



# 10 Years of Experience in Carbon Finance

Insights from working with carbon markets for  
development & global greenhouse gas mitigation



*“Climate change is a development, economic, and investment challenge. It offers opportunity for economic and social transformation... That is why addressing climate change is a critical pillar of the development agenda”*

—Robert B. Zoellick, World Bank President  
UN Climate Change Conference, Bali,  
December 2007

The World Bank’s carbon finance operations expanded from the pioneering Prototype Carbon Fund, which helped catalyze a nascent carbon market in 2000, to 10 funds and facilities with a current capitalization of more than US\$2.5 billion.

The experience of carbon finance has—and continues to be—one of rich learning. Significant capacity building has occurred and must be sustained. This brochure has been prepared to highlight some of the most important lessons learned from the first ten years of carbon finance.

Carbon finance is an important revenue stream for greenhouse gas mitigation projects. It has so far played a catalytic role in leveraging other sources of finance in support of low carbon investments. However, there is still room for improvement. As we enter the second decade of carbon finance, the World Bank is taking stock of its experience and progress to date to inform future development and implementation of the mechanisms.

- ▶ The CDM and JI market mechanisms are an important tool for private sector action on climate mitigation, which should be further encouraged.
- ▶ There are significant developmental and social co-benefits associated with market mechanisms that need to be recognized.
- ▶ An obstacle to maximizing the leverage potential of carbon finance for low carbon investments is insufficient predictability in the CDM.
- ▶ A supportive enabling environment and overall investment climate are key to attracting CDM investments.
- ▶ Some CDM decisions have had a disproportionate negative impact on Least Developed Countries.
- ▶ Environmental integrity is essential for both the overall climate regime and the carbon market. However, additionality remains a challenge due to its inherent subjective nature.
- ▶ Improvements to the CDM are needed to scale-up emission reductions. Measures are already being taken and must be sustained and stepped-up.

# 1 Carbon finance at the World Bank

## International climate change context and the role of the World Bank

In 2000—five years before the Kyoto Protocol to the United Nations Framework Convention on Climate Change entered into force—the World Bank, with its partners in the Prototype Carbon Fund (PCF), established the first global carbon fund to create a demand for carbon credits and to gain experience with the Kyoto Protocol project-based mechanisms, i.e., the Clean Development Mechanism (CDM) and Joint Implementation (JI). This, along with

The World Bank helped catalyze the global market for emission reductions

subsequent carbon funds and facilities, helped catalyze a nascent market for emission reductions which has since seen dramatic changes. Many other players have entered the CDM and JI market where transac-

tions in 2008 alone amounted to close to \$7 billion. Coming up to the 10-year anniversary of the PCF, the Bank is taking stock of its experience in the carbon market and sharing lessons and insights from using the Kyoto Protocol project-based mechanisms to achieve greenhouse gas (GHG) mitigation and sustainable development through projects in developing countries and in economies in transition.

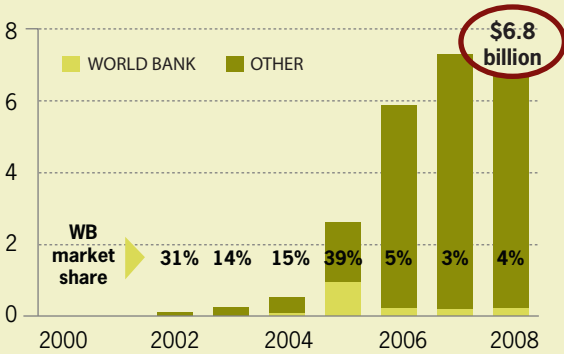
The World Bank's approach to carbon finance has been based on three main objectives:

- ▶ Strengthening the capacity of developing countries to benefit from the market for GHG emission reductions
- ▶ Ensuring that carbon finance contributes to sustainable development, beyond its contribution to global environmental efforts
- ▶ Assisting in building, sustaining and expanding the market for GHG emission reductions

The market for project-based emission reductions has grown significantly since the early days of the PCF, and has the potential to grow substantially more to become instruments of a much larger scale shift to low-carbon development. The World Bank's pioneering carbon finance operations continue to play a role in leveraging new public and private investment into CDM and JI projects, as well as providing



**FIGURE 1 Value of CDM & JI transactions (per year)\***  
(US\$ billion)

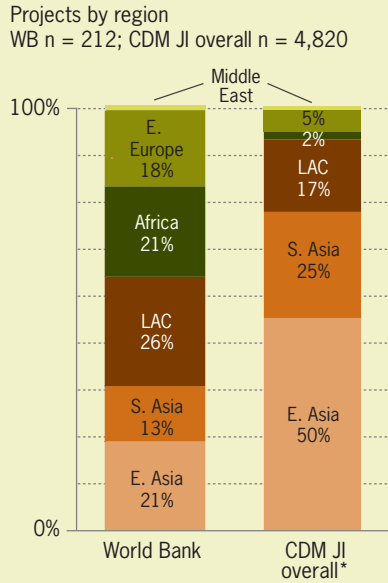


\*vintages up to 2012.  
Source: *State and Trends of the Carbon Market (WB)*.

technical assistance for capacity building and project preparation. Further growth of the market will require the establishment of a clear and predictable regulatory framework with a robust price signal to provide a continued incentive to mobilize capital in support of climate-friendly as well as environmentally and socially responsible projects in the Bank's client countries.

While the CDM and JI have achieved significant successes in catalyzing low carbon investment and private sector participation, it is clear that the experience has been one of "learning-by-doing" and that the learning continues. The experience of the World Bank, as described in this brochure—and to be further elaborated in a forthcoming report—shows both the successes and the options that exist for improving the effectiveness of the mechanisms. Looking at 10 years of trial and error, this brochure explores how to build

**FIGURE 2 Geographic distribution of projects** (by number of projects)



\*Source: UNEP RISØ

on the rich carbon market experience. As the international community embarks on urgent, effective and practical action that is required to respond to the challenge of climate change, it will need to use the full range of instruments at its disposal—including carbon finance.

### Growth of carbon finance at the World Bank and its portfolio

In 2000 the PCF started with \$160 million (USD). Since then, the World Bank has gone on to create a whole family of funds and facilities—capitalized at approximately \$2.5 billion—designed to facilitate access to the mechanisms by its borrowing coun-

tries, reduce risk, and extend the reach of carbon finance into diverse niches in the market. It continues to set an example in this field both by effecting “learning-by-doing” and providing catalytic carbon finance to under-represented project types, with funds like the BioCarbon Fund and the Community Development Carbon Fund, respectively focusing on areas such as land use/forestry and small-scale projects in the poorest communities.

Meanwhile, the overall primary market for CDM and JI grew from exploratory transactions, limited in number, in the early 2000s to a much larger volume of transactions from 2005 onwards, with the entry into force of the Kyoto Protocol and the official start of operations in the European Union Emissions Trading Scheme (EU ETS).

Over the years, the World Bank has reviewed more than one thousand project ideas of which only about half—526—were finally pursued. A further attrition



rate of 50% has yielded the current portfolio of about 213 active<sup>1</sup> projects spread across fifty seven countries. The World Bank carbon funds aim for portfolio diversification—both in terms of geography and of technology/sector—something which has not always been easy to achieve. Nonetheless, while the overall global CDM/JI market is heavily weighted towards East and South Asia (China and India), the projects in the World Bank portfolio are more evenly distributed between East Asia, South Asia, Latin America, Africa and Eastern Europe (with a small number in the Middle East). The World Bank has over forty projects in Africa, representing more than 20% of the projects in its portfolio and pipeline. By contrast, only 2 % of projects in the overall CDM/JI pipeline



<sup>1</sup> Active projects are defined as those that are registered/ finally determined, in validation / determined or are active in the World Bank pipeline.

are located in Africa<sup>2</sup> which is a reflection of the challenges of developing projects in the region and the overall lower mitigation potential.

Although projects in Africa represent a large percentage of the World Bank's portfolio by *number* of projects, they only represent five percent of the Bank's contracted *emission reduction volume*—reflecting the small size of many of these projects

compared to much larger projects in other parts of the world, notably China.

In terms of technologies, the World Bank's portfolio of projects largely mirrors the global CDM/JI portfolio. The World Bank project types include hydropower (24%), landfill gas (14%), methane avoidance (8%), afforestation and reforestation (18%), other renewable energy (6%) and energy distribution (5%).

## 2 Unleashing the leverage impact of carbon finance

One of the many successes and a key feature of carbon finance is that it can both complement and leverage other financial resources to unlock low carbon investments in host countries.

### Leveraging ability of carbon finance can unlock low-carbon investments

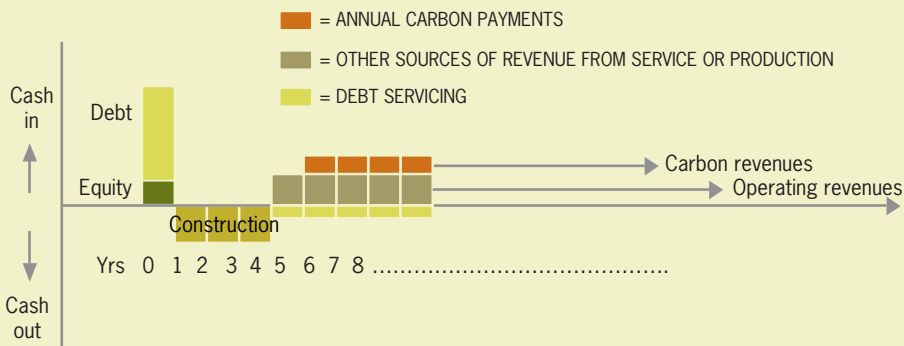
Carbon revenues provide an additional revenue stream to low carbon projects that enhances the overall financial viability of the project while rewarding more GHG friendly investments and purchasing decisions. The “pay-upon-performance” nature of the asset creates positive incentives for good management and operational practices to sustain emission reductions over time.

Carbon finance revenues can also leverage upfront capital for underlying investments by addressing the initial investment barrier and providing incentives to overcome social inertia, lack of awareness, transaction costs and the financing of programmes of activities. The origin of underlying capital for CDM projects in the World Bank portfolio highlights the large share of private investment that has been put into climate action. If this experience is extrapolated to the market as a whole, it is estimated that CDM transactions have catalyzed over \$100 billion of mostly private underlying capital for low carbon investments over the 2002–2008 period.

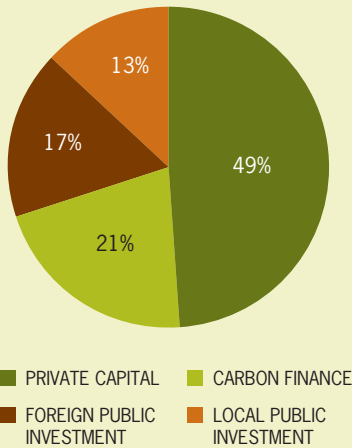
However, it is worth emphasizing that reorienting financial and investment flows to more low-carbon outcomes remains one of the main challenges for climate action. While carbon finance can prove a powerful

<sup>2</sup> UNEP RISØ, October 2009.

**FIGURE 3** Illustration of project financing with carbon revenues



**FIGURE 4** Origin of capital financing in World Bank CDM projects



bankability and allow access to capital markets, largely due to lack of familiarity with carbon finance opportunities, specific risks and transaction costs associated with the mechanisms.

A number of actions can help maximize the transformational impact of carbon finance, notably by enhancing long-term carbon finance revenues, leveraging carbon finance and making it fit better into public and private sector investment decision-making.

incentive, its catalytic power remains to be fully exploited especially in terms of overcoming—along with other resources—the financing barriers for low-carbon opportunities on a greater scale. There have been few examples of financial engineering around carbon revenues to boost project



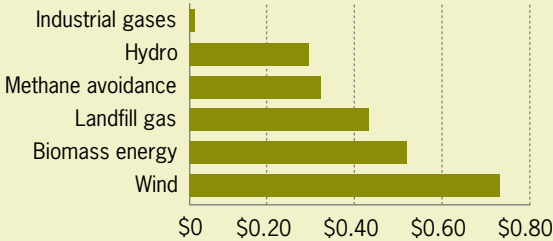
## Experience with project development costs

The costs and delays associated with carbon finance transactions can be a challenge. These costs vary by project size and technology. The World Bank has found that it takes

roughly two years from project idea acceptance until the signing of the emission reductions purchase agreement (ERPA). The preparation costs associated with a carbon finance transaction over that time period includes due diligence work—which, in the case of projects in the World Bank’s portfolio, requires ensuring compliance with the World Bank environmental and social safeguard policies—and amount to an average of \$200,000. These costs exclude additional regulatory costs for initial validation (pre-registration) and periodic verifications.

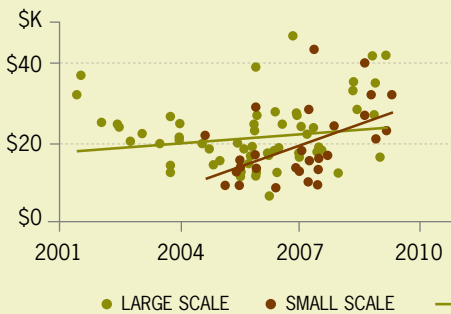
## Project development costs vary by size and technology

**FIGURE 5 World Bank project development costs by technology (n = 53; registered)**  
 (“\$/expected tonne”)

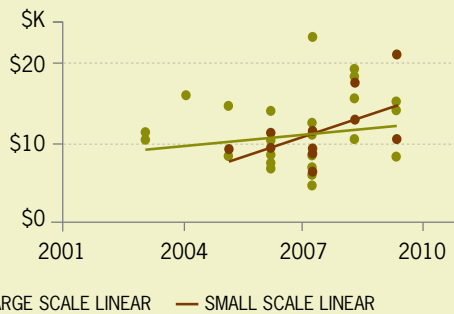


World Bank experience points to CDM regulatory cycle costs (validation and verification) increasing over time. This is contrary to initial expectations that costs would decline as experience was gained and competition increased amongst the auditors (Designated Operating Entities). Additionally, the regulatory costs for small projects have increased at an even faster pace than for large projects, even though

**FIGURE 6 Prices of CDM validation (World Bank portfolio, PoAs excluded)\***



**FIGURE 7 Prices of CDM verifications (World Bank portfolio)\***



\*Inflation-adjusted (2009 dollars) €/\$ rate = 1.40.



the intention was to simplify procedures for small-scale CDM projects. This may be in part because validation and verification prices are not based on the size but rather the on degree of complexity of the project, and small projects are often in sectors that tend to be more complex to validate and verify.

Some technologies have proven to have lower costs per ton of GHG reduced than expected. This largely correlates with project size: In other words, technologies that provide for larger scale projects generate

more emission reduction credits, thereby allowing the fixed costs to be spread.

Reducing CDM-related costs will require streamlining the project cycle. Efforts to enhance clarity and practicality in rules and documentation requirements are steps in the right direct direction. Moving towards more practical and less costly monitoring requirements is also important. Providing more avenues for communications with project entities and project developers as well as stakeholder consultations will also be useful.

## 3 Supporting emission reductions and sustainable development simultaneously

### The mechanisms as tools to combat climate change and support development

The experience of the World Bank indicates that there are significant developmental co-

Significant  
developmental  
co-benefits realized  
through the market  
mechanisms

benefits associated with market mechanisms. Participation in the mechanisms has raised overall awareness about low carbon solutions and leveraged capital for climate-friendly projects in host countries. It has also provided opportunities to: (i) support basic

development needs and broader socio-economic co-benefits such as improving energy access and energy services; (ii) develop local natural resources; (iii) provide solutions for solid waste management, a problem for many developing countries with rapidly increasing urbanisation rates; (iv) reduce both local air and water pollution; and (v) generate employment. Many CDM (as well as JI) projects have played an important role in contributing to technology transfer and, even more, to technology diffusion—which is critical to broadening the reach of low carbon efforts. The CDM and JI projects have also seen significant benefits at the grass-root level of building capacity and of local empowerment of vulnerable groups.

## Carbon finance a driver for grass root climate friendly change

### CDM/JI engaging entrepreneurs in driving climate-friendly change

The CDM and JI market mechanisms are sparking the imagination of entrepreneurs and

we have seen that they can be a real driver for climate-friendly change. For example, through the signal of the carbon price, there have been important transformations in the solid waste management sector, supporting sustainable urbanization throughout the developing world. The market-based mechanisms are incentivizing

### Capacity Building

In the early days of the carbon market, limited knowledge of and experience with the mechanisms was a real problem for most developing countries and economies in transition. It prevented many countries from being effective players in this emerging market. As a response, the World Bank designed and implemented multiple capacity building programs, including the programs 'National Strategies Studies (NSS)', 'PCF Plus' and 'CF-Assist', to support host countries' endeavors to develop an enabling environment for project-based carbon transactions. Capacity development efforts focused on:

- ▶ strengthening institutional arrangements at the national level, including support for establishment of Designated National Authorities/Focal Points or CDM/JI promotion offices;
- ▶ assisting in CDM/JI project portfolio identification and development, in particular in sectors bypassed by the market due to, methodological challenges for example;
- ▶ fostering market development through a variety of global and regional knowledge sharing fora and business development platforms, such as the annual Carbon Expo, the Bank's flagship event<sup>1</sup> for carbon market stakeholders;
- ▶ supporting strategic assessments and analytical work at the national and sectoral level, aimed at raising awareness across stakeholder groups, reaching out to relevant decision-makers, and facilitating engagement of the private sector in project identification and development.

Significant progress has been achieved in this regard as a result of these and similar capacity building programs of other development agencies (e.g., UNEP's CD4CDM). Several countries in Asia and Latin America have successfully established key conditions needed for attracting and utilizing carbon finance. However, considerable effort is still needed in some countries and regions, especially in Sub-Saharan Africa and Central Asia, which have not benefited much from the carbon market during the first commitment period of the Kyoto Protocol. At the same time, as the global debate now moves towards a new climate protection regime after 2012, capacity-building needs and challenges are evolving as well: New instruments and concepts such as programmatic and sector-specific approaches have emerged or are under discussion, and the need to scale up the activities and reach out to distinct practitioner and stakeholder groups has grown significantly.

<sup>1</sup> The annual Carbon Expo ([www.carbonexpo.com](http://www.carbonexpo.com)) is a partnership between the World Bank, the International Emissions Trading Association (IETA) and Koelnmesse (and in 2009, Fira Barcelona).

project developers to find ways to reduce GHG emissions, such as improving the efficiency in brick-making and providing the needed financial support for the sustainable production of pig iron.

The private sector is increasingly aware that the barriers to and costs of improving energy efficiency in household consumption can be partly addressed with carbon finance. This is illustrated through World

Bank micro-level energy efficiency activities targeted at households in Senegal, Rwanda and Bangladesh.

Given the climate challenge and the need for action, it is imperative to amplify these efforts and activities. Such scaling up will require building on the rich experience and impressive learning done through the market mechanisms to make sure they can stimulate more of these activities.

## 4 The project cycle – improving efficiency and probability of project success

### Key features of successful projects

From the World Bank's experience of looking at more than 1,000 project ideas and actively working on more than 200 projects, we can identify four key features of successful CDM/JI projects. They closely mirror those found in development projects more generally. These features include:

Key features of successful CDM/JI projects largely mirror those for development projects

**1. A committed champion** – someone within the company or government who enthusiastically promotes the progress of the project through its critical stages to obtain resources and/or active support from top management. External

technical assistance may be necessary when facing low capacity, but temporary consultants do not make effective champions.

**2. Strong project design & planning from the start** – which includes feasibility studies as well as financial and methodology assessments early in the project cycle. Detailed upstream financial and technical due diligence must be completed





## Barriers for projects in Least Developed Countries (LDCs)

LDCs have experienced lower participation in the CDM to date. That said, nothing replaces good governance and an enabling environment when evaluating a country's ability to attract new investments. This is also true for carbon finance. Nonetheless, some decisions in the CDM have had a disproportionate negative impact on the LDCs. We would highlight four:

- ▶ Suppressed demand—the low emission baseline calculations of LDCs often rely on historical experience and therefore

do not consider the latent demand for energy that exists. Instead, they assume the continued supply of low/poor quality energy services as these countries develop. In addition to not being compatible with sustainable development, this leads to such low baseline levels that projects, such as energy efficiency, do not generate sufficient emission reductions for carbon finance to have an impact.

- ▶ Treatment of projects that replace non-renewable biomass—a conservative decision in regards to the replacement of firewood led to a drastic impact on the emission factor for these types of projects and resulted in essentially cutting in half the emission reduction potential. It has disproportionately affected Sub-Saharan Africa and projects in poor communities where firewood, most often from non-renewable sources, is used more often for cooking and heating than other fuels.
- ▶ Treatment of forestry projects and exclusion of agriculture under the CDM—this situation affects LDCs particularly hard as these sectors are relatively speaking more important than in middle-income developing countries. Forestry projects are penalized with “temporary” credits that are not recognized in some markets, e.g., the EU ETS, depressing demand and price for these credits. Agriculture and avoided deforestation—both extremely relevant for poor communities—are currently not eligible project types under the CDM.
- ▶ Transaction costs and onerous CDM process requirements—methodologies and documentation requirements are often geared toward the most advanced developing countries and do not work well for smaller projects and less sophisticated project entities, more often found in LDCs. Streamlined methodologies and registration procedures that are expedited, reflect circumstances on the ground, and do not create a barrier for participation are crucial for LDCs since the projects tend to be smaller. The CDM Executive Board should seek to further recognize differences in practices and contexts.

Some CDM rules negatively impacting least developed countries

on project ideas, as well as early consideration taken of monitoring requirements that will arise once emission reductions are generated.

3. **Underlying financials must be strong** – projects must make financial as well as technical sense and lead “to real, measurable and long-term benefits related to mitigation of climate change.”<sup>3</sup> Furthermore, like other investment decisions, CDM/JI projects are also affected by the issues and challenges in the overall investment climate in host countries.
4. **Potential to reduce emissions** – projects that have the ability to reduce large volumes of GHG reductions relative to their baseline are more likely to attract investors and carbon asset buyers. Also, larger projects are better able to absorb the fixed CDM transaction costs.

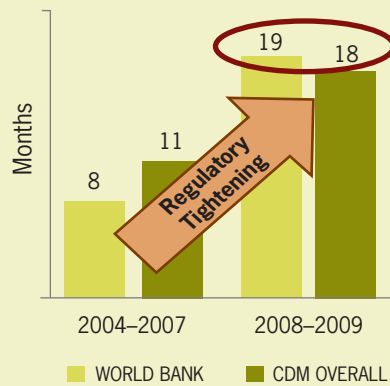
### Mitigating Project Risks

#### Due diligence needed early in project cycle to identify risks

As for any other successful investment decision, thorough due diligence is also a must for CDM and JI projects early in the project cycle in order to identify key risks such as host country and implementation risks. As an example, a wind power plant in a country with poor governance has to deal with the same underlying risks as any other project, whether it generates carbon credits or not.

<sup>3</sup> Kyoto Protocol Article 12

**FIGURE 8 Length of CDM project registration process (from start of validation)**



\*Source: UNEP RISØ.

In addition, however, CDM and JI projects face risks associated with the regulatory process. These risks include the lack of visibility about a post-2012 market structure, in particular the type and extent of demand for CDM credits, as well as rules around how additionality will be addressed in any later system, and the overall CDM project cycle.

The CDM regulatory risks associated with the project cycle are twofold: rejection and delay. Regulatory approval is a binary outcome and in the World Bank’s experience only a few projects (10) have been rejected outright. The largest risk is therefore delay. The CDM project cycle has increased in length: The World Bank has noted it currently takes approximately 12 months to complete a project’s validation and another six months to get it

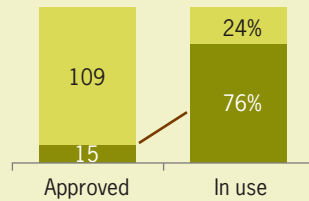
registered as a CDM project. The length of the regulatory process is a result of many factors, including for example, the fact that a much larger volume of projects are entering the CDM regulatory process than originally expected, the insufficient capacity to process these projects in a timely manner, and the often complicated rules and onerous—and not always well understood—requirements in terms of documentation. It is clear that this long timeframe is difficult to fit into typically shorter private-sector investment decision-making processes. Moreover, this is a substantial obstacle for a project entity in a developing country: As payments are performance-based, this means that credits and payments are not typically exchanged until long after the project is commissioned and has obtained its regulatory approvals.

### Increasing accessibility to carbon finance through methodology development

Methodologies are central to the project-based mechanisms. A methodology clarifies the *approved* procedures to determine emission reductions from a project activity over time, including, *inter alia*, the methodology's eligibility criteria, the emission baseline; and monitoring requirements.

Development of new methodologies are thus critical to the development and expanded reach of the CDM/JI since each new methodology has the potential to unleash a new path for a different type

**FIGURE 9** Comparison of number of approved CDM methodologies with their actual use



\*Source: UNEP RISØ.

of project/activity to access carbon finance. Currently there are over 120 active and approved CDM methodologies, of which 52 have been submitted for approval or include contributions by the World Bank. However, the development of methodologies is a public good since once

### Developing and broadening methodologies key to expanding reach of CDM/JI



a methodology is approved it can be used by any project developer. As such, there is no clear first mover advantage for those that champion methodologies. But there are costs. In the World Bank's experience, a new methodology costs approximately \$125,000 and takes two years to be developed, from inception to approval. Clear incentives to develop broader and more widely accessible methodologies are missing, slowing down innovation and climate change mitigation.

Although there are numerous approved methodologies, too few have broad applicability. More than three quarters of all registered CDM projects or projects under validation use one of only fifteen of the approved CDM methodologies. Seventy-one approved CDM methodologies have never been used at all or only once. Given the time and costs associated with the development of a new methodology, this is certainly a sub-optimal use of limited resources. It largely reflects limitations of the bottom-up approach, which, while providing flexibility and opportunities for methodologies of all types of projects to be considered, results in fewer general and broadly accessible methodologies. This is often a result of an iterative methodology approval process during which stringency and applicability restrictions tend to increase. Defending broader methodologies as compared to more narrowly defined methodologies may take more time and therefore lead to higher costs. It is also true that methodologies—typically developed during the concept stage of a project—are



not sufficiently flexible to accommodate evolving project designs.

Another key challenge associated with the methodologies and their applicability is determining what is sufficiently “conservative” in the calculation of GHG emission reductions in the face of uncertainty. Perfect accuracy is very often not possible and would be too costly, and consequently methodologies need to remain “conservative” to ensure environmental integrity. However, defining what is “conservative enough” is a matter of subjective interpretation. Tools that control risks and define uncertainty could help reduce costs of submitting broader methodologies by streamlining project assessment and enhancing consistency, transparency and predictability. This could also be facilitated by better procedures for the submission and revision of methodologies and broadening their scope and eligibility.

# 5 Insufficient predictability limits carbon finance impact

Insufficient predictability in terms of rules and process for CDM and JI has a detrimental effect on the potential of carbon finance to catalyze and leverage other sources of finance.

## **End of Kyoto First Commitment Period**

While the CDM and JI help leverage capital for underlying climate investments, the extent to which they continue to do so is hampered by the market's uncertainty beyond 2012—the end of the Kyoto Protocol's first commitment period. Credits are generated from the time the project is registered; losses due to delays in reaching registration cannot easily be recuperated by later vintages. Vintages beyond 2012 face a lower demand with associated price implications. Many World Bank ERPAs involve purchases of post-2012 vintages, but these purchases are limited in volume and tenor. Many buyers still refrain from purchasing post-2012 vintages.

## **More regulatory predictability**

The CDM has been largely developed through a “learning-by-doing” approach. A substantial amount of learning has occurred

since the start of the CDM—and this is to be commended. However, too frequent changes to rules, procedures and methodologies are impacting the ability of market actors to make sound assessments and decisions. The regulatory structure must mature and consolidate the “learning-by-doing” in order to enhance predictability and efficiency. This could be achieved by streamlining and clarifying both the rules of the mechanisms along with procedures and documentation requirements. Other possible improvements include the development of more top-down methodology guidance by the CDM regulators.

## **Additionality**

Environmental integrity is essential for both the overall climate regime and the carbon market. In the context of CDM (and JI), environmental integrity is preserved though the concept of additionality. While efforts have been made by the CDM Executive Board to provide greater clarity, proving additionality remains a challenge because of its inherent subjective nature. What would have happened in the absence of the mechanism, by definition, cannot be verified. Certain types of projects, in particular gas capture-type projects (capture of industrial gases; landfill gases)



may offer the closest to “black and white” assessments of additionality. But the demonstration and assessment of additionality is more complex—and underlying assumptions critical but not universal—for projects that produce a valuable output other than emission reductions, such as electricity, cement, or energy savings, all key areas for addressing climate change globally. Moreover, traditional investment analysis is not appropriate for certain projects, such as demand-side energy efficiency, where neither the barriers nor the cost of delivering energy efficiency are captured.

There are options for assessing additionality that merit consideration to address commonly heard criticism, such as the notion that demonstrating additionality is too subjective and open to manipulation. Such options could be the development of a definition of additionality according to exogenous criteria, standards and

benchmarks. Additionality could then be defined according to the current ‘state of play’ and observed market realities, or perhaps policy objectives for a given sector, thus avoiding second-guessing what might have been “business as usual”. Environmental integrity could be maintained and perverse incentives avoided by clearly indicating that projects which meet or beat certain ambitious policy objectives or technology/sector specifications would be deemed additional. This would provide investors with the increased certainty they need to make more climate-friendly investments, thereby maximizing the leveraging impact of carbon finance. This could—and must—be done while maintaining environmental integrity.

**Additionality assessment must be made more objective through practical rules**

## 6 Status of Joint Implementation and Green Investment Schemes

Despite JI being the focus of several early World Bank carbon finance operations, the World Bank’s JI portfolio consists of relatively few projects. Originally it was anticipated that JI projects (and to a certain extent green investment schemes) would be easier to develop and execute because an overall national emissions cap assured envi-

ronmental integrity in the host countries. These expectations have not been met, largely for two reasons:

1. Many of the Eastern European countries originally expected to host JI projects are participants in the EU-ETS. Emissions trading and JI can be complementary

but the interplay between the two mechanisms has proven to be challenging. It must be noted that for many potential JI projects, the EU-ETS offered better opportunities in terms of carbon assets (EU Allowances) that are valued at a higher price than JI credits. For others, however, such as the projects in demand-side energy efficiency, it created difficulties including concerns of double-counting.

2. JI and GIS create a significant role for national institutions and, with it, substantial requirements for the host gov-

ernment in terms of capacity. The JI and GIS experience to date shows that it takes time and resources to build national systems, institutions and capacities, as governments must develop rules to manage these new national assets, including domestic procedures and guidelines for project approval. In addition, JI projects are associated with an extra host country risk compared to CDM, as governments of JI host countries each develop their own JI guidelines and are responsible for the transfer of emission credits.

## 7 Building on experience going forward

Market mechanisms and carbon finance are now proven tools that can support policymakers in delivering mitigation. They have clearly demonstrated that they can help leverage low carbon investments through

addressing barriers and creating a revenue stream that sustains projects over time. However, experience with the

market-based mechanisms to date highlights that there is room to better exploit synergies with policies and various financial instruments which is necessary to scale-up carbon finance and to leverage greater amounts of low-carbon investments.

Certainly, new mechanisms and policy tools need to be considered for reducing

GHG emissions on a larger scale in the face of the increasing risk and urgency of climate change. However, CDM is constantly being improved and the continued potential of the mechanism should not be ignored. A significant amount of experience and infrastructure has been built in host countries in addition to substantial capacity building. These efforts must be enhanced and sustained and should inform the design of any new mechanisms and policy tools developed in the future.

The CDM Executive Board is taking steps to streamline procedures that would facilitate a larger number of CDM projects. These efforts need to be encouraged, sustained and stepped-up.

The World Bank's experience suggests that further scaling up through the CDM,

### Carbon finance: a proven tool to support GHG mitigation



including through developing programmes of activities (PoAs), will require a close examination of the various parts of the regulatory process including its overall governance—from the DOEs, the various panels, the UNFCCC Secretariat to the CDM Executive Board. This should be done with a view to, *inter alia*, enable the processing of a larger volume of projects, enhance consistency and predictability, facilitate better communications with practitioners and to reduce CDM transaction costs. Providing a long-term signal; streamlining the project cycle; broadening methodologies and mak-

ing them more practical and accessible; as well as increasing the use of standardization and benchmarks to assess additionality—all while maintaining environmental integrity—are some of the key changes necessary. These improvements can help pave the way for scaled up emission reductions, contribute to sustainable development and broaden the reach of carbon finance to new areas and countries—further consolidating the successes and learning that have already been achieved through implementing the flexibility mechanisms.

# Carbon Funds

## The World Bank Carbon Funds

### Specialty funds/facilities



**Prototype Carbon Fund:** pioneering Kyoto mechanisms since 2000



**Community Development Carbon Fund:** Focused on small projects that measurably benefit poor communities



**BioCarbon Fund:** Focused on land-use, land-use change, and forestry projects



**Umbrella Carbon Facility – Tranche 1:** Focused on two China HFC 23 projects

### Country funds/facilities



**Netherlands Clean Development Mechanism Facility**



**Netherlands European Carbon Facility**  
*(jointly managed with IFC)*



**Spanish Carbon Fund**



**Italian Carbon Fund**



**Danish Carbon Fund**



**Carbon Fund for Europe** *(jointly managed with European Investment Bank)*

### Two new facilities focused on post-2012



**FCPF** focused on reduced emissions from deforestation and degradation (REDD)

**The Carbon Partnership Facility**

**CPF** focused on long-term investment programs and technologies for transition to a low-carbon economy



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