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Carbon Credits for the Poor

How development agencies can enable inclusive business under the CDM PoA

OUR NEXT ENDEAVOUR

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About

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If you wish to wish to comment on this paper, please write to Christina Gradl (c.gradl@endeva.org)!

We are keen to hear your reactions.

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Executive Summary

The purpose of this paper is to analyse the potential of the Program of Activities (PoA) within the Clean Development Mechanism (CDM) with a special focus on inclusive business opportunities and the role of development agencies in setting them free. It identifies the potential benefit of the PoA for people in poverty, points out barriers that stand in the way, and investigates how development actors can help remove them.

There are significant opportunities for impoverished people in developing countries to benefit from carbon trading under the PoA via inclusive businesses. The PoA allows different CDM project activities to register as one CDM programme. This facilitates the generation of carbon credits from decentralized sources like stoves, refrigerators or small hydro plants. Economies of scale make such PoAs viable commercially. Poor people can benefit directly from such business models as consumers, producers, distributors, or service providers within the CDM mechanism.

Besides general challenges of the PoA, such as the complex administration, three challenges are especially significant for inclusive businesses: a lack of local capacity to implement and monitor PoAs, a lack of methodologies to measure emission reductions in sectors relevant for people in poverty, and high monitoring cost due to decentralized structures.

Developing agencies can help to remove these barriers by (1) Investing into local capacity development, (2) developing new methodologies, (3) lobbying the UNFCCC for differential treatment and (4) co-financing upfront investment.

KEYWORDS:

CDM
carbon market
PoA
inclusive business
sustainable development
development agencies
climate change

Introduction

The Clean Development Mechanism (CDM) was designed to enable developed countries to cut carbon emissions in developing countries, and thereby to induce technology transfer from industrialized to developing countries. From the beginning, people concerned with poverty alleviation also hoped that it could benefit the world's poor by rewarding their contribution to avoiding climate change. New technologies, thus the idea, could improve people's productivity and standard of living while reducing carbon emissions. These technologies could be financed in part through carbon credits sold on the carbon emissions market. Due to the complexity of the process, only a few projects that directly benefit poor people have actually been realized. The Programme of Activities (PoA) was introduced in 2010 to do away with some of the constraints and thereby increase the development effects of the CDM.

> The Programme of Activities (PoA) has been introduced to increase the development effects of the CDM.

Based on the PoA, inclusive business approaches that include people living in poverty in the value chain as producers, consumers or entrepreneurs could increase the direct contribution of the CDM to poverty alleviation. Companies could (a) sell carbon-saving technologies to low-income households, (b) work with producers, such as farmers, to avoid emissions, or (c) create business opportunities for small-scale entrepreneurs. In Brazil, for example, food producer Sadia works with more than 3500 small-scale swine farmers in its value chain to avoid methane emissions from waste. Many of them did not have a formal license previously because they lacked proper waste treatment facilities. Biodigesters transform the waste from pork breeding into biofertilizer, fish feed, and gas for energy production. The programme has been certified as a PoA and revenues from carbon credits are used to pay for the administrative cost and enhance the farmers' incomes.

> PoA could open up inclusive business opportunities that can benefit people living in poverty.

The purpose of this paper was to understand the potential of the PoA for inclusive business and how development agencies could help companies to realize this potential.

The research was guided by three main questions:

1. What opportunities exist for inclusive business (and hence poverty alleviation) based on the PoA?
2. What constraints hinder companies from realizing these opportunities?
3. Who could remove these constraints and how?

These questions also provide the structure for the following discussion. One of the main findings suggested that companies could do fairly little at this stage to improve opportunities and reduce constraints. Therefore, our recommendations in the end focus on development agencies.

To gain insight into these questions, we interviewed nine leading experts in the field of PoA based on a common protocol. Their replies were surprisingly similar, which suggests that their views correspond well with the current situation. We hope that the results can help inspire action, in particular by development agencies, and thereby increase the benefits of poor people from the global carbon market.

Background

The Kyoto protocol regulates global carbon emissions reduction. It was negotiated in 1997 and has been ratified by 192 nations to date. It expires in 2015. So far, no follow-up agreement has been achieved.

The protocol includes the CDM as one mechanism to create maximum flexibility in the reduction of global carbon emission. The CDM allows industrialized nations that have committed themselves to reduce emissions to buy certified emission reduction credits (CER) earned by projects implemented in the developing world. The CDM Executive Board (EB) within the UN Framework Convention on Climate Change (UNFCCC) administers the mechanism. The EB approves methodologies to measure emissions reductions and issues CER. These methodologies report how many tons of CO_2 equivalents (tCO_2e) have actually been reduced by the project and that these reductions would not have happened without the project (the "additionality" requirement). National Designated Organizational Entities (DOE), independent auditors accredited by the EB, must validate the projects. Because the approval and monitoring process is highly complex, specialized project developers typically design projects.

The Kyoto protocol allows industrialized countries to save carbon emissions in developing countries via the CDM.

As of November 2010, 2.463 projects were registered under the CDM, with a total planned reduction of 389.332 $ktCO_2e$. 78% of the registered credits came from 3 countries: China, India and Brazil. Very few projects have been registered in Sub-Sahara Africa or Least Developed Countries (LDCs). 50% of the approved credits come from projects reducing hydrofluorocarbon (HFC), an industrial green house gas, mostly from closing or upgrading plants.[01] Few projects have been able to benefit people living in poverty directly. Clearly, the hopes that the CDM might also make a contribution to poverty alleviation have not yet materialized.

78% of CDM credits have been generated in China, Brazil and India, mostly in large plant-level projects.

01. CDM pipeline (January 2011) CD4CDM (http://www.cd4cdm.org/)

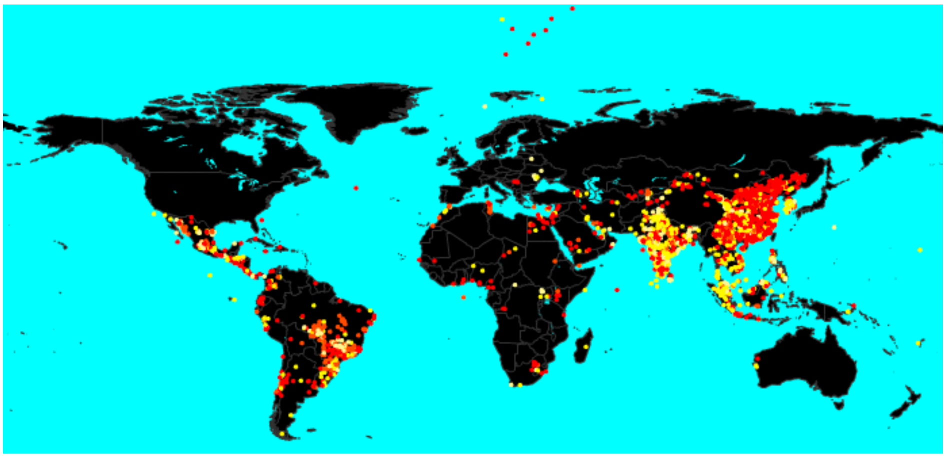

Figure 1: World Map of registered CDM projects
Source: UNFCCC

The PoA was introduced in 2010 as a way to increase the efficiency of the CDM process. Previously, each CDM project activity had to be registered individually by the EB. The process often took two years or longer. The PoA allows a project proponent to register several CDM project activities (CPAs) as one CDM program.

Coordinating Managing Entities (CME) always manage a PoA. Reduced transaction costs make it economical to register much smaller projects. In January 2011, sixty-six PoAs were in the process of validation and 5 had been registered, one each in Brazil, India, Mexico, Uganda, and Honduras. The most common types are efficient cook stoves, light bulb exchanges, and decentralised renewable energy production through mini- and micro hydro power stations, household biogas production, and solar home systems.[02]

02. CDM pipeline (January 2011) CD4CDM (http://www.cd4cdm.org/)

The PoA could open up opportunities for a variety of inclusive business models. Inclusive business is an approach that combines business and human development. By incorporating people living in poverty into their value chains as consumers, producers, or entrepreneurs, companies can strengthen their competitiveness while at the same time opening up opportunities for people living in poverty.[03]

> The PoA could be a way to include poor people into the carbon market as consumers, producers and entrepreneurs.

03. Endeva (2010) Inclusive Business Guide – How to develop business and fight poverty. Berlin: Endeva

Abbrevations:

CDM	Clean Development Mechanism
CER	Certified Emission Reduction Credits
CPA	CDM project activities
CME	Coordinating Managing Entities
DNA	Designated National Authorities
DOE	Designated Organizational Entity
EB	Executive Board of the CDM
LDC	Least Developed Countries
PoA	Programme of Activities under CDM
tCO_2e	tons of CO_2 equivalents
UNFCCC	UN Framework Convention on Climate Change

Opportunities

Opportunities for inclusive business exist for households, producers and small-scale businesses. Moreover, the PoA might facilitate projects in countries that have not benefited much from the CDM. It may also open up new sectors to the CDM, including some in which the poor are active as producers. As Felicity Creighton Spors, a consultant to the World Bank, said: "In theory, the PoA is the most exciting tool on the table for low income people." Marc Marr, Head of Business Unit CDM/JI Management at Perspectives, pointed out: "PoAs are especially important for Least Developed countries (LDCs). Many internationals players like the World Bank want to invest here."

Opportunities for households

Inclusive business models can provide low-cost and environmentally friendly products to low-income households. The revenues from selling the CER of a PoA can serve to lower the cost of such products. Products with great potential include household- or village-level energy production from wind, solar energy, biogas or water as well as improved energy-efficient products, like cook stoves, light bulbs, or solar lanterns. With increased production, these products will become even cheaper and more accessible to low-income households. Households can improve their productivity and standard of living and reduce costs.

Households could benefit from access to electricity and improved products.

CUIDEMOS in Mexico was the first project registered under the PoA. Under the programme, 30 million energy-saving light bulbs are to be distributed for free to households in Mexico. Households benefit from a free, long-lasting light bulb that also reduces electricity bills. The program will reduce 7.5 million tCO_2.[04]

04. UNFCCC (2009) PoA 2535: CUIDEMOS Mexico (Campana De Uso Intelegente De Energia Mexico) – Smart use of energy in Mexico

Some critics claim that the CER from each product should be delivered to low-income households more directly, and not just via a price mechanism. For the companies, the CER are an additional revenue stream, and it is not fully transparent how these revenues are used. However, at present, administrating a system that attributes credits to users directly would be extremely burdensome.

Opportunities for producers

The example of Sadia presented in the introduction shows that the PoA can also open up opportunities for small-scale producers. The 3.500 small-scale swine producers in Sadia's value chain benefit from increased revenues as well as cost savings from producing their own energy, fertilizer and feed from waste. In addition, they enjoy better working conditions since the biodigesters reduce the smell and unhealthy fumes of swine waste.

Small-scale Farmers can save emissions or enhance sequestration capacity.

Agriculture is responsible for a large part of carbon emissions, especially through methane emissions from rotting organic matter and deforestation. At the same time, a lot can be done in agriculture to increase global carbon sequestration capacity through afforestation, since trees absorb CO_2. Small-scale producers can contribute on both sides. 75% of the world's poorest people live in rural areas and depend on agriculture.[05] What is missing to date are methodologies to unlock the potential of the agriculture and forestry sectors.

05. World Bank (2007) Word Development Report 2008: Agriculture for Development

Opportunities for small-scale business

Opportunities for small-scale businesses could also arise from the PoA process directly. They could, for example, provide monitoring or technology maintenance services. At the moment, these tasks are usually taken on by NGOs or public entities. With adequate training, local small-scale businesses should be able to perform these services on a for-profit basis, in particular since they have the necessary local expertise and access to the local households.

Small-scale businesses could benefit from the possibility to sell new products to low-income households or from offering services in the PoA process.

Opportunities within new countries

Until today, CDM projects were mainly implemented in China, India, Brazil and Mexico. Least Developed Countries (LDCs), especially those in Sub-Sahara Africa, have been largely excluded. “These countries lack large production sites, which have been the central target of CDM projects in the past. Yet, they have a large amount of individual households who could benefit from PoA projects,” as Daniel Farchy, a representative from C-Quest Capital, pointed out. However, only 7 of the 71 PoAs in the CDM pipeline in January 2011 were in LDCs. 10% signify a substantial improvement compared to the 1% of registered projects and 1.6% of projects under validation in the conventional CDM, but the figure is still low. One explanation might be the lack of technical and administrative infrastructure for CDM projects in LDCs.

PoA could benefit LDCs, if local capacities were available.

PoAs can, in principle, be transnational. This might open up opportunities for those countries with little to no CDM experience. A PoA can take place in countries with CDM experience like Brazil, China or India and, at the same time, in less experienced LDCs under the same methodology and Coordinating Managing Entities.

Opportunities within new sectors

Finally, the PoA might open up opportunities in new sectors to engage in the CDM. Francois Beaurain from South Pole Carbon Asset Management highlighted that “PoA is an opportunity for decentralized energy like renewable and small hydro”. Agriculture, construction, and transportation are all sectors that have so far gone unaddressed by the CDM, even though they make up a major part of carbon emissions in developing countries. Since carbon emissions are produced in a decentralized manner in these sectors, new methodologies under the PoA could unlock their potential to reduce emissions.

PoA might open up opportunities in new sectors like agriculture, construction and transportation.

In summary, the PoA offers opportunities for inclusive business by serving low-income households, incorporating local small-scale producers and businesses, and opening up the carbon market to new sectors and countries. Yet, a number of unsolved challenges limit the realization of these opportunities.

Challenges

Even though the process is still new, experts have identified a number of challenges that limit the current potential of the PoA to benefit low-income people. These include general challenges of the CDM process, but also several challenges that are specific to the low-income target group. Marc André Marr of Perspectives summarized: “PoA opens up opportunities to involve new countries in the CDM, but the challenges are significant.”

General challenges of the PoA

Even though the PoA was an attempt to lower the administrative burden of the CDM mechanism, these burdens remain enormous. As Neera van der Geest from the Fair Climate Fund put it, “PoA is not as simple as it should be”. All experts worried about the high amount of paper work needed to register a PoA. Even though practitioners report an improvement compared to the regular CDM, the complex validation and registration system still leads to long development cycles of at least two years. In addition, changing rules and ad hoc decisions of the EB lead to instability in the validation process, which means a significant risk for an investment. Apparently, the EB is concerned in particular about ensuring the “additionality” of PoA projects.

> Even if improved compared to the CDM process, the PoA process has many administrative burdens.

These administrative burdens mean large upfront investments until a PoA can be registered – even higher than for a standard CDM project. PoA expert Ole Meier-Hahn noted: “The high upfront costs run counter to the logic of decentralized PoAs like those that could reach out to poor populations: they work via scale, which is only reached over time.” It also excludes less potent actors from engaging in PoA programs, even though the business case might be solid.

In terms of liability, the bar has been set even higher for PoAs. Unlike with conventional CDM projects, DOEs are liable for mistakes in the validation and verification of a PoA even if these are due to later changes in CDM rules. “With frequent changes in the interpretation of the rules surrounding CDM and PoA, the risk for DOEs becomes difficult to manage,” according to Felicity Creighton Spors. In case of a mistake, the DOE must return all approved credits.

Lack of appropriate methodologies

As mentioned before, methodologies for emissions reduction in sectors like agriculture, construction and transportation, where the poor have the heaviest carbon footprint, have not been developed yet. Developing methodologies is expensive, and without them, registration is not possible. Consequently, much of the potential for PoA-based inclusive business remains untapped.

> Methodologies for many relevant areas do not exist yet.

Lack of local capacity

Implementing a PoA requires numerous administrative steps and expert knowledge on the emission trading system. The capacity to implement a PoA is limited at all levels in developing countries and particularly in LDCs. On the national

> In LDCs, there is a lack of CDM capacity on all levels.

level, the DNA is often not familiar with PoA and its implementation. Moreover, competent CMEs are also missing. On the local level the lack of technical capacity poses a major challenge. Local agents repeatedly do not know how to install and run new technologies. Furthermore, local capacity to monitor PoA projects is limited.

The case of Uganda shows that these capacities can be developed locally. Felicity Creighton Spors said: "Uganda has a great CME example, which is locally run and builds on local ideas." The CME has developed the first registered PoA in Africa. The programme promotes solid waste composting in urban areas in an environmentally friendly manner. It helps Ugandan municipalities set up waste composting facilities that are financially sustainable because of the revenues generated from the sale of the compost and the carbon credits. The nine initial projects are using carbon finance to generate resources for social and community activities while also trapping the equivalent of an estimated 750,000 tCO_2e over the next 10 years.[06]

06. The World Bank (2010) Uganda shows way on scaling up carbon mitigation (press release, July 26, 2010)

High monitoring costs

In a standard CDM project, the emissions of just one factory have to be controlled. In contrast, in a PoA with small-scale projects, it might be the emissions of 1 million cook stoves. Moreover, the use of household appliances can often not be controlled in a meaningful way. It is hard to control whether the stove or the light bulb is actually used. New products might be used more than previous ones, but might also only partially replace others. Therefore, monitoring is extremely complex and costly. Because of these challenges, the EB is concerned with reporting from the DOEs and seems to apply an even higher standard to PoAs than to other CDM projects.

> Monitoring costs of the decentralised PoA approach are disproportionately high.

Building inclusive business under the PoA is hampered by the general high administrative burdens of the CDM plus additional challenges from the lack of methodologies, the lack local capacity and high monitoring costs of decentralised projects.

Solutions

Solutions to the above mentioned challenges have already been identified.

Reducing administrative costs

The registration process can be further simplified. Benchmark values for both baselines and emission savings could reduce the effort needed to validate a PoA. Clear rules regarding materiality – what is essential to know about a project, especially with regard to additionality – could simplify not only the validation and verification but also the replication of projects. DOEs should only be liable for mistakes made at the time of validation, not for inconsistencies due to later changes in the rules.

> The registration process should be further simplified. Projects with additional benefits should be preferred.

Different processes could apply for CDM projects that create additional benefits. The "Gold Standard" of the CDM already recognizes projects that create benefits for the environment and poor people, and Gold Standard CER are sold for a higher price. However, this does not solve the problem of high upfront costs. The simplified rules suggested above could apply to sustainable CDM projects only. After all, as Sam Shiroff of BSH noted, "the downside of selling efficient cook stoves to poor people is nearly non-existent, even if not every cook stove is used." Higher standards can apply to projects that "just" reduce emissions, for example when a factory is closed in China.

Developing appropriate methodologies

The development of methodologies for PoA projects is effectively a public good, because other projects can register under and build upon this methodology. There is hence a case for public investment into the development of appropriate methodologies in key sectors such as agriculture, construction or transportation. Universities and other public players could build the foundations for project development under the PoA.

> Public investment in PoA methodologies is warranted.

Building local capacity

Development agencies have already done a fair amount of work on building CDM capacity in LDCs. While recognizing the progress that has been made, there is still work to be done, especially at the local level. An idea to support local actors is to design and advance business models that are easy to implement, for example monitoring services that can be provided by local firms. Best practice examples could be copied by other businesses, so that the model would proliferate. Building on existing social networks of local NGOs and grassroots organizations could also strengthen local capacities. Thus, not only the capacities but also local ownership could be improved.

> Lack of capacity could partly be overcome by designing business models that are easy to implement locally.

Reducing monitoring costs

Default values that assume a minimum amount of carbon emissions savings per product sold (e.g. 20% of the amount saved by each cook stove if used) can reduce the cost of a PoA. Default values would not only reduce upfront and monitoring costs and risks. They would also allow to sell CER earlier in the project, for example when the product is sold.

Automatic monitoring devices could also help. GPS and other technologies are already used in pilot projects to facilitate and simplify monitoring. The Fair Climate Fund, for example, is developing a device that would measure the amount of methane reduced and transmit the information via wireless technology to a central monitoring hub.

Building local capacity via grassroots organisations and local small-scale businesses could also reduce costs significantly. Simplifying the technical requirements could facilitate outsourcing these services.

Development agencies could play an important role in realizing these solutions.

Introducing default values, the use of modern technologies and involving grassroots organizations and local small-scale businesses could reduce the high monitoring cost.

Recommendations for development agencies

Development agencies can help to unleash the power of the PoA as a tool for inclusive business and poverty alleviation. Four main areas of activity emerged: (1) lobbying for differential treatment, (2) developing new methodologies for replication, (3) investing in capacity development and (4) co-financing upfront investment.

(1) Lobby the UNFCCC for differential treatment

The UNFCCC has not yet promoted the PoA sufficiently, especially not to the DOEs. High risks and upfront costs persist. Standards for validation and verification are even higher than under the regular CDM. Donors are called to lobby the UNFCCC to promote the PoA and simplify processes for CDM projects that create additional benefits for the environment and poverty alleviation.

Development agencies are called to lobby the UNFCCC to promote the PoA and simplify processes around PoA projects.

(2) Develop new methodologies for replication

New methodologies could open up large potential markets for PoA-based inclusive businesses, especially in the agriculture, transportation, and construction sectors. Development agencies have always supported the development of CDM methodologies and are now among the main drivers of PoA development. This should continue, with a focus on developing methodologies that can also be implemented with limited local capacities.

Especially in the domains of agriculture, transportation as well as construction and housing new methodologies should be developed.

Development agencies can also promote the replication of methodologies. Copying best practice PoA projects should be done more frequently, since it saves costs and is less risky than developing new methodologies. The potential of transnational PoAs has also yet to be realized.

(3) Invest in capacity development at the national level

Development agencies should strengthen South-South exchange for government entities. Big players such as Brazil, India, Mexico or China have extensive experience in CDM processes, enacting the necessary legislation, and establishing DNAs. This knowledge should be transferred to less developed countries so that these countries could embark on a similar success track.

Strong and capable CMEs are the basis of successful PoA projects. These CMEs can be even more effective if they can build on a network of local service providers. Development agencies could, for example, support the creation of simple business models for micro- and small entrepreneurs related to PoAs, such as the distribution and monitoring of devices and services. They should also continue to build the capacities of NGOs as partners and facilitate South-South knowledge exchange, like in the case of the CME in Uganda.

> Capacities at the national level could be built through South-South exchange and by supporting the establishment of national CMEs

(4) Co-finance upfront investment

Development agencies could co-fund upfront investment with either risk capital or debt at preferential rates. At the moment, high upfront investment as well as significant uncertainties hinder the development of PoAs. Development agencies could break down this barrier by providing additional funds. This could be achieved under existing programmes, such as the Carbon Finance Unit at the World Bank, with funding that is targeted specifically at PoAs.

> Development agencies could co-fund upfront investment.

The PoA bears great potential. It can help to achieve the intention of the CDM to contribute to poverty alleviation and economic development. Development agencies should continue their support for the PoA and thus help to catalise inclusive carbon businesses, so that carbon credits may finally reach the poor.

Further Readings:

Articles

- UNEP CD4CDM (2010) A Primer on the Programme of Activities, http://www.cd4cdm.org/Publications/PrimerCMDPoA.pdf (14.1.2011)
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Websites

- UNFCCC, CDM Section (http://cdm.unfccc.int/)
- CD4CDM – CDM Pipeline (http://www.cd4cdm.org/)

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