forests.



About 2 billion hectares of degraded forest land could be restored to functional, productive ecosystems that help fight climate change.

In Niger, planting nitrogen-fixing trees among crops increased sorghum yields by 20–85 % and millet yields by 15–50%, while enhancing people’s resilience in times of drought.

By integrating trees on their farms, cattle ranchers in Colombia, Costa Rica and Nicaragua increased average milk productivity by 18%, decreased soil erosion by 88%, and increased their net income per hectare by 55%.

Restoring just 350 million hectares of forest could produce an estimated \$170 billion of yearly benefits in watershed protection, agricultural productivity, and forest products.

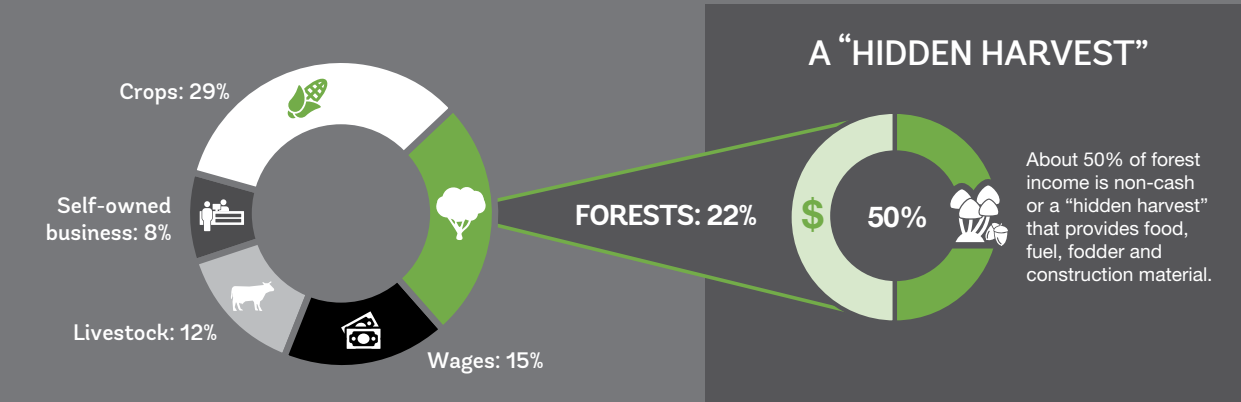
In Ethiopia, the restoration of native forest in Humbo will absorb about 880,000 metric tons of CO<sub>2</sub> over the next 30 years, generating carbon payments and income from forest products.

Sources: Pan, Y. et al. (2011). *A large and Persistent Carbon Sink in the World’s Forests*; IPCC (2014). *Summary for Policymakers, Climate Change 2014: Mitigation of Climate Change*; Hosonuma N. et al. (2012). *An assessment of deforestation and forest degradation drivers in developing countries*. Environmental Research Letters; Global Partnership on Forest Landscape Restoration (2011); World Bank (2011). *Climate-smart Agriculture: a call to action*; World Bank (2008). Colombia, Costa Rica, and Nicaragua—Integrated Silvopastoral Approaches to Ecosystem Management Project—Implementation Completion Report; New Climate Economy (2014). *Better Growth, Better Climate: The New Climate Economy Report*; World Bank (2013) Ethiopia Humbo Community Based Natural Regeneration Project—Implementation Status Result Report.

Forests and trees provide vital resources to **1.3 billion people.**

## FORESTS ARE AN IMPORTANT SOURCE OF INCOME

In developing countries, forest income is second only to crops for rural communities with access to forests.



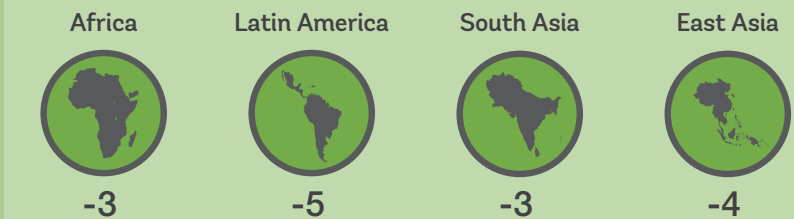
## 1 IN 11 PEOPLE

with access to forests are lifted **OUT OF EXTREME POVERTY** thanks to forest resources.



## FOREST INCOME REDUCES INEQUALITY

Regions lower their scores for the Gini coefficient – a measure of inequality – by several percentage points when income from forests is included.



Sources: FAO (2014). *State of the World’s Forests 2014*; Noack, F. et al. (2015). *Responses to Weather and Climate: A Cross-Section Analysis of Rural Incomes*. World Bank Background Paper.



# INNOVATION AND CARBON FINANCE

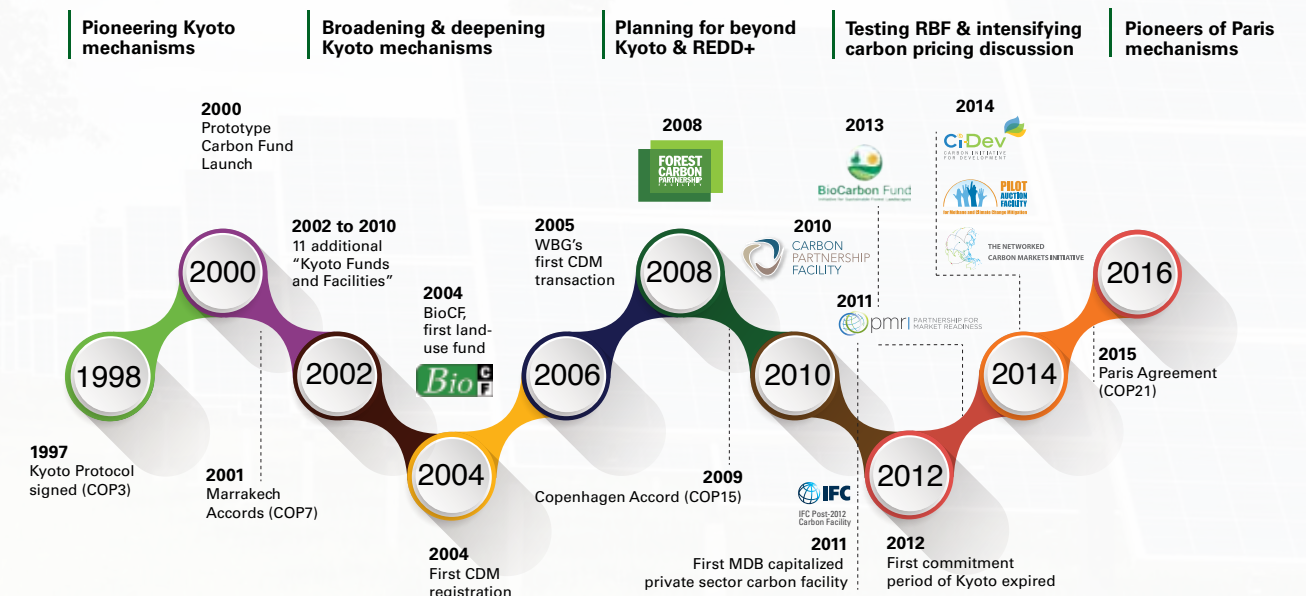
Innovation has been a key factor of the WBG's work to support carbon markets for over 15 years, providing groundbreaking solutions, tools, and instruments that mitigate climate change. This work included launching the first-ever carbon fund in 2000.

Today, innovation continues: we are spearheading the discussion on how to price carbon, testing new models for Results-Based Finance (RBF), and continuing to

develop scaled up approaches to REDD+ across landscapes.

These three themes, discussed in the next section, have the potential to expand our operations and make them more efficient and effective. Most importantly, by succeeding in these areas, millions of people around the world will benefit from improved health and quality of life, and billions of tons of GHG emissions will be cut.

## Pioneering History of Carbon Finance at WBG





# EVOLUTION OF CARBON PRICING AT THE WORLD BANK GROUP

*Putting a price on carbon is a key component of global efforts to address climate change. It should be an integral part of governments’ sustainable growth policies. Pricing carbon also offers a “triple dividend”: giving the private sector the certainty and predictability needed to make long-term decisions, driving investment in clean technologies, and improving the environment and people’s health through reduced GHG emissions.*

**Governments—at both the national and local level—and companies are increasingly turning to carbon pricing to reduce their emissions and meet their mitigation targets.** This is particularly true in the wake of the climate action plans made by countries in the run-up to and during the 21<sup>st</sup> session of the Conference of the Parties (COP) in Paris, the Intended Nationally Determined Contributions (INDCs). Once the Paris Agreement is ratified by the parties, an INDC becomes a Nationally Determined Contribution. An INDC is a country’s post-2020 plan for action on climate change.

**But differing political circumstances and development priorities mean that countries and businesses require tailored support to identify, assess, design, and implement successful carbon pricing policies.** There are several pieces that need to fall into place for this to happen. Countries must lay a technical foundation, including key tools and services for the readiness phase. Countries must also move from design to political engagement and support, where key challenges commonly arise. Finally, as governments design a carbon pricing system, they may want to consider linking up with other systems to benefit from lower-cost reduction opportunities and increased efficiency. Sometimes these pieces develop sequentially and sometimes in parallel, depending on the country.

**To advance well-designed and appropriate carbon pricing systems around the world, the WBG’s support has evolved over time. In 2011, the Partnership for Market Readiness (PMR) was created to support 18 emerging economies with financial and technical assistance to prepare and implement carbon pricing instruments.** This assistance includes readiness support, which means that countries assess various

options for pricing carbon, such as a carbon tax, an ETS, or other measures. Over 30 countries—13 of which are participants with carbon pricing mechanisms already in place, such as the EU ETS—meet regularly and share lessons learned and suggestions for countries that are deciding which approach best fits their circumstances. For example, the PMR has been instrumental in guiding and offering financial support to South Africa and Chile in developing their carbon taxes and to China in developing its national ETS.

Today, the PMR is looking closely at the INDCs to see how they can support countries in implementing their post-2020 mitigation scenarios, and is developing a number of reports on technical matters such as carbon pricing modeling and other analytical products.

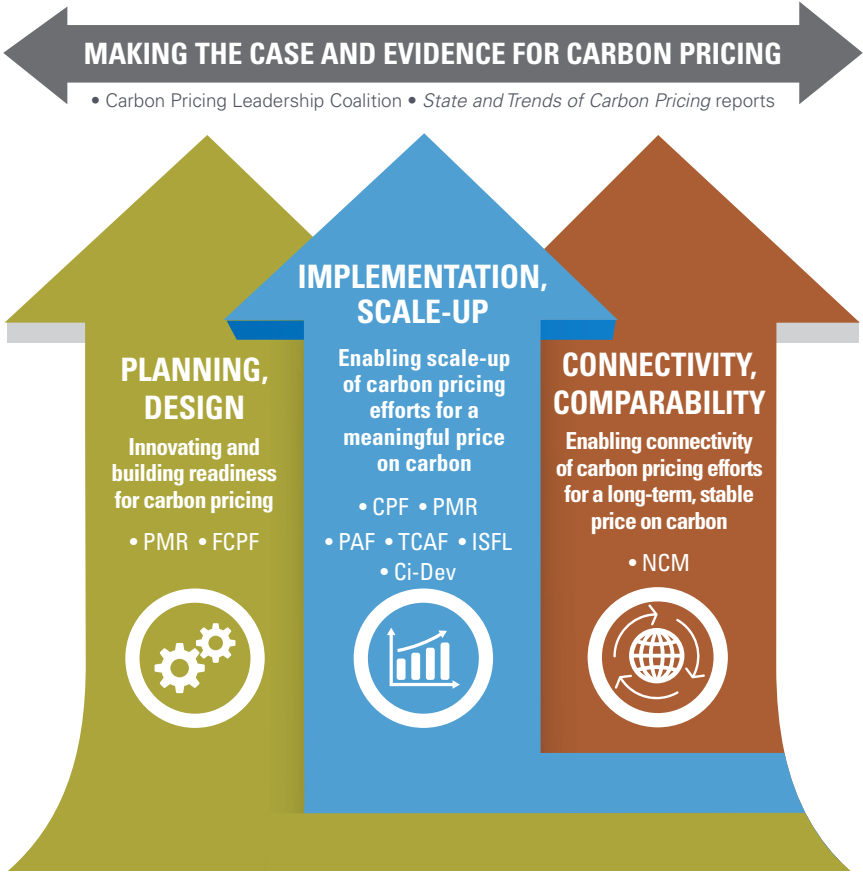
**As a complement to the PMR’s work on the ground and as a natural progression toward an international political agreement on carbon pricing, the Carbon Pricing Leadership Coalition was launched at COP21 to provide a platform to expand the collaboration between governments, businesses, and nongovernmental organizations (NGOs) worldwide and broaden the scope and place of effective carbon pricing.** The 20 governments and over 90 businesses and NGOs that have joined the Carbon Pricing Leadership Coalition are creating a space for high-level political dialogue as well as sharing evidence for successful carbon pricing, mobilizing progressive businesses to support good policy, and facilitating conversations on global, regional, and national levels on how to put in place successful pricing policies, despite the obstacles. This includes tackling common political challenges that arise in creating a carbon pricing system, such as loss of competitiveness, how to reduce

or altogether remove fossil fuel subsidies, mitigate impacts on the poor, and use of carbon pricing revenues.

**As countries develop their various carbon pricing approaches, they are faced with the challenge of how to link or tie these different solutions together.** It is clear that a networked carbon market will be more efficient than a patchwork of national or even statewide solutions that are not connected. Under a networked configuration, carbon prices will probably be more stable and emission reductions (ERs) be achieved at a lower cost.

**With this in mind, the Networked Carbon Markets (NCM) Initiative was created in 2014 to work with governments, the private sector, and civil society to develop a post-2020 infrastructure to link heterogeneous climate actions.** The aim is to help create a connected international carbon market that is liquid and delivers financing for services and institutions that are needed to enhance transparency, comparability, and fungibility of different carbon assets.

**With these three complementary initiatives, the WBG is supporting carbon pricing on various levels and from many angles to ensure that carbon pricing is taken into account both by the public and private sectors in client countries worldwide as well as mainstreamed into its operations.** All three initiatives are developing important knowledge products and platforms to facilitate dialogues on several levels, to make sure carbon pricing instruments are scaled up and used to cover more than today’s 12 percent of annual global GHG emissions, and as a key tool to shift economic growth toward a more sustainable path.



## Supporting China’s Climate Action

*In the past years, China has demonstrated leadership in climate action in many ways—from testing pilots on a jurisdictional level to planning a national ETS for 2017. China has also announced that it intends to achieve peak carbon dioxide (CO<sub>2</sub>) emissions around 2030 and increase the share of non-fossil fuels to 20 percent in its primary energy mix by the same year.*

To do so, China has put forward an array of climate policies, including setting mandatory national emission targets in its Five-Year Plan, pricing carbon through its ETS, increasing clean energy investments, and accelerating energy efficiency measures, to name just a few.

**While certainly not the only one, China’s effort to develop a national carbon**

**market is an important example of the country’s climate leadership.** Building on the experience of seven ETS pilots currently operational, the PMR has provided China with an \$8 million grant to support the National Development Reform Commission in developing a national ETS and in carrying out analytical work and consultations on several essential components of the ETS design, including the role of state-owned enterprises and the power sector.

**China’s national ETS will be one of the most important means to achieving the mitigation targets put forward in the country’s INDC.** In addition, many aspects of the national carbon market design—such as setting caps or interacting with government policies and development objectives—are closely linked with the country’s mid- and long-term mitigation goals.

**With this in mind, the PMR also provides analytical support that has contributed to the development of China’s INDC and facilitated the process of presenting**

**and disclosing the key indicators, components, and assumptions that are used to model mid- and long-term scenarios.** One of the products of this support—the discussion paper *Pursuing an Innovative Development Pathway: Understanding China’s INDC*—has also helped better understand how China’s INDC could be seen as a powerful vehicle for innovation and help shift the country toward a new development pathway.

**Country INDCs—most of which outlined actions to be taken by 2025 or 2030—were a cornerstone of the Paris Agreement.** Many of them, in particular those put forward by developing countries, include both specific targets and climate policy actions being considered within the countries’ overall development framework. The integration of these policies into the national economic and social development plans is challenging, and the PMR’s comprehensive support to China aims to help address those challenges.



# RESULTS-BASED FINANCE IS TESTING NEW WAYS TO REDUCE EMISSIONS

*Results-based approaches to climate finance are acquiring greater prominence in the international development arena. The WBG has been testing different uses of this approach in a variety of sectors, including energy. Carbon finance is one such example, and together with our partners and donors we are now exploring new ways to apply RBF in our work.*

**As a mitigation tool, RBF is still evolving.**

In 2010, we operationalized the Carbon Partnership Facility (CPF) to use RBF by paying for emission reductions on a programmatic scale. Forest funds and facilities also use RBF as well as newer carbon initiatives like the Carbon Initiative for Development (Ci-Dev), the Pilot Auction Facility for Methane and Climate Change Mitigation (PAF), and the recently announced Transformative Carbon Asset Facility (TCAF).

**Each of these carbon initiatives seeks to expand the scale and reach of RBF.** They will not only contribute directly to climate change mitigation through their activities, but also test what works and share useful lessons and experiences with the international community. The WBG and others will draw on the latter to replicate successful approaches elsewhere with the view to scaling them up.

The premium in the first auction was set at

**\$0.30**

per Certified Emission Reduction (CER).

Winning quantities ranged from

**100,000 to 2M CERs.**

Bidders paid \$30-\$600K for the PAFERNs.



**The CPF is using the traditional approach of RBF by catalyzing investment in clean technologies through payments for reduced emissions.** Recently, the CPF has begun developing new conceptual and methodological approaches for the next generation of carbon crediting instruments to support broader sectoral transformation beyond a program-by-program level, and where implementing countries aim to achieve more than simply offset emissions.

**The Ci-Dev likewise uses RBF to improve access to low-carbon energy solutions in poor countries by offering payments linked to reduced emissions.** It is testing various models to facilitate this context to see whether and how carbon RBF can be used in energy access, and to distill lessons learned to promote the expansion and replication of successful models. It is absolutely vital that these pilots be innovative and represent a broad diversity of approaches to demonstrate the relevance and impact of carbon RBF to energy access stakeholders.

**While the PAF also uses RBF, its approach is different.** As a pay-for-performance mechanism that stimulates private investment, the PAF aims to demonstrate a new, cost-effective climate finance mechanism by providing a guaranteed floor price on emission reductions. It determines this floor price by auctioning tradable put options, which give winners the right, but not the obligation, to sell eligible carbon credits to the PAF. In July 2015, the PAF conducted its first auction for price guarantees—totaling 8.7 million tons of ERs—and is planning a second auction in 2016. This form of RBF tests the willingness of the private sector to reduce emissions if the price of carbon is stable and predictable.

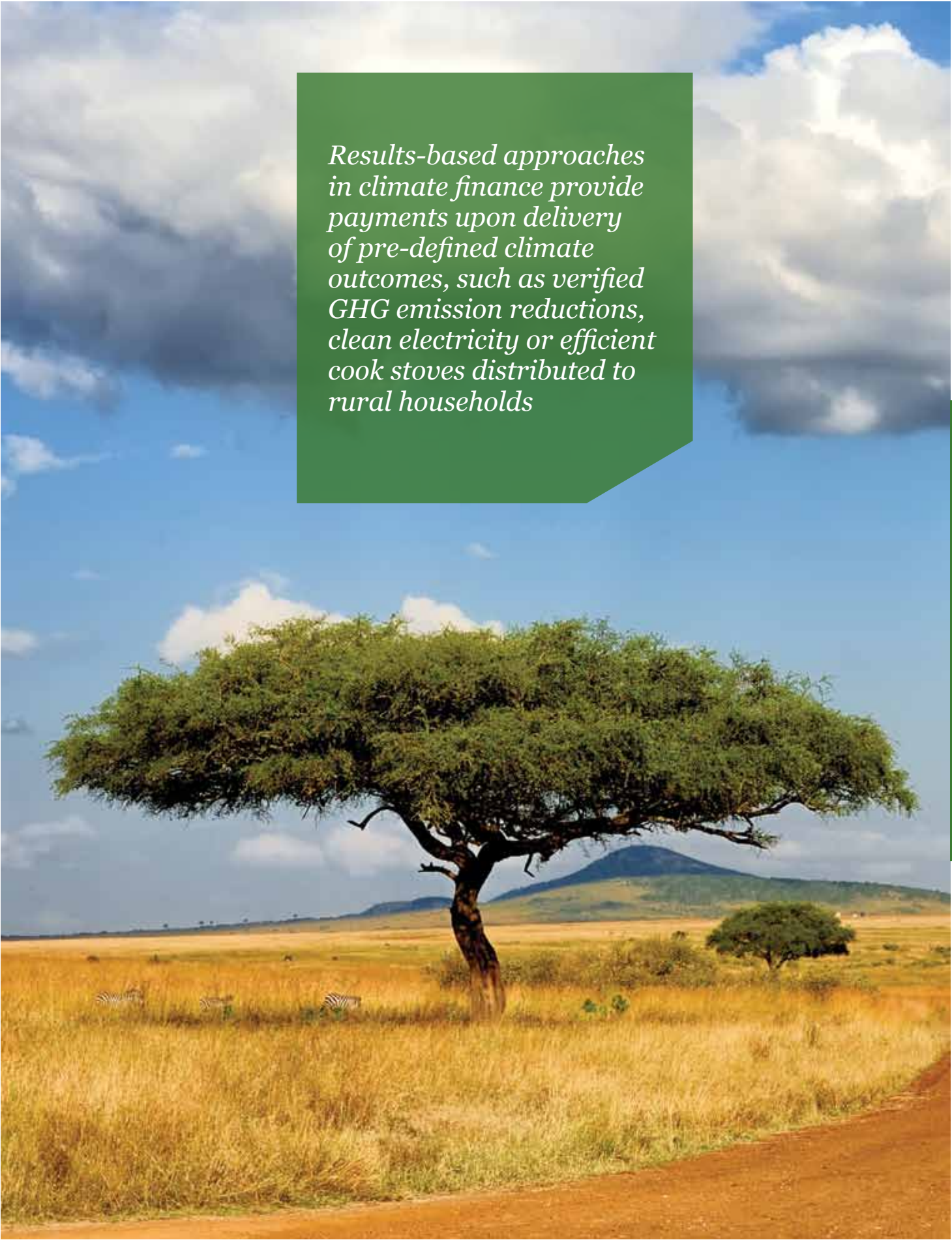
**RBF is also being used to reduce deforestation and preserve landscapes.** In the case of the Forest Carbon Partnership

Facility (FCPF), its Carbon Fund will provide results-based payments to many of the 18 countries in the pipeline, which have made significant progress in their REDD+ readiness endeavors and can show verified ERs, in addition to social, environmental, and other non-carbon benefits. The BioCF Initiative for Sustainable Forest Landscapes (ISFL) is also using RBF to scale up climate-smart land use and transform landscapes using innovative public-private partnerships. One element of this approach is encouraging upstream investments in land productivity and greening private company supply chains. The forest pilots will generate important lessons on RBF that will be useful for the full implementation of REDD+.

**Finally, at COP21, we announced the creation of the TCAF, which will help countries scale up mitigation using results-based payments for carbon assets.** This will lead to economy-wide or sectoral policies and programs that encourage private sector investments in low-carbon technologies. TCAF will pilot innovative crediting mechanisms and provide blueprints for efficient and low-cost mitigation in areas like renewable energy, transport, energy efficiency, solid waste management, and low-carbon cities. Again, the emphasis is on the lessons learned from these activities to jumpstart similar efforts by others.

**These initiatives all use RBF, be it in different ways, and are meant to test different models and approaches to see what is most successful.** However, barriers still remain: most of the financing that is currently available for RBF is public money—using public finance to leverage private sector resources and promote financial innovation. We are still lacking private upfront investment finance. The next step is to focus on crowding in the private sector at an earlier stage.

*Results-based approaches in climate finance provide payments upon delivery of pre-defined climate outcomes, such as verified GHG emission reductions, clean electricity or efficient cook stoves distributed to rural households*





# FINANCING FOR FORESTRY AND LANDSCAPES

*The year 2015 was tremendous in terms of efforts on forests and climate. After decades of work, developed and developing countries signed off on wording in the final agreement in Paris that explicitly recognizes the role that land use—forests in particular—has in addressing climate change.*

**For many years, the WBG has been at the forefront of innovative funding approaches and piloted models and instruments to tackle deforestation and degradation.**

The forest trust funds—FCPF and BioCF ISFL—have been essential to laying the groundwork for more sustainable management and governance of the natural assets of countries as well as building up multi-sectoral institutional and technical capacities and systems.

**An overarching theme in 2015 for both forest funds was progress on public-private partnerships.** The private sector can be key to scaling up sustainable practices. In particular, the ISFL has been designed to maximize private sector engagement

and financial leverage, and to partner with private firms in the effort to “forest-proof” the sourcing of commodities and redirect market forces toward more sustainable land management practices.

**Cooperation and partnerships with the private sector are emerging that will contribute to reducing emissions in targeted FCPF and BioCF countries** including Côte d’Ivoire (Mondelez), Ghana (Olam, Mondelez, and Touton), Republic of Congo (Olam), and Zambia (Cargill). Healthy forests and landscapes can help realize reductions in global emissions in the short and long term. These emission reductions can and should be achieved in a way that maintains transparency and

environmental integrity, and respects the rights of indigenous peoples (IP) and local communities. At the country level, REDD+ countries will aim to implement their national REDD+ strategies, which propose actionable multi-sector strategy options to address the drivers of deforestation and the underlying barriers such as natural resource rights, land tenure, and governance.

**Building on the successes achieved, the focus is now on implementation and delivery of REDD+ strategies through landscape programs.** In addition to partnering with governments, the forest funds will continue to work closely with IP, local communities, civil society, and the private sector to move this work forward.



## Gender and REDD+

*A socially inclusive approach has been the hallmark of the FCPF since its inception. This means one in which vulnerable or traditionally excluded social groups such as women, IP, and other forest dwellers are treated as partners in the planning, operation of funds, and the deployment of support for REDD+.*

Three FCPF countries are taking concrete action to ensure the full and effective participation of women and men in all stages of the REDD+ process.

**In Ghana, the government partnered with the International Union for the Conservation of Nature to develop a road map that guides the design and implementation of a gender-sensitive REDD+ strategy.** The goal is to fully integrate gender considerations into the forestry sector, paying special attention to REDD+ processes. It aims to give men and women equal opportunities to access,

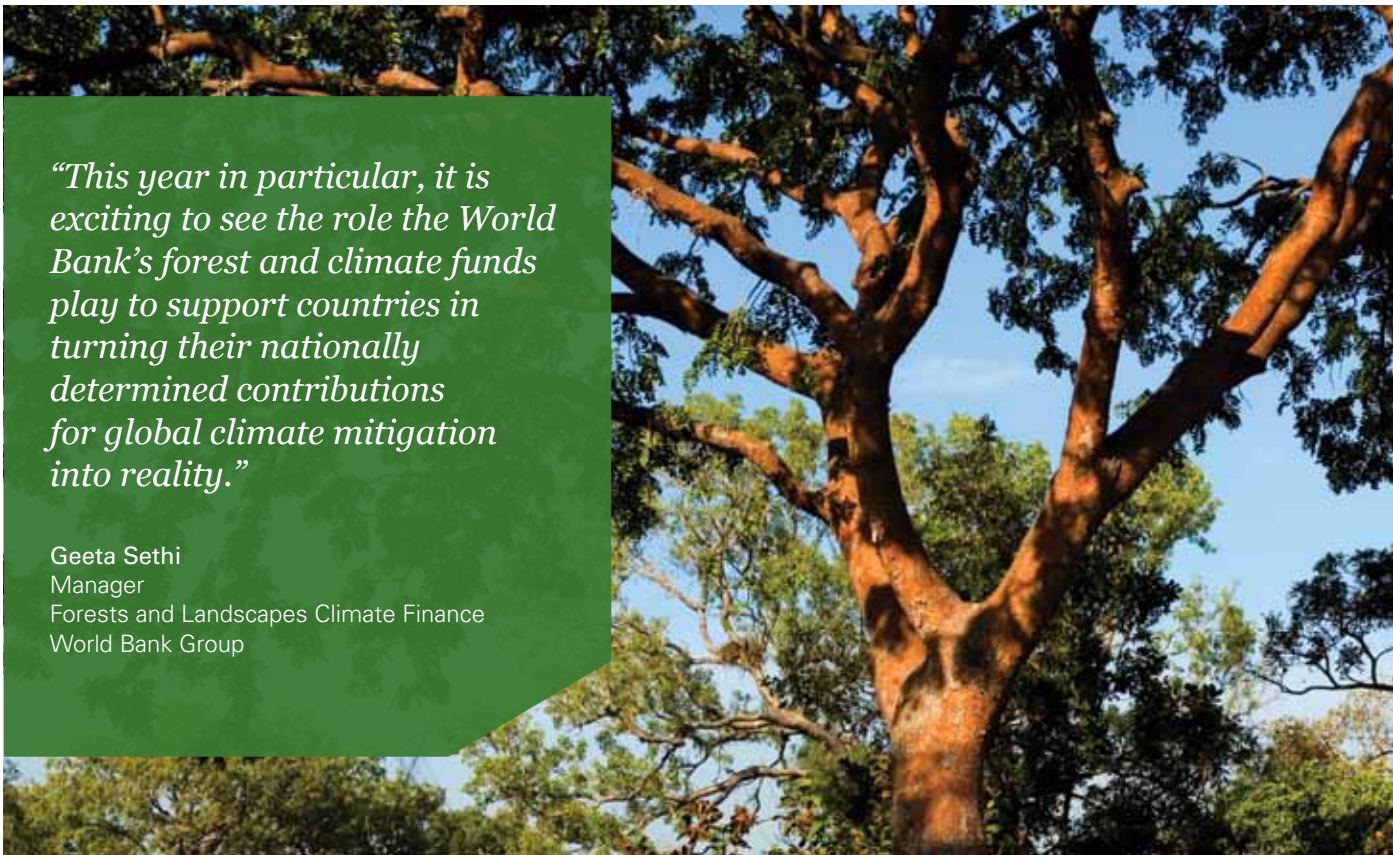
participate in, contribute to, and benefit from various REDD+ policies, programs, and funds. As Ghana prepares an ER program outline for submission to the FCPF Carbon Fund, gender will remain an important element of the discussions and actions on the way to making REDD+ a reality.

**In Uganda, the government is also working with the International Union for the Conservation of Nature to widen people’s understanding of the impact of climate change and implications for gender relations and livelihoods.** This work builds on the Gender and REDD+ Road Map, which was released in 2012. The government has a 2015–16 Action Plan including concrete items such as identifying representatives from women’s NGOs and national level organizations to participate in a gender task force, preparing training materials on gender, and identifying ways to inform local women of their rights, and also the risks, associated with REDD+.

**Finally, in Panama, the Fundación para la Promoción del Conocimiento Indígena (Foundation for the Promotion of Indigenous Knowledge) implemented a small grant project financed by the**

**FCPF to strengthen REDD+ capacity of indigenous Guna leaders, women, and youth.** Following their customary consultation processes, the project held a series of community workshops on social and environmental safeguard issues in the Guna Yala *comarca* (a semi-autonomous indigenous territory). The project enhanced the understanding of REDD+ issues among the Guna, notably the participation of indigenous women in various capacity-building activities and the informed participation of rural stakeholders in the national REDD+ Readiness process. This extensive community participation has laid the groundwork for an ongoing focus on women’s role in the REDD+ process.


**It is crucial to take men’s and women’s different needs and knowledge related to REDD+ into account in promoting gender equality.** A socially inclusive approach requires a willingness to learn by doing, a commitment to sharing best practices, and the opportunity to scale up. The outcome is a greater understanding of REDD+ by all stakeholders and a more equitable process for designing and implementing these kinds of initiatives.



*“This year in particular, it is exciting to see the role the World Bank’s forest and climate funds play to support countries in turning their nationally determined contributions for global climate mitigation into reality.”*

Geeta Sethi  
Manager  
Forests and Landscapes Climate Finance  
World Bank Group





*"Emissions trading is the key to unlocking ambition. If we want to achieve a 2° level of climate protection, we need markets to work favorably; to reward green technologies, to reward green investments, and to provide an opportunity for companies to transition more with a carrot than with a stick. And the market can do that. Command and control regulations do not. ... The market incentive is the most powerful tool we got. Why not use it?"*

**Dirk Forrister**  
President & CEO  
IETA



*"With the help of the Ci-Dev buying our project's carbon credits [from Kenya], the household can purchase the biogas equipment at a more affordable price and with increased service. By doing so, SimGas and Ci-Dev help to build a clean energy revolution for millions of rural households in Africa and Asia, while contributing to the reduction of indoor air pollution, deforestation, and carbon emissions."*

**Sanne Castro**  
Founder & CEO  
SimGas



*"Reaching this stage of our vehicle replacement program was a real challenge, luckily achieved given the continuous support of WBG's technical team. Also being part of the CPF seller participants and sharing knowledge with the buyer participants and other countries' projects was a remarkable experience."*

**Amgad Moneir**  
Ministry of Finance  
Egypt

## IMPLEMENTING CLIMATE ACTION

The year 2015 was one of major achievements. In total, 19 carbon initiatives are producing results.

The Kyoto Funds are making a difference on the ground by reducing poverty, improving the health of women and children in Moldova and Nepal, and creating greater access to energy in Bangladesh and Rwanda, all while reducing GHG emissions. In fact, the first generation of carbon funds has delivered the reduction of more than 200 million tCO<sub>2</sub>e, representing the emissions of over 42 million passenger vehicles driven for one year.

Our "next generation" carbon market initiatives are also yielding fruit. With our support, more countries are planning and implementing market-based mitigation policies, such as ETSs and carbon tax schemes, and considering ways to link these. Countries are planning REDD+ programs and piloting new models to scale up mitigation, often involving the private sector, an important partner in our efforts.

The following pages include some facts and figures to recap our operational work, outline our accomplishments month-to-month, and provide a profile of four case studies that show the human side of carbon finance.



# 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 WBG to pioneer a full range of flexibility mechanisms.\*

Today, the Kyoto Funds and Facilities are fulfilling their objectives and commitments with participants. In 2015, 22 Emission Reductions Purchase Agreements (ERPAs) delivered ERs and closed. Furthermore, some ERPAs were terminated without delivery, as they did not meet the conditions of the ERPA.

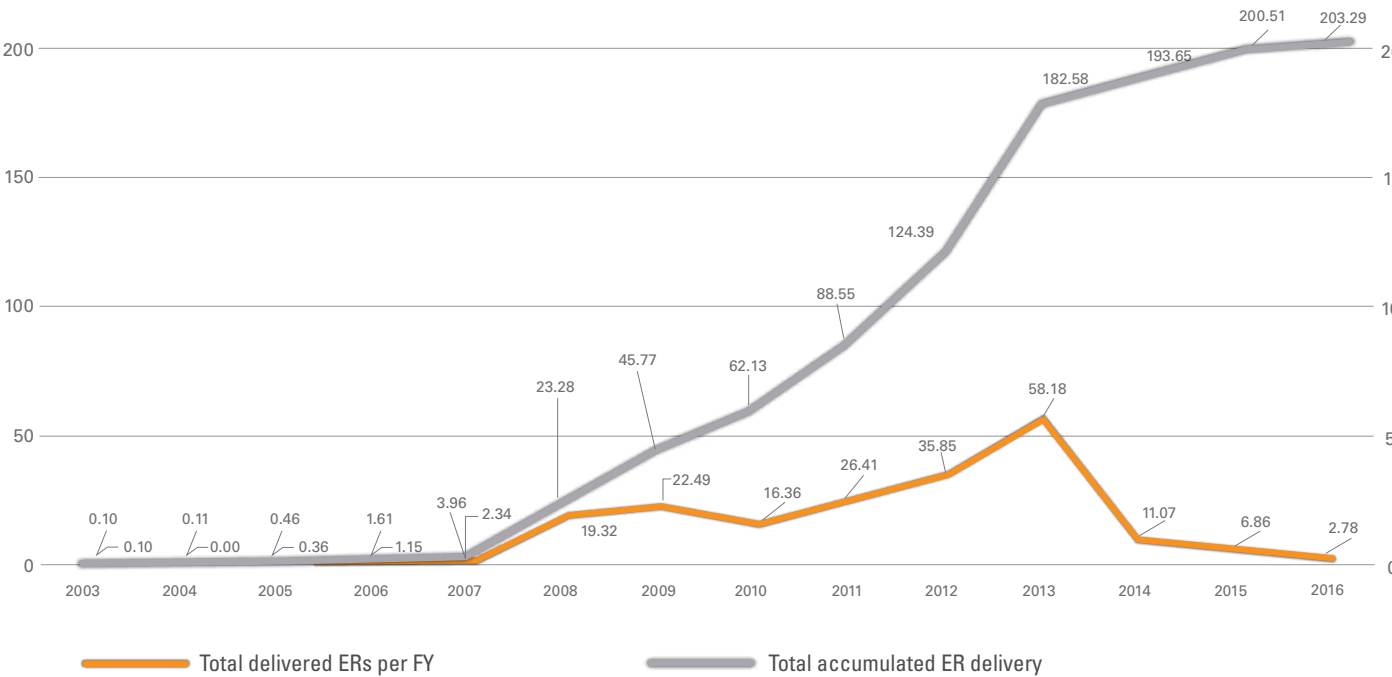
In 2015, this group of Funds and Facilities reached an important milestone when it surpassed the level of 200 million tCO<sub>2</sub>e, reaping the fruits of its work over the past decade. To date, these instruments have delivered 92 percent of their commitments.

The Kyoto Funds and Facilities’ success is now informing the preparation and piloting of the next generation carbon finance initiatives.

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

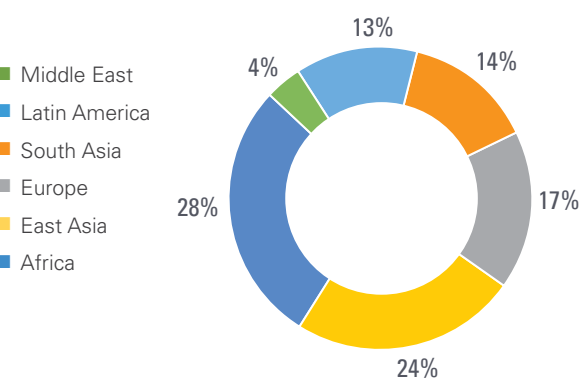
\*Flexibility mechanisms are mechanisms defined under the Kyoto Protocol: the Clean Development Mechanism (CDM), Joint Implementation (JI), and emissions trading, intended to lower the overall costs of achieving its emissions targets.

## Total Kyoto Funds ER Delivery per Fiscal Year

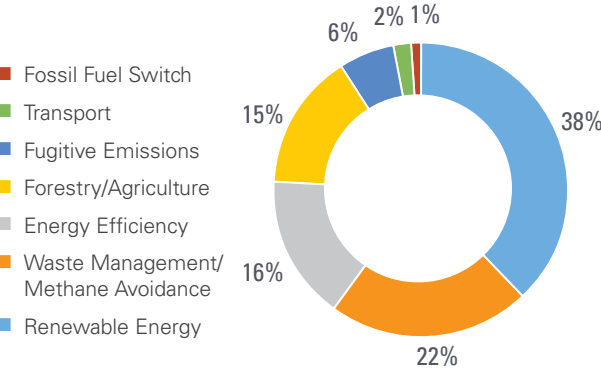


This chart depicts total emissions delivered by the Kyoto Fund and Facilities on an annual basis as well as their cumulative emissions during the fiscal years 2003–16. Please note that the data set only includes data up until December 31, 2015.

## Regional Distribution (by project)



## Sectoral Distribution (by project)



These charts depict the regional and sectoral distribution of 148 ERPAs in 2015. This includes both the number of active and closed ERPAs, that is, those that have fully delivered ERs per their contracts. Note that these figures only include Kyoto Funds and Facilities.

## Delivering Ground-Breaking Action in 2015

MONTH	PROJECT	PROJECT TYPE	CARBON CREDITS	PIONEERING RESULTS
January	Bangladesh Solar Home Systems Program	Solar Panels	413,660	<ul style="list-style-type: none"><li>- First renewable energy Programme of Activities (POA) in Bangladesh to issue Certified Emission Reductions (CERs)</li><li>- First POA worldwide for solar home systems to generate CERs</li><li>- Largest issuance of CERs from a POA in a LDC</li></ul>
April	Moldova Biomass and Energy Conservation Project	District Heating Efficiency	89,500	<ul style="list-style-type: none"><li>- First CDM project to issue CERs in Moldova</li><li>- One of the first sets of bundled projects for heating efficiency to issue CERs worldwide</li><li>- First methodologies for GHG emissions accounting from energy efficient heating technology and fuel switching for small-scale bundled projects</li></ul>
May	Nepal Micro-Hydro Project	Community Managed Micro-hydro	66,350	<ul style="list-style-type: none"><li>- First micro-hydro project to issue CERs in Nepal</li><li>- First micro-hydro project to issue CERs in the South Asia region</li></ul>
August	India Himachal Pradesh Reforestation Project	Sustainable Forest Management Practices	65,580	<ul style="list-style-type: none"><li>- First issuance of CERs in India</li><li>- 600 villages involved in afforestation activities</li><li>- 3,200 hectares of land restored</li></ul>



# Next Generation Carbon Market Initiatives

The WBG has taken the lead in shaping the next generation carbon initiatives. Each year, new approaches such as performance-based payments and auctions are being developed and launched.



### Forest Carbon Partnership Facility

The 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 stocks (REDD+). The FCPF demonstrates how REDD+ can be applied at the country level.

The FCPF has two separate but complementary funding mechanisms—the Readiness Fund and the Carbon Fund—to achieve its strategic objectives. The Readiness Fund supports participating countries in the development of REDD+ strategies and policies; reference emission levels, measurement, reporting and verification systems; and institutional capacity to manage REDD+ including environmental and social safeguards. The Carbon Fund builds on the progress made in readiness and is designed to pilot performance-based payments for ERs from REDD+ programs in a small number of FCPF countries.

The FCPF made progress in shaping an increasingly diverse portfolio of landscape-level, cross-sectoral programs that bring public and private partners together around forest conservation, sustainable land use and high-quality ERs at scale, which underscore the FCPF’s emphasis on social inclusion in program design and implementation.

Facility Capital	\$1.1 billion
Date Operational	June 2008
Participants	64*

\*47 FCPF countries and 17 financial contributors.



### Carbon Partnership Facility

Tranche 1 of the 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.

The CPF is currently developing such scaled up crediting programs to support renewable energy in Sri Lanka and energy efficiency in Vietnam. In addition, opportunities for new market-based mechanism approaches for mitigation actions in cities are being studied aimed at suggesting a design framework for piloting city-wide mitigation actions. The CPF is also 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.

Facility Capital	\$134 million
Date Operational	May 2010
Participants	10*

\*3 buyer participants and 7 seller participants.



### Partnership for Market Readiness

Operational since 2011, the Partnership for Market Readiness (PMR) brings together more than 30 countries and institutions whose actions are critical to global climate mitigation efforts. Over the years, the PMR has evolved into one of the key platforms designed to help countries prepare for the introduction and implementation of carbon pricing and other innovative instruments to reduce GHG emissions cost-effectively.

The PMR currently provides technical and financial assistance to 18 countries by:

- Strengthening institutional framework and building readiness in order to facilitate a choice, design, or implementation of carbon pricing instruments;
- Carrying out technical work in order to facilitate experience and knowledge sharing, develop practical guidance on common issues, identify good practice and common standards, and build necessary technical capacity; and
- Providing economic and policy analysis support (including on carbon pricing modeling) to inform decisions surrounding the selection and introduction of carbon pricing instruments.

PMR is also a platform for knowledge sharing through meetings, events, reports, and other activities where experiences are shared.

Facility Capital	\$127 million
Date Operational	April 2011
Participants	34*

\*13 contributing participants, 17 implementing country participants, and 4 technical partners—including one who receives assistance.



### BioCF Initiative for Sustainable Forest Landscapes

The BioCF ISFL was launched in November 2013 and seeks to promote REDD+ and sustainable agriculture, as well as smarter land use planning, policies, and practices. The initiative will deploy RBF to incentivize changes at the landscape level.

The BioCF ISFL recognizes 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. The initiative is designed to work alongside a wide range of private actors, from multinational corporations to large national actors and emerging small and medium enterprises and smallholders.

The BioCF ISFL uses two main types of financing for countries: (i) grant funding and technical assistance (BioCFplus) and (ii) RBF for achieved ERs (BioCF T3). Both financing types are designed to complement each other to provide incentives to enhance the enabling environment for sustainable development that reduces deforestation and changes the way land use decisions are made.

Facility Capital	\$354 million
Date Operational	November 2013
Participants	8*

\*3 programs and 5 financial contributors.



### Carbon Initiative for Development

The Ci-Dev became operational in April 2014 and is meant to increase access to low-carbon energy in the world’s poorest countries by offering carbon-linked RBF using the CDM. Ci-Dev supports initiatives that deliver strong development benefits in vulnerable communities, using performance payments based on ERs while building capacity and developing tools and methodologies to help the poorest countries access carbon finance.

Of the initiative’s total funds, \$27 million has been allocated to the Readiness Fund, which builds capacity via grants and training for project implementers to help develop the infrastructure to design, implement, and monitor CDM projects. The Readiness Fund also supports Ci-Dev’s Methodology Work Program (MWP) and knowledge management work program. The fund’s knowledge management strategy is being drafted, and will help guide how to learn from Ci-Dev’s pilot programs and their innovative and transformative business models, as well as how to disseminate that learning among stakeholders in energy access, climate finance, and development.

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



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

The PAF is an innovative climate finance model to stimulate private investment in projects that reduce GHG emissions, while maximizing the impact of public funds. The objective of the PAF is to demonstrate a new, cost-effective climate finance mechanism by providing a guaranteed floor price on ERs.

The PAF offers tradeable put options that provide holders the right but not the obligation to sell future ERs to the PAF at a pre-determined price (the “strike price”). If carbon market prices rise above the strike price, owners of the put options can sell their ERs to other buyers in the carbon market rather than to the PAF. If market prices fall below the strike price, the put option owner has the right to sell emission reductions to the PAF at a pre-determined price. The PAF uses online auctions as a competitive and transparent means of determining the value of the price guarantees.

The PAF disburses resources only against independently verified ERs. This pay-for-performance feature is attractive for governments facing expanding funding needs and scrutiny on achievements. The combination of auctions and results-based payments maximizes value for public money.

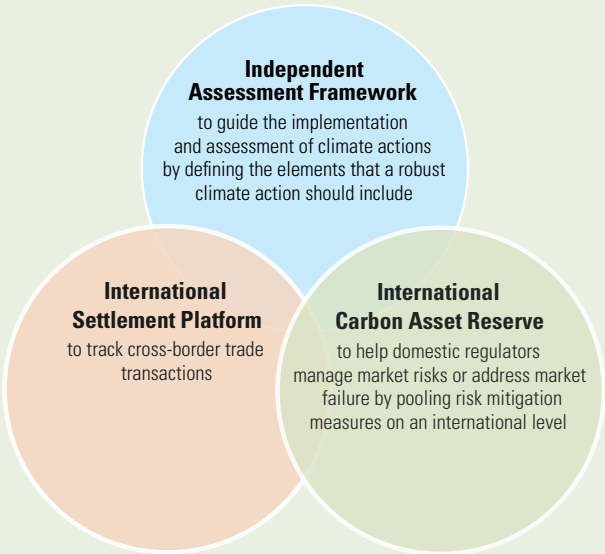
Facility Capital	\$53 million
Date Operational	November 2014
Participants	4



### Networked Carbon Market Initiative

The NCM Initiative is part of the WBG’s long-term efforts to promote and enable carbon pricing, and complements ongoing work to assist countries in designing and implementing carbon pricing systems. It does not advocate a “global carbon price”—but putting a “price on carbon”—recognizing that carbon assets from different climate mitigation efforts will have different climate change mitigation values and prices. The end goal is a connected international carbon market that has liquidity, scale, and the foundation for a long-term, stable price on carbon. To date, the NCM Initiative has launched a global discussion on the post-2020 services and institutions that might be needed for a connected international carbon market in the future.

The NCM Initiative collaborates with a wide range of partners to stimulate a global conversation on how to enhance the transparency, comparability, and fungibility of diverse climate actions. Through the NCM, the WBG is convening stakeholders to develop a framework for assessing climate mitigation efforts and infrastructure to support carbon market-related functions. It responds to the need for reliable and well-synthesized information on the relative value of different climate mitigation efforts, given the increasing regulatory fragmentation and heterogeneity that is emerging across and within jurisdictions.



This year’s facility capital includes legal commitments. Previous years included both pledges and legal commitments.



# PARTNERS AROUND THE WORLD

The WBG supports carbon finance operations and programs in about 75 countries, as shown on the map. These operations and programs comprise activities undertaken by the FCPF, CPF, PMR, and BioCF ISFL as well as by the Kyoto Funds and Facilities.

In 2015, six new ERPA's were signed in three countries: Brazil, Philippines, and Zambia. We delivered on and closed ERPA's in six countries: Bulgaria, Czech Republic, Ecuador, Hungary, Indonesia, and the Russian Federation. In 2016, CPF and Ci-Dev are projected to sign about ten ERPA's.


A total of 20 governments support the carbon funds and facilities by purchasing ERs as carbon fund participants and/or contributing donor resources to readiness activities.

Like last year, 59 private sector firms and three civil society organizations also support our activities and, together with the public sector, purchase ERs through the carbon funds and facilities. In addition, there are about 30 corporate firms that the different carbon market initiatives engage with and discuss solutions for low-carbon development. Engagement with the private sector has increased significantly this past year, firstly through the PAF auction as it sells ERs to the private sector. Secondly, through the NCM which collaborates with a wide range of stakeholders in discussions on future carbon markets.

## Country Progress

FOREST CARBON PARTNERSHIP

REDD+ countries continue to make strides in developing large-scale REDD+ program proposals that have the potential to transform rural landscapes.



2015

A total of **18** countries are implementing readiness activities for ER programs, **7** of which joined this group in 2015.

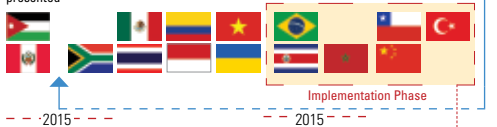
pmr | PARTNERSHIP FOR MARKET READINESS

**13** countries have road maps for carbon market readiness. South Africa's final MRP was approved in 2015.

2 draft MRPs presented

Preparation Phase

Implementation Phase




**6** countries have begun implementation of their market readiness activities. Brazil, Costa Rica, and Morocco joined this phase in 2015.

Alberta, Canada

### Province Shares Strategies for Climate Action

In October, Alberta joined the PMR as a Technical Partner. The province shares its experience operating an intensity-based ETS and an offset program since 2007, in the context of economic growth and the significant industrial component to the emissions profile. Moreover, Alberta has set up an Emissions Management Fund, which provides an interesting model of carbon revenue recycling for PMR Participants.




Philippines

### Low-carbon Technologies Promoted by Carbon Finance

The CPF signed two ERPA's in June and December in the Philippines. Both include low-carbon technology systems that capture and combust methane gas and generate electricity of less than 15 MW:

- **Landfill Gas Recovery POA:** installation of landfill gas collection systems.
- **Animal Manure Methane POA:** installation of anaerobic wastewater treatment systems in up to 100 farms.

Together, these two POA's are projected to reduce ERs by over 3.5 million tons.



Colombia

### Agriculture Region Promotes Sustainable Land Use and Reduces GHG


The new ISFL program in the Orinoquia region promotes a business environment that is conducive to sustainable agriculture practices and production systems by strengthening institutional capacities. The program supports multistakeholder dialogues within priority supply chains, such as cattle, palm, and forestry, to define best practices, performance standards, and marketing strategies that contribute to the sustainable, competitive development of these sectors.



Democratic Republic of Congo

### First Country to Present its Readiness Package

The endorsement of the Readiness Package from the Democratic Republic of Congo by the FCPF Participants Committee (PC) as the first country to advance REDD+ readiness was an important milestone in 2015. The document provided a snapshot of DRC's readiness progress relative to the country's circumstances and recognized that capacity continues to be built beyond the submission milestone. An important part of the package was the inclusion of a participatory and comprehensive self-assessment conducted by the country. The PC was also pleased with new legislation under preparation related to IP' rights. DRC was encouraged to continue strengthening institutional arrangements to coordinate and implement REDD+ activities and to make progress on REDD+-related policy reforms, including land use planning and land tenure.



RECIPIENTS

DONORS/CARBON FUND PARTICIPANTS

Information as of December 31, 2015.

GSDPM

IBRD 40031R1 | MARCH 2016

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# 2015 HIGHLIGHTS

## Networking Carbon Markets Knowledge Series Launched

This knowledge event brought the finance and investment sectors together to discuss ways to assess the relative value of climate mitigation efforts and enabling cross-border trade on the basis of carbon exchange rates. Participants also explored institutional requirements, including how the creation of an International Carbon Asset Reserve and International Settlement Platform could support carbon market-related functions and, ultimately, a networked international carbon market.

JANUARY

## South-South Knowledge Exchange on Planted Forests

As part of FCPF and BioCF ISFL forestry operations, stakeholders in Ethiopia and Mozambique have expressed interest in increasing their understanding of different aspects of planted forests. For this reason, government and private sector representatives from these two African countries traveled to Brazil to learn about sustainable forest plantations. The study trip included meetings and learning sessions on how forest plantations can promote rural development and reduce pressure on native forests.

FEBRUARY

## Supporting the Implementation of a Carbon Tax in South Africa

At the 11<sup>th</sup> Partnership Assembly (PA) meeting of the PMR in London, United Kingdom, South Africa presented its final Market Readiness Proposal (MRP) and was allocated a \$5 million grant to support the design and implementation of a carbon tax. The PMR's support to South Africa will help implement the tax, including developing data management and a Monitoring, Verification, and Reporting (MRV) system as well as a related offset scheme. Following the PA meeting, the PMR held a workshop on carbon markets' role in the new climate regime.



MARCH

*“An effective carbon price is an essential, if insufficient, part of a policy package that can lower emissions and drive the economy toward a low-carbon, resilient future. It makes pollution more expensive, incentivizes efficiency and clean production, and helps business leaders and investors understand the long-term direction of travel.”*

Rachel Kyte  
Former Vice President and  
Special Envoy for Climate Change  
World Bank Group

## High-level Dialogue with Indigenous Peoples

FCPF observers from Africa, Asia, and Latin America participated in a high-level dialogue, organized by the WBG and hosted by President Jim Yong Kim. It focused on mechanisms for deepening IP inclusion in WBG processes for sustainable development. FCPF observers have also been actively supported to be able to participate in other international dialogues.



## Africa Carbon Forum in Marrakech

The 7<sup>th</sup> Africa Carbon Forum focused on finance, development, and investment opportunities related to climate change and of interest to project developers and policy makers. This year's forum also featured a high-level ministerial segment, giving African governments an opportunity to discuss their expectations for and planned contributions to an international climate change agreement in Paris. The WBG convened a meeting for African negotiators to support their discussion on the options for carbon markets in the negotiating text, to understand which of the options aligned best with African interests, and to devise a strategy for the next round of CDM and market negotiations.



## FCPF Carbon Fund meeting

At the 12<sup>th</sup> meeting of the Carbon Fund, held in Paris, France, a record number of nine REDD+ countries presented new ideas for landscape programs.

APRIL

## Carbon Expo in Barcelona

The 12<sup>th</sup> edition of Carbon Expo attracted over 2,200 visitors from 109 countries interested in presentations and conversations on the current state of the carbon market and outlook for the future. The Expo is the world's leading international conference for emissions trading, carbon abatement solutions, and clean technologies. A number of carbon initiatives, including PMR, PAF, BioCF, and NCM hosted and cohosted a total of eight events.

## Launch of Carbon Pricing Watch

The *Carbon Pricing Watch*, an early brief previewing the annual *State and Trends of Carbon Pricing 2015* report, was launched at the Carbon Expo. It compiles the latest data on carbon pricing initiatives around the world, together valued at almost \$50 billion. Several carbon taxes and one of the world's largest ETSs were introduced in recent years and more initiatives are planned.

## Improved PMR Procedure and Process

At PA12 in Barcelona, Spain, the PMR received its first independent evaluation and implemented a new operations and monitoring system, including a dashboard for country progress. The PMR also presented a technical note on how international offsets are used in a domestic context. Moreover, the PMR hosted two workshops on understanding INDCs.

In May, PMR issued its first electronic newsletter *China Carbon Market Monitor*, providing timely information on the seven Chinese pilot carbon markets.



## Important Milestone in the FCPF

A new milestone in REDD+ readiness was reached when the Democratic Republic of Congo became the first country to present its readiness package at FCPF Participants Committee (PC) 19. Also at this meeting, a knowledge-sharing session on decision support tools illustrated how the FCPF is making the technical dimensions of REDD+ more accessible for REDD+ countries.

## Supporting Energy Access through RBF Using the CDM

The Ci-Dev organized technical workshops in Uganda and Togo to discuss how to support improved energy access in Africa through RBF delivered with the CDM.

MAY

## NCM Road Show

In June and July, the NCM Initiative cohosted a “road show” of three workshops on *Enabling Comparability and Connectivity of Climate Markets* in London, Washington, DC, and Sydney, together with the Climate Markets and Investment Association, Price Waterhouse Coopers, and Baker & McKenzie. These events provided an opportunity to update stakeholders on progress relating to the NCM and its technical and analytical work plan.

JUNE

## First PAF Auction

The PAF held its first online auction to stimulate investments in projects that reduce GHG emissions. The first auction focused on methane projects, and tested an innovative climate finance model that maximizes the impact of public funds and leverages private sector financing. The auction set the floor price for future carbon credits at \$2.40.



JULY

The first PAF auction was awarded: *Environmental Finance* magazine **Carbon Deal of the Year Award** and the **MTNi Editors Award**



# 2015 HIGHLIGHTS

...continued

JULY

## Jurisdictional Programs on Integrated Landscape Management

This workshop focused on strategic issues related to program design and implementation of jurisdictional programs. Participants included African technical leaders—counterparts to the BioCF and FCPF—who are involved with managing jurisdictional REDD+ programs.



## New Standard for Rural Electrification

Ci-Dev continued to help streamline CDM processes and procedures through its MWP, by funding the new, small-scale GHG accounting methodology *AMS III.BL: Integrated Methodology for Electrification of Communities*. Approved by the CDM Executive Board at its 85<sup>th</sup> meeting, the methodology enables the crediting of ERs from electrification of rural communities using renewable energy (for example, through the installation of solar panels for household electricity generation). It broadens the coverage of small-scale methodologies for electrification while providing simplified monitoring procedures to reduce transaction costs. These and other MWP efforts are aimed at making the CDM more accessible in LDCs.

SEPTEMBER

## Launch of the State and Trends of Carbon Pricing 2015

This report gives an overview of existing and emerging carbon pricing instruments around the world. Carbon pricing instruments cover about 7 billion tCO<sub>2</sub>e, or 12 percent of annual global GHG emissions, a threefold increase over the past decade. It also offers a detailed review of competitiveness and leakage in existing carbon pricing initiatives. The report also provides a timely assessment of the advantages of international cooperation in reaching stringent GHG ERs.



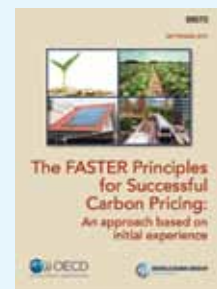
## Design Meeting of Carbon Pricing Leadership Coalition

The Carbon Pricing Leadership Coalition grew out of the movement to support carbon pricing at the Climate Summit 2014. Today, it involves more than 80 global businesses, governments, and NGOs that work together to advance effective carbon pricing around the world. This initiative sent a clear signal leading up to and beyond COP21: carbon pricing is here to stay, and there is a growing set of leaders who are ready to work together to raise collective climate ambition through successful carbon pricing implementation for years to come.



## Six FASTER Principles for Carbon Pricing

The *FASTER Principles for Successful Carbon Pricing* report, issued by the WBG and the OECD, helps governments and businesses develop efficient and cost-effective instruments to put a price on the social costs of emissions. This new report lays out six key principles to price carbon, based on economic principles and experience of what is already working around the world.



The FASTER principles are:

- F** for fairness;
- A** for alignment of policies and objectives;
- S** for stability and predictability;
- T** for transparency;
- E** for efficiency and cost effectiveness; and
- R** for reliability and environmental integrity.

## Innovation in Climate Finance

An article on PAF was featured in the *Carbon Mechanisms Review* magazine (3<sup>rd</sup> issue, 2015), under the heading *Looking Back into the Future*. The piece covered the first auction of the PAF, with a focus on results achieved, the experience gained in a nutshell, and lessons learned.



OCTOBER

## Seven New Countries in the FCPF Carbon Fund

At the 13<sup>th</sup> FCPF Carbon Fund meeting, held in Brussels, Belgium, seven countries were selected into the Carbon Fund pipeline, bringing the total to 18. These countries presented diverse ideas for large-scale ER programs that ranged from reforestation efforts on land reclaimed from a canal to more sustainable cocoa production through partnerships with private sector chocolate companies.

## Sri Lanka Explores Carbon Finance for Renewable Energy

The CPF signed a Memorandum of Understanding with the government of Sri Lanka, as the latter plans to implement various measures to create a more certain and investor-friendly environment for renewable energy. These measures include policy and financial incentives supported by carbon finance. The government has set an ambitious target to achieve 20 percent power generation by 2020 from nonconventional renewable energy, which includes wind, mini hydro, biomass, and solar. It currently generates 9.85 percent of total power generation from these sources.

## Broadening the PMR and Deepening its Country Support

At its 13<sup>th</sup> meeting, the PA of the PMR allocated additional funding to Kazakhstan, a Technical Partner, for targeted technical support to implement the country's national ETS. Also, Alberta joined the Partnership as a new Technical Partner. Jordan and Peru presented their draft MRPs for discussion and the PA's feedback. The day prior to the PA, the technical note *Carbon Leakage: Theory, Evidence and Policy Design* was presented. There was also a public event on energy reform and climate policies in the region.



Webinar of report organized

NOVEMBER

## Costa Rica Presents REDD+ Readiness

At FCPF PC20, Costa Rica was the second country to present its Readiness Package. In addition, at the second joint UN-REDD Programme/FCPF Knowledge Exchange event, over 100 participants shared lessons learned during eight sessions on engaging with the private sector on REDD+, carbon stock assessments and monitoring in indigenous territories, and social inclusion.

# \$339M

PLEDGED BY  
GERMANY • NORWAY  
UNITED KINGDOM

SUPPORT CIRCA FIVE NEW  
ER PROGRAMS FOR

# FCPF

CARBON FUND

## TCAF: New \$500 Million Initiative

On day one in Paris, four countries—Germany, Norway, Sweden, and Switzerland—announced the **Transformative Carbon Asset Facility**, a new \$500 million initiative that will find ways to incentivize large-scale cuts in GHG emissions to combat climate change in developing countries. The TCAF will help implement plans to cut emissions by creating new classes of carbon assets associated with reduced GHG ERs, including those achieved through policy actions.

The TCAF will pay for carbon assets with high environmental integrity and a strong likelihood to comply with future international rules, and will share its learning with the international community.

DECEMBER



## Activities at COP21

The WBG supported several governments and other organizations in hosting a number of side events on carbon finance and carbon pricing in Paris during COP21.



- Pursuing an Innovative Development Pathway: Understanding China's INDC
- Exploring INDC Implementation Challenges: Insights Gained from Analytical Work in Colombia, Costa Rica, and Peru
- Carbon Pricing around the World: Leveraging 10 Years of Experience in the EU

- Launch of the Carbon Pricing Leadership Coalition



- Africa Ministerial Highlights REDD and Forestry Programs in Mozambique, Ethiopia, and Republic of Congo



- Nordic Climate Action: High Sustainable Development Impact Projects under the CDM



- Comparing Mitigation Efforts across the World—How to Trade Emissions after Paris



- Catalyzing Climate Change Investment—Lessons Learned from 1st PAF Auction



- Beyond the Usual Suspects—Innovative Partnerships for Land Use Mitigation



ACHIEVEMENTS AND IMPACTS: The Year at a Glance

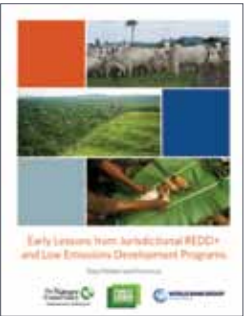


\$339M  
pledged at COP21

4 Letters of Intent for large-scale emission reductions programs signed in 2015, bringing the total to 11 overall.

8 meetings, events, workshops including  
2 webinars:

Forest Carbon Assessment in the Amazon's Indigenous and Protected Area  
What, Why, and How of Forest Governance Assessment



13 countries signed readiness grants in 2015, bringing the total to 37 overall.



8 POAs  
in 7 countries since inception



2 POAs  
in Philippines

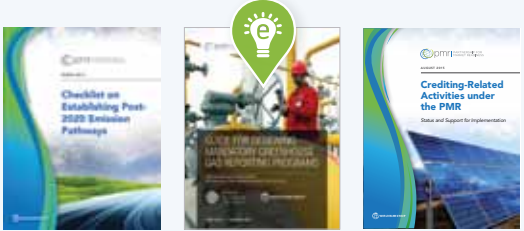
3M carbon credits projected from program in Brazil

40K taxis replaced in Cairo, Egypt

2M tons of methane gas will be collected from farms with millions of pigs



\$53M total grant allocation  
26 knowledge exchanges and products



4 target countries

3 programs in jurisdictions covering more than... 70M hectares

"forest-proof" sourcing of commodities including coffee, cotton, beef

2 briefs on stakeholder and private sector engagement  
events on landscape management in Africa



250 project ideas reviewed  
14 projects selected for pipeline  
Promoting low-carbon technologies while providing energy access:  
4 cook stove | 4 mini-grid  
3 biogas | 3 renewables

10+ ERPA's expected to be signed  
Methodology reform of the CDM process resulting in 1 new methodology: AMS III. BL Integrated Methodology for Electrification of Communities and 2 revised methodologies: AMS I. L Electrification of rural communities using renewable energy, AMS III. BB Electrification of communities through grid extension or construction of new mini-grids



First Auction 15 JUL 2015  
8.7 million tons of CO<sub>2</sub>e expected to be reduced

11 webinars and presentations in 7 countries

1 Lessons Learned report from the First Auction  
Briefing note on applying the PAF Mechanism to the Oil & Gas sector



Collaborating with more than 30 organizations



6 reports & 10 events including a road show on 3 continents





# 413,659

carbon credits were issued for Solar Home Systems POA in 2015: largest issuance in Bangladesh to date



## IMPACT SHOWCASE 1: Lighting Rural Bangladesh with Rooftop

*Poor remote communities in Bangladesh are gaining access to green, off-grid power by installing solar panels on the roofs of homes and small businesses. Life has changed thanks to better, safer, and cheaper lighting, and the ability to power electrical appliances.*

**This is one of the fastest growing renewable energy programs in the world.** More than 3.5 million solar home systems have been installed in rural areas, creating 70,000 direct jobs, for Bangladeshi men and women.

**It is estimated that nine million people benefit from this carbon finance program.** Families can hear weather forecasts on the radio and charge cell phones. Lamps allow children to study longer, and street lights improve safety in the dark, especially for women. Replacing conventional kerosene lamps and their toxic fumes with “green” lighting helps reduce indoor air pollution, fire hazards, and health risks such as respiratory diseases.

**Rural electricity also boosts business.** Families gather at the local grocery store to watch the news and shows on TV at night.

### *Bolstering Financing through Carbon Credits*

**Solar power is helping to green Bangladesh’s energy mix.** The government aims to increase renewable energy from 1 to 10 percent of its national grid power by 2020. Adding solar panels to rural homes is an important part of the country’s sustainable development strategy.

**Solar home systems also reduce GHG emissions and earn carbon credits** by reducing the use of kerosene lamps for lighting and diesel generators that had been used to charge batteries.

**In 2015, the Bangladesh Solar Home Systems POA became the first renewable energy program in Bangladesh to issue carbon credits and the world’s first POA for solar home systems under the CDM to generate carbon credits.** A total of 413,659 carbon credits were issued, generated by 12 individual programs. This is the biggest-ever issuance for a POA in a LDC, and the largest issuance in Bangladesh to date. The CDCF provided support through technical assistance and purchased the carbon credits, creating a shared revenue stream for the program.

### *Solar Panel Subsidies Help the Poor*

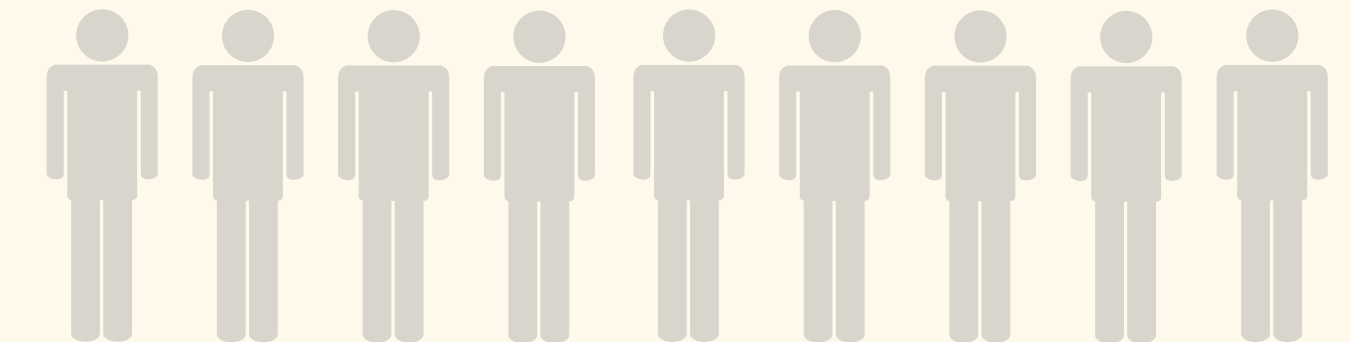
**The solar panels are subsidized by the managing entity,** a state-owned financial institution that provides families with grants and credits to pay for part of the cost and provide electricity in a country where only 60 percent of the population and about 42 percent of rural households have access to electricity. About 13 million rural households still live without power. Even those connected to the grid experience blackouts during peak hours because electricity supply cannot keep up with demand.

**Installing solar panels has become a reliable and increasingly financially viable solution for Bangladeshis.** A 20 watt-peak system costs about \$150, which is paid by the users over three years, and provides enough electricity to power two lights and one mobile charger.

### *Overcoming the affordability barrier has been crucial to the widespread adoption of solar home systems.*

The cost of solar panels has gradually come down, and there is now a growing trend toward the installation of very small, 10 watt-peak panels, giving poorer households access to electricity.

**The Bangladesh program is one of the most successful solar home system programs in the world.** It is a model that is bringing cheaper and more reliable electricity to remote areas of the country and has potential to go beyond Bangladesh and be adopted in other developing countries.







## IMPACT SHOWCASE 2: Micro-Hydros Earn First Carbon Revenues in Nepal

*The rivers, lakes, and glacial melt in the rugged mountains of rural Nepal offer plenty of renewable resources for energy. Between 2007 and 2014, the Nepali government built over 400 micro run-of-the-river hydropower plants with help from the WBG.*

**These new micro-hydros provide almost 150,000 rural households—or about 625,000 people—access to reliable and clean power.** The smallest micro-hydro plant, at 7 kilowatts, provides electricity to about 100 households. The largest one, at around 116 kilowatts, serves close to 950 households (over 4,000 people).

**And for the first time in Nepal and South Asia, a micro-hydro project has issued carbon credits by replacing diesel fuel with renewable energy.** These credits are sold, and the revenue helps pay for operations and maintenance of the hydros. In May 2015, the project issued 66,345 tons of CO<sub>2</sub>. The credits were purchased by the CDCF, which also provided technical assistance to develop the project.

**Micro-Hydros Change Lives**  
**The micro-hydros are changing lives by lighting remote Nepali villages with off-grid, renewable electricity.** Streets and businesses light up at night, increasing safety and attracting customers. Children have light to do their homework. People listen to the radio, charge their cell phones, and power small machinery. Electricity is

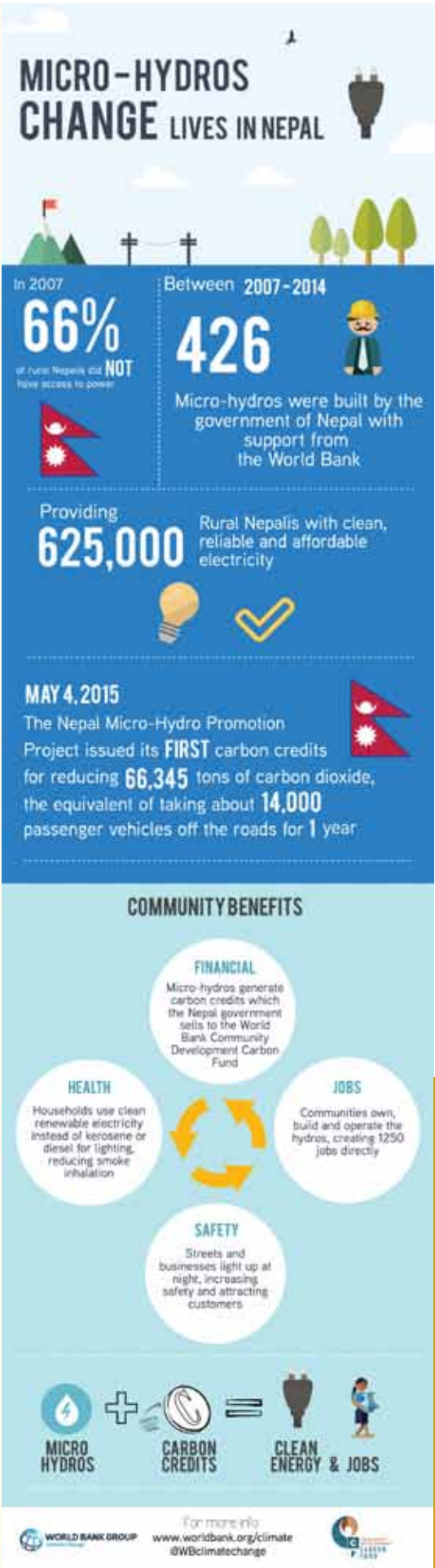
also boosting local mechanization for grain and saw mills and printing shops, creating local jobs.

**Other benefits are improved health and household finances.** People breathe in less smoke from oil lamps and diesel generators. They spend less money on kerosene, diesel, and batteries. Moreover, the environment benefits from reduced chemical pollution associated with the use of dry cell batteries.

**Community Ownership of the Hydros**  
**Each community was able to install a micro-hydro at a subsidized price, at between 35 to 55 percent of the total investment.** Some of the communities are so remote that their only access to the hydros is on foot—a hiking trip of seven hours along treacherous mountain trails. Significantly, the hydros are owned, constructed, managed, and operated by the communities themselves, oversight and training being provided by AEPC's 16 district centers.

**They also established a hydro management committee that is responsible for collecting a small, flat fee from households and businesses to pay for operator salaries and small repairs.** About 1,250 plant operator positions have been created, thereby further supporting the communities.

While the earthquakes of April and May 2015 affected the entire population and damaged about 130 of the 426 plants, the Nepali government has pledged to rebuild all damaged plants; 84 were already fully or partially operational again in July 2015.







## IMPACT SHOWCASE 3: Climate-Smart Farming in Kenya

*BioCF projects help small landholders develop farming skills, which in turn increase yields, income, and ultimately support food security and build resilience to climate change. Also, BioCF payments for carbon credits add another layer of support and income stability.*

**As farmers learn new methods to revitalize their land, they reap the benefits and share their experiences with their community.** These improved methods—available at no cost to the farmers—include guidelines for planting trees and crops as well as for harvesting in ways that produce natural nitrogen fertilizers in the soil (thereby improving the longevity of the land). As a result of this new land management approach, communities now value standing trees and the resources they provide more than in the past.

### *Land Management Generates Carbon Finance*

**In Kenya, the BioCF showed innovation in sustainable agriculture land management practices by issuing carbon credits (the first country to do so) and developing**

### **a carbon accounting methodology for agricultural land management.**

Working with the Swedish NGO Vi Agroforestry, the project has provided training in sustainable land management to over 30,000 smallholder farmers. These farmers live in an area that covers approximately 45,000 hectares in Kenya's Nyanza and Western provinces.

**The farmers have seen maize yields double and even triple in only three years.** Despite not being allowed to own land, women have also been actively engaged in the project and are known to adopt more diverse land practices and produce higher returns than men. Women have also taken on leadership roles, aggregating information from individual farms, and training their peers.

### *Benefits Extend beyond Farmers to Communities*

**A total of 25,000 tons of CO<sub>2</sub> have been sequestered so far as a result of better agricultural practices, and Kenyan farmers have received \$65,000 in carbon revenue for environmental services provided.** The benefits derived from higher incomes thanks to higher agriculture yields and carbon payments go beyond individual farms. They have enabled the Kenyan community to plow investments back into the land and serve as a model for other agricultural land management projects.

*Working with the Swedish NGO Vi Agroforestry, the project has provided training in sustainable land management to over 30,000 smallholder farmers.*







*“We had to change shifts frequently before to load coal into the boiler. Our lungs could only take 30 minutes of thick smoke at a time. Now I am trained, and operate a programmable boiler in a smoke-free and comfortable room. Life has changed,” said an operator.*

## IMPACT SHOWCASE 4: Carbon Credits Heat Moldova in Bitterly Cold Winters

*The Republic of Moldova—one of the poorest countries in Eastern Europe—suffers from bitterly cold winters, with temperatures dipping well below freezing. It is expensive to keep public buildings warm but new boilers and a restored heat distribution network have increased energy efficiency and reduced fuel consumption, helping public entities save 30 to 40 percent on energy costs for heating.*

**Moldova has installed 317 efficient boilers in public buildings such as schools, hospitals, and community centers.** Before, the buildings were heated using inefficient and outdated coal, mazut, or wood boilers, using a deteriorated heat distribution network dating back to Soviet times.

**The more reliable and efficient heating technology adopted has three direct benefits:** (i) it lengthens the period that public buildings are heated (from 90 to 190 days per year), (ii) it raises room temperatures from 13° to 18° Celsius, and (iii) it reduces smoke, compared with the old coal boilers. But, perhaps most significantly, it also contributes to energy savings and lowers GHG emissions. The government’s goal was to increase the overall heating efficiency by up to 90 percent.

**The project is the first in the country to earn certified carbon credits,** which are sold to the CDCF.

The revenue helps municipalities pay for investment in energy-efficient measures such as insulation and new windows, as well as the salaries of the technicians who operate and maintain the new boilers. So far, the project has reduced GHG emissions by 89,500 tons of CO<sub>2</sub>, the equivalent of taking about 19,000 modern vehicles off the roads for a year.

### *Directly Benefiting the Poor and Vulnerable*

**The project helps about 40,000 rural poor across Moldova.** In the countryside, the health of children, teachers, medical staff, patients, and boiler operators has improved. Warmer public buildings during the winter means, for example, that schools can now have longer teaching days and students can focus better in class.

**Before, only some hospital rooms were heated and patients were crowded into a few rooms to save on energy.** Nowadays, even such simple things as affordable hot water during the colder months is helping to improve hygiene, as more people wash their hands.

### *Experience Can Promote Additional Climate Change Policies*

**Finally, the project has helped position Moldova as it prepares to implement its national climate plan.** Working with the WBG, the country has built its MRV capacity to track carbon credits and raise climate change awareness at the policy, institutional, and local levels. This gives it valuable experience that will be useful as it moves ahead to address climate change on a national level.

*Before, I had to wear gloves in class during the winter because my hands were so cold and I could not write easily,” said a Moldovan schoolgirl.*





# WHO WE ARE



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