



## 7.0 capacity building & research

PCF experience so far demonstrates that the development of an effective emission reduction market depends on two critical components. First, host governments need to build their capacity to understand and meet the Kyoto Protocol's requirements and to facilitate CDM/JI transactions. Second, the private sector, especially in the host countries, needs greater capacity to identify carbon financing opportunities, assist with project preparation and supervision, and undertake validation, verification, and certification of projects.

The PCF has a significant contribution to make in building the capacity of developing countries, economies in transition, and the private sector to address both components. This is achieved primarily through a learning by doing approach and research, in partnership with WBI's efforts to deliver outreach and training activities in support of the PCF.

### **LEARNING BY DOING**

The PCF's main contribution to capacity building is its learning by doing approach, that is, working hand-in-hand with the host country to implement its first CDM or JI project, or the first-of-kind project in a particular sector, from conception to the delivery of ERs. This differs from traditional capacity building since host countries take the initiative to develop and implement projects that lead to ERs, but have access to the expertise of the PCF team in developing the project.

Such an approach allows for the public sector in the host country to develop the administrative capacity to facilitate CDM and JI transactions, identify and correct any gaps in local laws necessary to register and transfer ERs, and develop an overall strategy to attract further investments.

The approach also provides the local private sector first hand experience in the implementation of the project cycle; allows for the development of local expertise for baselines, monitoring, and verification; and provides invaluable experience in negotiating an ERPA that is fair and equitable to both the buyer and the seller.



As for the PCF, it learns from each and every project, and thus increases its knowledge asset, which in turn is disseminated widely. Thus, learning by doing is a win-win approach.

### **PCFplus PROGRAM AND WBI PARTNERSHIP**

With donor assistance from the Governments of Canada, Sweden, and Finland, a capacity building program called PCFplus was established with specific components in outreach, training and research. The objectives of the program are to enhance the operations and activities of the PCF and its partners, to assist all market participants by providing know-how, and to reduce risks and transaction costs in the emerging carbon market.

At the end of fiscal 2001, the PCF announced a partnership with WBI to deliver the training component and support the outreach component of the PCFplus program. The training program is designed to provide assistance to project proponents on the PCF project cycle and to disseminate information on lessons learned.

Much of the training is geared toward building the capacity of representatives from the public and private sectors of developing countries and economies in transition to develop and negotiate a PCF project. It goes through the various steps necessary to confirm and quantify the emission reductions that are likely to occur in a given project.

One of the main features of the outreach component is the fellowship program. Other outreach activities include workshops around PCF project negotiations and financial support for host country and NGO participation in PCF meetings. Issues under study in the research component are described in detail later in this chapter.

### **PCF CONSULTATIONS AND WORKSHOPS**

In order to ensure a fair negotiation process, the PCF has implemented pre-negotiation consultations, which are essentially a capacity building initiative. This is an additional step in the project cycle not contemplated by the Kyoto Protocol (*See Figure 2.1*). These consultations, held with representatives of the project entity and the host country, ensure that all parties are aware of the relationship between pricing and risk, and serve to promote the equitable sharing of benefits arising from CDM and JI activities.

If a PCF project is considered unique or the project preparation process has been a 'best practice' experience, the PCF may share the lessons learned from a specific project with a wider audience of PCF constituents. These post-negotiation workshops are designed to disseminate lessons learned for an audience consisting of host country representatives, experts from other countries with similar technology barriers, and the PCF team. Such a workshop was organized on the Latvia Liepaja Solid Waste Management Project.



**Under the PCF instrument, sinks projects can account up to 10 percent of the Fund. To date, PCF has considered projects with sinks components in Romania and Brazil.**



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## THE LATVIAN EXPERIENCE

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The challenge of implementing a first-of-a-kind real-life project is an effective learning and capacity building process, in part because it:

- facilitates improvements to the existing legal, institutional, and financial systems to promote the participation of the host country in the CDM/JI market;
- promotes the development of national strategy and institutional linkages necessary for effective decision making;
- allows for practical experience in emission reduction transactions, including issues of price, financing conditions, payment schedule, risk, and transaction cost sharing.

In order to benefit from the CDM/JI market, the host country should have:

- a party with efficient institutional linkages responsible for endorsing and negotiating projects and for signing ERPAs;
- transparent criteria for project selection;
- a well-developed pipeline of high-priority projects;
- the ability to develop local capacity and expertise for the negotiation and implementation of high-quality ER projects and to reduce transaction costs.

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In and around negotiations or pre-negotiations, the PCF in partnership with WBI takes advantage of the presence of the PCF team in the field to host CDM/JI training workshops for representatives of the host country and neighboring countries. This allows for unique training using specific case studies and an exchange of views with recognized experts. So far, two training workshops have been organized, one for Sub-Saharan African countries in Kampala, Uganda, and one for Central and Eastern Europe in Szentendre, Hungary.

## RESEARCH

### Lessons from PCF Projects

In its pioneering role to implement new types of emission reduction transactions in an emerging market, the PCF often faces methodological obstacles requiring solutions that are unavailable through existing sources. Consequently, the PCF team conducts in-depth analysis and research that draws on the insight of in-house staff, guidance from UNFCCC Parties and PCF participants, as well as external expertise in related fields. As a matter of policy, the PCF publishes all research, unless confidential in nature, for the wider benefit of the CDM/JI community.

PCFplus research aims at providing scientifically sound answers to the most demanding methodological questions which confront the PCF. PCFplus research also intends to distill PCF's unique experience into general methodological lessons.

PCFplus research is managed by the World Bank's Research Group, which provides extensive in-house expertise, and also builds on a wide range of climate-related World Bank programs. The management team maintains a continuous dialogue with other organizations piloting research on project-based mechanisms.

### **PCFplus Research Activities**

The activities of PCFplus Research are focused in three areas.

- *Area 1. "Nuts-and-bolts" project issues.* At the heart of the ERs market are a host of practical issues related to project design, project implementation, and the measurement of emissions reductions. Area 1 includes, for example, the construction of unbiased, cost-effective, and transparent baselines; the design of efficient protocols for monitoring, verification, and validation; and financial or legal issues related to the definition and exchange of emission reductions.
- *Area 2. Potential market for ERs under JI and CDM.* Understanding the future price path of ERs is crucial for all participants in the carbon market. Despite huge uncertainties, some price assumptions must be made by both sellers and buyers in order to appraise projects, schedule investments and sales, and select project portfolios. Area 2 seeks to keep abreast of current market trends, insights on future carbon prices, and the assessment of potential CDM and JI supply curves.
- *Area 3. The CDM and sustainable development.* The implementation of the sustainable development objective of CDM remains controversial. Area 3 intends to bring some insights into this debate by addressing issues regarding the impact of CDM on development, and by analyzing the conditions under which this instrument might be most efficient in enhancing sustainable development.

### **FISCAL 2001 ACHIEVEMENTS**

During its first year of existence, PCFplus research has financed eight studies. Four were concluded in fiscal 2001, while final reports for the other half are to be delivered in Fall 2001. The results of these studies have been disseminated through the PCF website (under the PCFplus section).

Below are descriptions of three PCFplus research projects launched or concluded in fiscal 2001.

- *Can Carbon Finance Accelerate the Diffusion of Solar Home Systems in Developing Countries?* This study shows that carbon finance could catalyze market penetration of solar home systems for households in developing countries,



although carbon finance constitutes a limited part of the total project investment (typically 5 percent). Findings indicate that the structuring of solar home systems projects remains complex.

- *Market Intelligence.* At this early stage of development of the carbon market, there is still no clear price index, nor any central source of information on effective projects and transactions. In addition, the commercial value of ERs depends to a large extent on international, national, and regional regulations, which evolve rapidly and are not easy to follow. In order to provide up-to-date information about the state, trends, and environment of the carbon market, PCFplus has commissioned two market intelligence studies. One focuses on the status of the carbon market, and the other on its regulatory drivers. Key conclusions from these studies informed Chapter 3 of this report.
- *Baseline for Energy Efficiency Projects addressed through intermediaries.* Small-to-medium size energy efficiency projects represent a major abatement potential in most countries, but they are usually too small to be attractive to carbon investors. It is therefore necessary to find ways of bundling projects together through an intermediary such as an energy service company. Within this configuration however, the baseline problem—that is, how to determine what would have occurred in the absence of the project—becomes more complex. It is necessary to build baselines for each individual (or for each class of) energy efficiency project. But in addition, it is important to understand what the intermediary itself would have done in the absence of carbon finance. An ongoing study is assessing these two baseline levels, with a primary focus on economies in transition.

## **LOOKING AHEAD**

In the coming fiscal year, capacity building initiatives will include the following:

- *Training modules.* PCF is developing training modules covering all aspects of the PCF business, such as pricing and market formation, legal contracts, baselines, the impact of carbon finance, risk considerations, the PCF project cycle, the history and objectives of the PCF, PCF portfolio, and project pipeline. These training modules will be available on-line, including ready-made presentations and video-clips for use by other training specialists. WBI will actively seek to establish formal partnerships for the delivery of training modules concerning the Kyoto Mechanisms.
- A comprehensive training program will be implemented and delivered in conjunction with PCF negotiations and pre-negotiations. Although specifics are not available at this time, it is contemplated that CDM/JI workshops will be held to cover the following countries/ regions: China, Central America, South America, India, South Asia, and Southeast Asia.



**PCFplus research considered whether carbon finance can accelerate the diffusion of solar home systems, which at current prices, remains a challenge.**



- *PCFplus fellowship program.* The PCFplus Fellowship Program will be expanded substantially to cover about 10 PCF host countries.

In fall 2001, three important studies are expected to be concluded: the energy efficiency study noted above; a study on the impact of EU accession on the supply of JI projects; and an assessment of the PCF portfolio of projects with regard to sustainable development. Updates on the regulatory drivers of the carbon market will be posted on the PCF website throughout the coming year.

In addition, several new studies will be launched, including:

- *Baselines and MVPs for new types of projects.* As PCF is fully engaged in its investment phase, PCFplus research will try to build up methodologies for baseline construction, monitoring, and validation for relatively-unexplored types of projects such as bundles of numerous pico-renewables installations and afforestation activities.
- *Standardized baselines.* PCFplus research will seek to consolidate the experience of PCF projects by building up standardized baselines and monitoring plans, in particular on landfill gas capture projects, which have the potential for large returns on investment even at low carbon prices.

As results from studies become available, dissemination should also play a stronger role in PCFplus research activities. In the same spirit, PCFplus research will explore possible collaboration with other research institutions working on similar programs, especially in developing countries and economies in transition.