

Integration of climate and development policies through the Clean Development Mechanism

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Abstract: The paper discusses how the Clean Development Mechanism (CDM) of the Kyoto Protocol could be designed to achieve an integration of climate and development policy. Developing countries face the dilemma that they do not want their growth prospects burdened by accepting greenhouse gas emission targets while there is a high degree of probability that they will suffer most strongly from climate change. If industrialised countries go ahead to demonstrate that wealth can be achieved and maintained while decreasing greenhouse gas emissions “technological leapfrogging” becomes a credible option and developing countries will no longer reject mechanisms such as the CDM that allow industrial countries to get credits to reach part of their targets through investment in emission reduction abroad. The CDM would provide an opportunity to lead the developing countries on a path of climatically acceptable economic growth from the start. We want to explore the framework for a CDM that manages to be efficient while not neglecting the development needs.

The paper first discusses issues that are critical for the functioning of the CDM in general. Design options of the CDM range from a multilateral fund over a clearinghouse or project exchange to a purely bilateral contract. A competition of all types of institutional structures on the basis of minimum rules set by the CDM Executive Board seems to be the best solution. Another point that is crucial for the success of the CDM is the determination of the baseline which is needed to calculate the emission reduction. The paper discusses different approaches ranging from a macro to a micro scale. It becomes obvious that the methods preferred by actors in industrialised countries often do not take into account institutional realities in developing countries.

Developing countries will be carefully scrutinising proposals for sharing of the credits achieved by the CDM projects. An extremely important issue and the cornerstone for a successful integration of climate and development policy is the role of positive impacts of CDM projects such as capital transfer, capacity building, job creation and reduction of local pollutants. They are the only incentive for developing countries to engage in CDM unless they receive a part of the credits and are able to sell them. Linking the amount of crediting to the scale of positive impacts would create a big incentive not to neglect the latter in search for the cheapest abatement options. Thus it would be possible to avoid the “cream skimming” feared by many developing countries.

1. Introduction

Anthropogenic climate change due to emission of greenhouse gases will be one of the major environmental problems of the 21st century due to several factors:

- a) Climate change will have impacts on human health, terrestrial and aquatic ecological systems, and socio-economic systems (e.g., agriculture, forestry, fisheries, and water resources). Different countries and segments of society can expect to confront a variety of highly non-linear changes and the need to adapt to them;
- b) To make things worse, the effects of climate change seem to be unequally distributed. While northern regions could eventually benefit from global warming by the expansion of arable lands and a decreased need for heating, tropical zones will suffer most from droughts and expansion of epidemics. Higher sea levels due to the polar melting process will affect most low-lying developing countries like Bangladesh and small island states.
- c) It is very difficult to distinguish anthropogeneous climate change from natural variability. However, the Intergovernmental Panel on Climate Change (IPCC), an international body of experts from all fields of science, stated clearly that "a discernible human influence on climate" can no longer be denied (IPCC, 1996);
- d) There are huge time lags between emissions of greenhouse gases and the associated impacts due to natural buffer processes;
- e) Greenhouse gases are no local environmental pollutants and thus there is no domestic incentive to reduce their emissions. They mix globally and thus can only be tackled on a global scale;
- f) Greenhouse gas emissions arise in all sectors of an economy, which means that an efficient climate policy has to be cross-sectoral.

Despite these challenges, the international community has embarked on the development of climate policy with an unprecedented speed. When, in 1985, a major scientific workshop was held in Villach, Austria, the US government participants went without instructions (Bodansky, 1994, 45)! In 1988, governments established the IPCC to provide scientific and policy assessment. In the same year the Toronto conference recommended a 20% reduction in *global* CO₂ emissions by 2005 and urged the negotiation of a comprehensive global convention. Policy action was spurred by the publication of the First Assessment Report of the state of climate change science by the IPCC in late 1990. After difficult negotiations, a Framework Convention on Climate Change (FCCC) could be signed at the UN Conference for Environment and Development in Rio de Janeiro 1992. It remained rather general, though, and did not include specific emission targets or binding instruments of climate policy. The FCCC entered into force in 1994 and the first Conference of the Parties (COP) in Berlin 1995 decided to embark on negotiations of a Protocol with binding targets. The negotiations were crowned with success when in 1997 the 3rd COP in Kyoto achieved the negotiations of the

Protocol, now called the “Kyoto Protocol”. It sets differentiated, legally binding targets for the industrialised countries and countries in transition. The targets apply to a basket of six greenhouse gases and have to be reached by the period 2008-2012. A number of so-called “flexibility mechanisms” allows countries with targets either to buy emission permits from other countries or to invest in emission reduction abroad and credit the achieved emission reduction towards their own domestic target.

2. The role of developing countries in climate policy

The vulnerability of human health and socio-economic systems - and, to a lesser extent, ecological systems - to climate change impacts depends upon economic circumstances and institutional infrastructure. This implies that systems typically are more vulnerable in developing countries where economic and institutional circumstances are less favourable. Moreover, the effects of climate change will be exacerbated in the South through an increasing population density in sensitive areas such as river basins and coastal plains.

From the beginning of negotiations on climate policy, the issue had a clear North-South implication. At the Noordwijk Conference in 1989 the representatives from developing countries implicitly accepted emission and sequestration targets as well as the use of existing financial institutions to channel transfers (Bodansky, 1994, 56). Afterwards, these countries very soon came to the conclusion that much was at stake. They pressed for stronger representation in the negotiations and almost blocked the adoption of the IPCC First Assessment Report. Their growing influence can easily be traced in the title of the Rio Conference which was not just an “environment event” but stressed the development component.

Throughout the climate negotiations, developing countries tried to present their viewpoints under the umbrella of the “G 77 and China” group formed during earlier U.N. negotiations. It emphasised that the industrial countries are responsible for the past greenhouse gas accumulation and also the bulk of the current emissions and thus would have to reduce emissions and finance adaptation measures in developing countries. Nevertheless, the complexity of climate policy led to the rise of sub-groups with highly varying interests:

- a) The group of small island states (AOSIS). It officially only formed in 1994 but was active from the beginning of the Rio negotiations due to the predictions of high sea-level rises in the climate models. AOSIS has always argued for strong emission targets and immediate action as well as funding for adaptation measures. The island states played a major role during the preparation of the Rio Conference but have lost importance since.
- b) The group of oil-exporting countries (OPEC). OPEC has always tried to slow the process by citing scientific uncertainty and vetoing procedural issues. It is responsible for the lack of voting rules. Moreover, it asked for compensation in case of loss of export revenues. Nevertheless, it did not block the process fully.

From the outset, the majority of developing countries that did not belong to AOSIS or OPEC saw the climate change issue as a problem of the industrialised countries. It therefore remained rather inactive but welcomed the process as a chance to get additional funds from industrialised countries. In that vein, the Rio Conference defined funding needs for the implementation of Agenda 21 – the umbrella environment and development blueprint for the 21st century – that ran into triple-digit billion \$ figures. Also Art. 4, 3 of the FCCC specifies

that the full costs of the national greenhouse gas inventories of developing countries should be paid by industrialised countries and that funding should be given for technology transfer and the “incremental costs” of emission reduction measures. Many developing countries at that time thus expected that industrialised countries were willing to grant them huge sums without strong controls.

These expectations were to be bitterly disappointed. While ODA continued to fall, the industrialised countries were only willing to grant 1.2 billion \$ for the period 1992-1994 and a further 2 billion for 1994-1998 to finance all activities decided at Rio, i.e. climate policy, biodiversity protection and CFC phase-out. Until mid-1997, less than 38% had been spent for climate policy. The funds were to be administered by the Global Environment Facility (GEF) set up within the World Bank group. Developing countries were very critical towards this fact and managed to change voting rules for GEF decisions. These now require a majority of both industrialised and developing countries. Nothing at all came out of the Agenda 21 funding.

When industrialised countries started to press for clearer definition of the “Joint Implementation” (JI) provision of Art. 4, 2a of the FCCC from 1993 onwards, developing country representatives came out strongly against. Industrial countries wanted JI to be a means to achieve an emission target through investment in emission reduction abroad. This would be economically sensible as costs per unit of emission reduction are much lower in the developing countries due to a lower overall efficiency.

Developing countries opposing JI used the following arguments:

- a) JI would allow industrialised countries to buy their way out of reduction commitments;
- b) By realising low-cost greenhouse gas reduction potentials in developing countries, industrialised countries could avoid cost-intensive investments at home, thus allowing them to maintain their unacceptable lifestyle;
- c) JI could reduce the incentive for structural change in the industrialised countries resulting in a slower rate of emission-reducing innovations;
- d) JI projects could run counter to the developing countries’ development priorities;
- e) JI projects could exhaust the "cheap" reduction options such that when emission targets are established for developing countries at a later date, these targets can only be reached at higher cost.

Nevertheless, over time the developing countries gradually changed from complete rejection to a more open position towards the concept. This process gained extra momentum by individual smaller countries leaving the common position and even key countries like India and Indonesia eventually giving up their original opposition. In spite of the official rejection of the concept through the G 77 at earlier stages some countries such as Costa Rica had already into bilateral negotiations on JI projects and had even started on pilot projects. This contradiction was especially striking in the case of Malaysia, which strongly opposed the concept on the federal level but carried out a JI project on a state level (Singh, 1993). Among the developing countries the Latin American countries were the most favourable to the concept while

opposition was strongest among the African countries and South East Asian NGOs. Many countries argued JI could only refer to countries with quantitative emission targets. As a result the G 77 was no longer able to formulate a common position on the subject at the Berlin COP. Thus, a decision was taken to allow a pilot phase of JI under the name of „Activities Implemented Jointly“ (AIJ) but without crediting towards national targets. Due to this lack of incentives, only around 100 projects have been implemented so far, the majority of which is small-scale. Nevertheless, some valuable insights have been won, especially concerning the need for transparency and capacity building in the host country.

In the negotiations leading up to Kyoto, developing countries stressed that they would not accept emission targets of their own. Only a few of them published their first national communication due in 1997 in order to protest against the insufficient amount of funding. The unchanged amount of GEF replenishment for 1998-2002 (1.99 billion \$) did not reduce tensions. The insistence of the U.S. on “meaningful participation” by developing countries nearly derailed the Kyoto Protocol. A draft article on voluntary target setting by developing countries was deleted due to strong opposition from the G 77. Nevertheless, developing countries accepted the flexibility mechanisms, which is astonishing given their earlier opposition against JI. Now JI between countries with targets is allowed (Art. 6). Even emissions trading is possible in principle (Art. 17) but a more detailed draft article foundered on opposition from China and India. The main surprise was the acceptance of the Clean Development Mechanism (CDM) which allows a JI-type co-operation between countries with targets and countries that do not have targets.

3. The Clean Development Mechanism

How was it possible to achieve consensus on a proposal that seems to be very close to a concept formerly strongly rejected by developing countries? Firstly, negotiators managed to link two ideas that made major stakeholders back the idea:

- a) The Brazilian idea of a “Clean Development Fund” that was to finance adaptation measures through penalties levied on industrialised countries not reaching their targets;
- b) The U.S. demand for JI with developing countries

Secondly, many developing country negotiators had realised that continuing opposition in the JI issue would not bring them more funds. So they wanted now to “cash in” but still had some caveats, especially concerning host country priorities. The outcome was a hybrid that was interpreted differently depending on the observer’s background. For example, Aslam (1999) concludes: “... whereas, AIJ was a “*top down*” mechanism which was designed, conceived and advocated by the North, CDM presents a more ‘*bottom up*’ approach as it has been conceived and presented by the South”. In fact, Article 12 bears the handwriting of both North and South. Its purpose as defined in Article 12,2 of the Protocol is to assist developing countries in achieving sustainable development and at the same time help industrial countries in attaining their self-imposed obligation to limit and reduce the emission of greenhouse gases (GHG). Thus, the CDM is explicitly serving two masters. Due to this, the post-Kyoto debate has been heated and COP 4 in late 1998 only managed to list open questions.

CDM rules in the Kyoto Protocol

Art. 12 of the Kyoto Protocol outlines the CDM. It states in paragraph 3 that investing countries get credit for certified emission reductions from CDM projects provided “benefits” accrue to the host country (Art. 12, 3a). Crediting shall be only allowed until a certain percentage of the emission target is reached (Art. 12, 3b) that remains to be defined. It is unclear whether crediting up to this quota is in full or only partial. Besides countries, companies are allowed to invest and execute projects (Art. 12, 9).

The CDM administrative budget and adaptation costs of “particularly vulnerable” developing countries Parties shall be covered by a tax on the projects. This unusual idea stems from the original Brazilian proposal which was meant to create a penalty fund. It remains open who does certification of emission reduction but verification shall be done by independent bodies (Art. 12, 7). The project criteria remain the same as in the Berlin decision on a pilot phase for Activities Implemented Jointly (Art. 12, 5).

3.1 *Design options for the CDM*

The bilateral option allows countries to negotiate a framework agreement setting criteria and rules for crediting. Projects are negotiated freely between entities of both countries. In the multilateral option investing countries make contributions to an independent fund. Other countries can now offer projects and so compete for the fund's resources. Projects are selected according to their emission reduction efficiency, with positive externalities being taken into account in the case of equally efficient projects. For the duration of the project, each investor country receives a credit proportional to its share of the project portfolio. The leanest option would be a project exchange where any interested party could gather quick, extensive information on all the CDM projects currently available as well as on corresponding financial opportunities for funding the projects (Mintzer 1994, p. 46). All design options have distinct advantages and disadvantages that lead to the recommendation to let them compete. While the multilateral approach might be most suitable to small investor and host countries, the bilateral or exchange approach will be favoured by big countries and investors that want to reduce their transaction cost.

3.2 *Baseline determination*

Emission credits¹ from CDM projects can only be calculated from a reference basis of emissions, the *baseline*. An overall definition of a baseline would be the emissions level if the project had not taken place. By definition, a baseline cannot be observed and thus cannot be proved to be correct. The aim for climate policymakers should thus be to arrive at a consensus on sensible rules for baseline-setting that build upon criteria derived from a set of policy targets. Baselines have to prevent fictitious emissions reductions that would lead to exaggerating the emission budget of industrialised countries. On the other hand, baseline setting shall not reduce efficiency. This means that the sum of transaction costs for project participants and public institutions should be kept as low as possible. It will not be possible to reach both targets perfectly – there is an inevitable trade-off!

A project may have positive and negative indirect influences on emissions elsewhere such as technology spill-over or displacement of activities that cause emissions to another location. The target should be to quantify negative and positive indirect effects on emissions to adjust the baseline accordingly. Baseline revisions allow to reduce uncertainties that grow with the duration of an unrevised baseline. The more frequent the revisions and the lower the lifetimes, the higher are costs and risk for project participants.

There exist a lot of emission reduction opportunities which are profitable either for a company or for a country as a whole. The latter includes externalities such as the reduction of other

¹ This should in any case include „emissions avoidance“, i.e. acceptance of new/greenfield projects (Sokona et al. 1998). Otherwise, it would be completely impossible to reduce the *growth rate* of developing countries' emissions.

pollutants. The question arises whether these so called micro- or macroeconomic “no-regret”-projects are additional or included in the baseline. Despite of the theoretical profitability of many options they are inhibited by differences in risks, regulatory and juridical obstacles, lack of information and skilled personnel as well as organisational rigidities. The target should be to develop a simple additionality test that would be able to distinguish additional projects from non-additional ones.

As the CDM is viewed with suspicion by some stakeholders, it is imperative to have a transparent methodology of baseline development which is accessible and can be used for third-party verification and certification. This will also help to achieve procedural equity. Ex-ante *and* ex-post monitoring on the basis of international standards and independent review by experts including major stakeholders such as NGOs can much reduce the problem of baseline cheating. An operational entity may allocate baselines to project proponents on the basis of agreed standards. A baseline methodology should be practically feasible taking into account institutional capacities of participating countries and private entities. It should be adjustable to changing circumstances and growing experience. Capacity building is a prerequisite for the use of any baseline methodology in the CDM context. It could be aided by developing a baseline-setting software package. Development of aggregated baselines will only be possible if sufficient capacity exists. Capacity building has to be done on different levels:

- Public institutions of host and investor country
- Private project proponents
- Third-party verifiers/certifiers

The latter is crucial as certifiers will have a huge responsibility in evaluating whether the agreed baseline methodology has been adhered to. Therefore, they have to be accredited with the CDM Executive Board and should be subject to spot checks. A mandatory insurance should cover losses due to incorrect certification of faulty baselines. This would be preferable to any seller or buyer beware approach as suggested by Kerr (1998).

There can be different degrees of aggregation for setting of the baseline. Aggregated baseline approaches use different levels of modelling (economic, energy and biomass modelling). The more aggregated baselines become, the higher are the data needs, the (public) up-front cost and the need for sufficient human capacity but also the possibility to quantify net indirect emissions changes through capturing a bigger share of the life-cycle of project components/outputs. Full assessment of indirect effects would need a *global* baseline. More highly aggregated baselines would, however, lead to a lower cost of baseline development for (private) individual project participants. Transaction cost could also be reduced through a standardisation on the project level. The more data and modelling capacity already exist from other fields of economic analysis or environmental impact analysis, the easier and cheaper aggregated approaches can be implemented. While aggregation might lower the potential for cheating by individual project participants, it could lead to cheating in the choice of parameters for modelling. Recognising problems with a highly aggregated baseline, several

proposals have been made to combine some of the advantages of aggregated baselines with a simplified process of baseline-setting. They all use a set of quantitative indicators (benchmarks or emission factors). The main problem of all combined approaches is the choice of these indicators. Here the additionality issue comes in (see Table 1). An alternative would be to standardise parameters for project baseline setting. This would include rules to ensure environmental integrity such as monitoring, baseline revision, and limited crediting life.

Table 1: Effects of the choice of technology/default factors on number of credits

	Coal-fired power station	Project	Emission reduction
Host country average	100	40	60
Host country average of last 5 years	50	40	10
Best technology in host country	45	40	5
Best technology currently commercial	40	40	none
Best available technology	20	40	none

3.3 Credits and credit sharing

A CDM host country will be interested in credits when one or more of the following applies:

- a) It does not have an emissions target now but wants to bank credits for future commitments;
- b) Credits can be traded on a market

Costa Rica has already financed umbrella forestry and energy projects through a fuel tax and tried to sell certified tradable offsets (CTOs). Such a general participation of host countries in creating and trading credits would certainly lower the price of credits and ring alarm bells in many quarters, especially if credits could be traded from 2000 onwards. As host countries have no targets they have an incentive to maximise credit sales. Here the baseline issue becomes crucial: it has to be avoided that there is a reward for developing countries if their policy promotes high emissions. This is due to a perverse effect of the additionality rule: Emission reduction measures are cheapest where there is a lack of a national sustainability policy (Michaelowa/Dutschke 1997, p. 46). The CDM would have to be extremely cautious concerning baseline verification.

Credits could either accrue to the entity involved in the project or the government. The former would be only relevant if credits could be traded freely. The decision on that issue could have important distributional consequences.

Aslam (1998) argues that unequal levels of expertise and awareness between investor and “host” countries could lead to inequitable outcomes of credit sharing. He suggests guidelines

that structure the sharing as standard BOOT (Build Own Operate and Transfer) or “depreciated leasing” contracts. For instance, the value of credits could be shared over time between the two parties, according to a schedule that allocates a growing share to the host. After a certain date credits accrue fully to the host.

4. Linking climate and development policy through the CDM

Developing country analysts like to stress the differences between JI and the CDM, e.g. Aslam (1999): “While the JI focus was on cost-effective solutions for *combating Climate Change*, the CDM focus is primarily procurement of additional resources for *Sustainable Development* in developing countries with Climate Change mitigation taking a secondary value”. This means that the greenhouse gas benefits may be overshadowed by the general development impact of a project. Moreover, the general debate on criteria for successful economic development would be extended to the CDM context.

4.1 Scale of possible financial flows

Haites (1998), Vrolijk (1998), Austin et al. (1998), Victor et al. (1998) and Figueres (1998) have collected estimates of the industrialised countries’ annual demand for emission reductions through flexible mechanisms during the period 2008-2012 that range between 462 and 1350 Mt C. CDM market share is seen between 19 and 57% of the total, ranging from 67 to 723 Mt C. Prices per ton would range from 13 to 42 \$ and annual financial flows from 2.8 to 17.4 billion \$, i.e. 6 to 36 % of current ODA, but only 1 to 7% of current FDI. Who will get these flows? In a CDM *without sinks* China would be the main beneficiary, receiving 57-70% (mean 63.8%), followed by India (7-14%) (Austin et al. 1998). If sinks were included, the picture would be very different – probably Brazil would be the major beneficiary, followed by Indonesia and central African states.

The wide ranges of these estimates and the uncertainties concerning the final design of CDM rules make it clear that it is premature to put numbers on the CDM. They nevertheless show that it might have a major impact on capital flows.

4.2 Maximising positive development impacts of projects

Sustainable development can only be furthered through CDM projects if they have positive impacts besides greenhouse gas reduction. These effects include creation of jobs, training, soil and water conservation, reduction of local pollution and infrastructure development and awareness building. There may also be negative effects of projects such as population displacement or loss of agricultural land. It is probable that many CDM projects will have a mixture of positive and negative impacts. The question how to weight them will be crucial for the success of these projects. An exact quantification is impossible and the situation is different for each project. Because of high transaction costs, it is not advisable to calculate the value of the impacts for each project. Moreover, impacts may be spatially different and affect different groups. Thus, an extremely important issue would be involvement of all stakeholders and transparency of the decision process. Lin et al (1998) stress the importance of conflicts among stakeholders, distribution and stability of property rights, and information exchange in the context of forestry projects in China and Indonesia. Impacts will also depend on the

general economic policy pursued in the host country. Austin et al. (1998) have tried to evaluate impacts for a range of projects in Brazil, China and India but concluded that on the base of available information project impacts could only be classified in 3 steps in 3 categories (environment, development, social).

4.2.1 Host country decision

Host countries have to approve CDM projects anyway. This approval process could be centred on the development impacts of the projects. So the host country would be able to influence project selection according to its development priorities. On the other hand, experiences from development co-operation may dampen the optimism that such a procedure would really lead to an optimal outcome. It needs a lot of human capacity in the government bureaucracy. Certain interest groups in host countries might “capture” the process and try to maximise rents without caring for development. The local population, which will be subject to the impacts of the project, might be sidelined by central government decisions, as e.g., in the case of many decisions to build large hydro projects. Moreover, competition between host countries might lead to a “race to the bottom” that leads to a neglect of development criteria in order to attract investors. The most likely outcome would be that certain host countries manage to secure development benefits from both CDM- and ODA-financed projects whereas other countries fail.

4.2.2 Centralised criteria for project approval

To avoid rent-seeking and ruinous competition, the CDM Executive Board could be charged with the task to develop a list of development criteria that projects have to fulfil if they want to be approved (Hamwey 1998). Such a list could be built on the lists of sustainable development criteria developed by the Commission on Sustainable Development and other organisations, e.g. the OECD. Matsuo (1998) has compiled a draft list of criteria. Centralised approval nevertheless would lead to a huge bureaucracy and an enormous cost of screening every single project.

4.3 *Incentives for capacity building and long-term technology transfer*

The issue who pays capacity and institution-building in the CDM context deserves attention. It has been rightly feared (Srivastava/Soni 1998) that ODA could be diverted to such uses as it has been indeed done in the AIJ context in the U.S. (Michaelowa 1998). Therefore, it might be appropriate to define the “administration” tax broadly, extend it to all mechanisms and use it not only for the pure CDM organisation cost but also for capacity building in the host countries.

The importance of information, training, appropriate capacity and focal institutions for the development of CDM projects is underlined by experience from the AIJ pilot phase (see Table 2 and Aslam 1998). AIJ projects are concentrated in those Latin American and Central

and Eastern European countries that have developed targeted policies, made use of existing capacities to take on and manage AIJ projects and set up focussed institutions and regulation. This has helped them to gain first-hand practical experience while moving them up a steep learning curve. So these host countries created a *conducive enabling environment* which is a necessary, but not sufficient condition to attract investors. Experience from the most successful AIJ host countries shows that it is imperative to have a single unit responsible for the solicitation and approval of projects. It must have full decision autonomy and professional, permanent staff as it is the case in Costa Rica. Thereby, it can avoid a blockade through conflicting interests of different ministries that affected several AIJ projects in Eastern Europe and led to high transaction costs for project developers (Lile et al. 1998).

Table 2: Capacity needs in developing countries

Functions	Desired Outputs
Information Database	Projects portfolio Partners matching data Appropriate Technologies data Data CD-rom
Information Dissemination/Training	Web site development Newsletter Seminars and training manuals
Policy Development Support	Regional networking Consensus building Policy documents
Project Development Support	Project CDM packaging Project documents/updates Standardised methodologies info
Credit Sharing Support	Model contracts Negotiation capacity
Marketing	Web site hosting Road-shows

Source: adapted from Aslam (1999)

Whereas capacity building linked with specific projects can play an effective role it needs to be complemented, and superseded by “programme capacity”, i.e. focussed “host” country CDM programs which can lead to a range of multi-sectoral projects.

Even if capacity building has been successful in the institutional context, this does not assure that CDM proposals are developed by the host country’s private sector. This needs a motivational push through public policies and regulations; an information assessment support system and a pull provided by knowledge-based experts, who seek opportunities to exploit their skills (TERI 1997). This is particularly important if small enterprises or the informal sector are to be reached.

4.4 Achieving long-term innovation

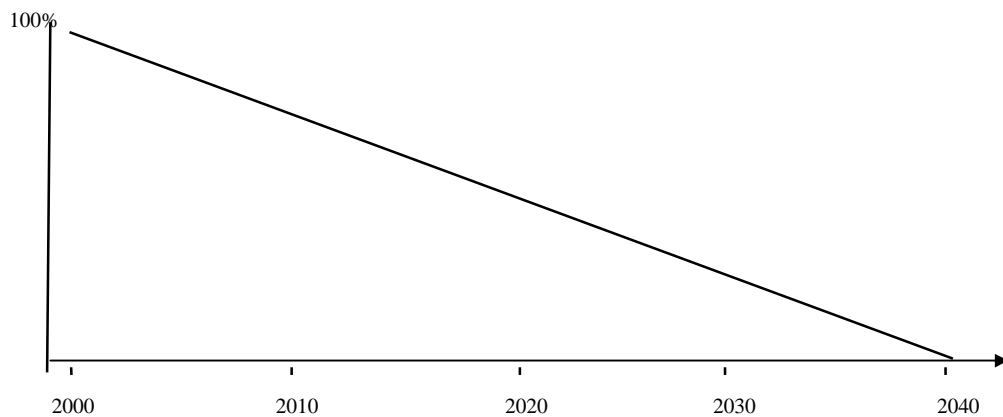
Long-term innovation is a major goal of climate policy. To prevent that short-term cost reduction through cheap CDM potential reduces incentives for innovation, a "strategic" CDM policy could entail a continuous reduction of crediting over time (see Figure 3) while

guaranteeing credits for each project. This would have to be linked with a steady strengthening of domestic climate policy in the industrialised countries.

This policy has the following advantages:

- Investors receive long-term planning data.
- Investors can get full crediting for CDM reduction in the beginning which allows them to invest into long-term emission reduction strategies.
- The incentive to innovate grows steadily as the crediting ratio falls while the domestic instruments are strengthened.

Figure 3: Decreasing crediting ratio



4.5 Adaptation projects

The CDM shall finance adaptation projects in “particularly vulnerable” developing countries. A successful adaptation project that would be conducive to development as adaptation capacity is positively correlated to the overall degree of economic development. Nevertheless, the CDM will not be able to pursue adaptation strategies on a large scale as already seen by Matsuo (1998). If we assume an adaptation tax in the range of 1 to 10% of the project finance flows estimated above, we would raise between 28 million and 1.7 billion \$ per annum for adaptation. Even the higher value would not have a major impact taken the fact that it would have to be distributed among many recipients. For this reason, adaptation projects financed by the CDM should be restricted to capacity building and exclude hardware such as seawalls. The vulnerability of countries could be assessed through the evaluation of the IPCC (Watson et al. 1997).

5. Conclusions

Climate policy could give a boost to the currently flagging development co-operation by channelling new funds into developing countries. The Kyoto Protocol has outlined the vehicle for this co-operation: the Clean Development Mechanism. Nevertheless, crucial details of the rules remain to be defined. Depending on this definition, the CDM could be a major player in both spurring economic development while bending the emissions curve. This requires a transparent process with involvement of all stakeholders and incentives to maximise positive development impacts of projects. It has to help in building human capacity on all levels in the host countries. A differentiated and digressive crediting system could help to achieve this goal and enhance long-term innovation.

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