

# Revamping the Institutional Framework of CDM

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## 1. Introduction

When signed in 1997, the Kyoto Protocol (hereinafter the Protocol) was hailed as a major international achievement towards combating a perceived future global threat: a warming of the globe's climate brought about by anthropogenic emissions of heat-trapping greenhouse gases (hereinafter GHG). One hundred and eighty five countries signed onto the Protocol, with the aim of reducing, by 2012, the GHG emissions from signatory developed countries by 5.2% – relative to the emission levels in 1990. Of the signatory countries, 183 had ratified the agreement by 2008. Although the Protocol was unparalleled in its kind and is still largely considered a break-through in environmental diplomacy, it has a number of inherent weaknesses.

The weaknesses of the Protocol are the result of the complex political negotiations which took place among government representatives during the 1997 Kyoto Conference of Parties, and the emphasis put at the time on finding common ground among all countries. This was essential to establish a single international framework for reducing GHG emissions, and one that related to most of the world's countries. The result was a set of GHG emission reduction targets for signatory developed countries, and a set of flexible mechanisms to allow both developed and developing countries to collaborate towards achieving the targets. In summary, the framework defined under Kyoto was as much the result of political negotiations aimed at attaining broad international acceptance, as it was the result of actual climate science.

In terms of science, in 1995 the Intergovernmental Panel on Climate Change (hereinafter IPCC) had just published its second assessment report that linked anthropogenic activities with climate change. A natural course of action was to attempt a reversal of this cause-effect relation, or put in other terms, to reduce *those* anthropogenic activities that emitted GHG.

Today, with the compliance period defined in the Kyoto Protocol having started in 2008, the con-

### ACRONYMS

CDM	Clean Development Mechanism
CERs	Certified emission reductions
CO <sub>2</sub>	Carbon dioxide
DNA	Designated National Authority
DOE	Designated Operating Entities
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GHG	Greenhouse gases
IPCC	Intergovernmental Panel on Climate Change
JI	Joint implementation
MtCO <sub>2</sub> e	Million tons carbon dioxide equivalent
NGOs	Non-governmental organisations
SD	Sustainable development
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

text surrounding future climate negotiations is different. This change in the negotiation context will come to full swing in 2009 when governments come together at the Copenhagen Conference of Parties to define or reject a post-2012 climate agreement. On one side the science of climate change has become more sophisticated and is more legitimised within the international community. The science offers refined forecasts of the effects of climate change, mitigation strategies to combat the change, and even suggests that tighter carbon dioxide (hereinafter CO<sub>2</sub>) reductions can not fully reverse the Earth's warming (In-class presentation by Professor Moomaw, 2008). On the other side stands a mounting international economic crisis and a reluctance of rising economies (primarily China, India) to take on targets when, at the same time, the United States is reluctant to take on targets without them.

At a minimum the results from the Copenhagen 2009 negotiations should reproduce the two objectives of Kyoto: recognise the input from science and set a framework that puts the mitigation of climate change on the international agenda. However, new objectives should be added to the centre-piece of the post-2012 framework, i.e. the implementation of technology and the empowerment of individuals (rather than companies and governments). The incentivization of renewable technologies and the improvement of the energy intensity ratio of everyone's consumption can be within the core of this post-2012 strategy (Gallagher et al, 2006).

In this paper, rather than proposing to create a new international instrument to address these objectives separately from preceding ones, we propose to build upon the structures existing within the Kyoto Protocol. With this aim, we analyse the possible expansion of the scope of the Clean Development Mechanism (or CDM, one of the flexible mechanisms established under Kyoto) to micro-level renewable projects.

We think that this proposal to empower the use of new technologies among new stakeholders in the climate-related markets might find grounds for a broad consensus among the negotiating parties in Copenhagen. First, its core aim is to promote technology and economic development among individuals rather than reducing GHG emissions per se. Indeed it attempts to direct international action to a more efficient use of energy without compromising economic development or imposing financial burdens on emitters. Secondly, because the CDM already has large international support and already incorporates aspects of sustainable development (hereinafter SD), it could find support both from developed and developing countries. Hence, this proposal which takes the aim of achieving SD one step forward, could find agreement between the negotiating parties for the post-2012 commitment period for GHG emission reductions.

## 2. The existing framework: the Kyoto Protocol and the CDM

### 2.1 *Developed versus developing countries*

The Kyoto Protocol set up the first international framework for addressing climate change. It brought to the attention of politicians worldwide the increasing concern among the scientific community about climate change, and it provided the right incentives to finance the scientific research that would legitimise the action that was estimated to be needed. Thus, the scientific community has been a pivotal instrument in negotiations, and one of the core drivers for the resulting proposed actions. The

IPCC has come out with four assessment reports in which it addresses different aspects of the climate change debate: from defining the existence of anthropogenic climate change to assessing the mitigation and adaptation potential and the associated costs of action. As a result, the climate change science is now well grounded and largely accepted at the international level.

The negotiations that brought about the Kyoto Protocol were not without their twists and turns. A key reason was that the scientific knowledge was not as comprehensive as it is now. This provided developed and developing countries with leveraging power to adapt the science to their political advantages. The United States, for example, argued that more scientific clarity was needed before taking on costly emission targets. Developing countries however argued that deferring or avoiding action by industrialised nations (whose anthropogenic emissions brought about climate change) could hinder their population's long-term livelihood and economic development. As a result of this polarisation, the scope and strength of the commitments reached under the Protocol was compromised. Although the United States signed the agreement, its future rejection to ratify it, along with Canada's negation of its acceptance and Australia's only recent ratification of the treaty all show that growing scientific knowledge and strong support from many are not enough to make climate-specific agreements strong and global. Governments and the populations they represent might agree more easily to treaties whose objectives are not specific to climate, but which encourage their population's economic development and reduced energy consumption (and, hence, emissions).

### 2.2 *Sub-optimal results*

The polarisation of the negotiations leading to the Protocol meant fewer commitments were reached, and commitments were in cases watered down to find broad agreement. This is the case, for example with the defining of the baseline year of reductions and the duration of the commitment period. For example, the definition of the baseline year of reductions ended up with Russia taking on a 0% reduction commitment relative to 1990 without really reducing its emissions or trading of "hot air."<sup>i</sup>

At the implementation level, the short period of commitment raised concerns among participants in Kyoto-based markets, particularly among CDM and Joint Implementation (hereinafter JI) project developers and lenders, about the continuity of financial returns for their prospective investments after 2012. Without such certainty, the only option available to investors is to model their possible financial returns under the possible post-2012 scenarios, and make the best decisions given the available information (and for lenders the best decisions are often the least exposed ones, i.e., not backing CDM projects with uncertain revenue streams). This lack of vision represents an economic burden for the stakeholders, and distorts the flexible mechanisms' intended efficiency as it nurtures the problem of long-term market uncertainty.

The reduction targets and the flexible mechanisms that were framed in the Protocol influenced the dynamics of the climate world. The carbon markets that came together for the trading of credits generated from CDM and JI projects are very active and the number of transactions continues to grow. The trading of credits from CDM and JI projects increased from 1,745 MtCO<sub>2</sub>e in 2006 to 2,983 MtCO<sub>2</sub>e in 2007. The total value of the operations in the market grew from \$31,235 million to \$65,035 million in the same period (World Bank, 2008).

This implies a real shortcoming of the CDM process that makes small projects doubly hard to implement. Stakeholders in the planning of a CDM project include the Executive Board of the United Nations Framework Convention on Climate Change (or UNFCCC), the Designated National Authorities (DNA) for project approval and registration, project developers, project lenders, independent financial and management consultancies, and independent Designated Operating Entities (DOE) for emission verifications. The process involves a series of steps for project accreditation, verification, approval, registration and credit issuance. Despite the complex process to register a CDM project the CDM pipeline has 4,200 projects. The Board has already approved the registration of 1,243 of these, and at least 133 have registrations pending.<sup>ii</sup> In 2006, transactions of project based CDM accounted for 562 MtCO<sub>2</sub>e and increased to 791 MtCO<sub>2</sub>e in 2007, representing a monetary value of \$12,877 million (World Bank, 2008).

These complex and lengthy procedures, however, forced the scope of the Protocol's flexible mechanisms to capture only projects that were (a) large enough to engender enough reductions of GHG emissions to see large profits in credit sales, and therefore balance out the expenditures of the registration process; and (b) projects with easily quantifiable and verifiable emission reductions so as to assure project approval.

Hence, reductions achieved at a small scale or at an individual level were left out. Such micro-scale emission reductions, although potentially large when grouped together, were as stand-alone "projects," not profitable enough to outweigh the necessities of the project-by-project mechanism. The lack of a full bottom-up approach in the Protocol left it to governments to develop (in isolation) policies to incentivize individual action to lower emissions. Without international consensus, these policies, for example to promote energy efficiency improvements, were not at the forefront of policy makers' minds and as such now range from adequate to inexistent. Thus the Kyoto Protocol failed to account for the potential of individual micro-level CO<sub>2</sub> reductions. Yet incentives to bundled-together clusters of micro-level reduction efforts will likely have a significant impact on the reduction commitments (The World Bank, 2007). The upcoming negotiations in Copenhagen provide a good opportunity to address this failure. Hence our discussion centres on our proposal that the CDM be fine-tuned towards a bigger scope of responsibility. This proposition is likely to be well received at the negotiation table, as developing countries will see in its content an invitation to improve their economic development and to increase their population's welfare.

### 2.3 The CDM

The negotiation of the flexible mechanisms of the Protocol required intense dialogue between the negotiating parties. Hence, the political differences between developed and developing countries are reflected in the CDM's double aim to achieve SD in developing countries and cost effective reduction of greenhouse gases (Holm Olsen and Jorgen Fenhann, 2008).

The original design for the CDM came from a proposal for a development fund. China and Brazil concurred in the negotiations leading towards the Protocol that a fund could be created from financial penalties imposed on Annex I countries that fell short of their compliance targets. The fund would then provide developing countries with financial resources to mitigate climate change (UNFCCC, 2000). Developed countries were however disinclined to the concept of a "clean development fund."

The conceptual framework of the CDM as it stands today was born through an informal working group under Brazil's leadership. The group worked behind close doors and finally reported to the conference delegates. The working group proposed a development mechanism. Conceptually, to insert SD in the financial mechanism was innovative. Nonetheless, the working group relied heavily in the proposal of the JI for the operational and procedural particulars of the CDM.<sup>iii</sup>

In practice, the implementation of the CDM has put in evidence the deficiencies of the mechanism to achieve SD and to ease the process of accountability for emission reductions. The concerns with the procedural structure of the mechanism are centred on the heavy economic and administrative burden that it imposes on the project developers and on the CDM Executive Board, who have to prove and verify, respectively, the "additionally" of the reductions. Indeed the volume of credits issued for a CDM project are to be equal to the additional emission reductions made possible by the revenue from the credits' sale, compared to the project without this additional revenue stream. (A frequent example is a new wind farm coming online instead of a typically more economic coal plant, owing to the additional cash inflow found from certified emission reductions (herein after CERs) sales). This formality, called "additionality," has proven to be a major thorn. As a result, the procedure to register projects under the CDM is slow, expensive, and unreliable.

Other concerns with CDM, more substantial in nature, relate to the extent of its contribution towards SD and its equitable distribution of economic, social, and environmental benefits (Axel Michaelowa, 2005 and Karen Holm Olsen and Jorgen Fenhann, 2008). Indeed, recent publications agree that [if] left to market forces, the CDM does not significantly contribute to SD (Olsen, 2007 as referenced in Karen Holm Olsen 2008).

The heart of these deficiencies is a loophole that can be traced to the negotiations leading to the Protocol. As noted earlier, the ad hoc working group headed by Brazil innovated and re-crafted its clean development fund into the CDM so that the principle of SD be entrenched within the financial mechanism. However, they borrowed the procedures to implement it from the proposal of the JI mechanism, which doesn't have SD at its core.

Additionally, the CDM was designed to articulate the trading of CERs between Annex I and Non-Annex I countries. This is theoretically inaccurate. Economically, SD is understood as non declining per capita utility for infinity (Neumayer, 2003); however, per capita utility does not decline with time. Therefore, the core objective of CDM can not be achieved by focusing on "reductions," even when specified to "reductions" in GHG emissions.

Karen Holm Olsen and Jorgen Fenhann (2008) conducted a study of the SD criteria of 744 Project Designed Documents (documents required for CDM registration and which outline the proposed projects, their benefits to climate change mitigation, and their additionality) and the contribution of the projects to de facto SD. Their findings challenged the underlying assumption that the current CDM framework contributes significantly to SD. The study suggests that small-scale projects on average ... deliver a slightly higher number of SD benefits with a higher socio-economic profile than large-scale projects (Holm Olsen and Jorgen Fenhann, 2008). This highlights the opportunity that lies in fine-tuning the CDM so that it recognizes small-scale bottom-up initiatives in renewable energy and energy intensity improvement, with such initiatives bundled together into larger-scale sets.

We now turn to developing the rationale behind our support for the CDM's expansion to small-scale renewable energy and energy efficiency improvements. We then follow with a presentation of the framework of our proposal.

### 3. An area of opportunity

#### 3.1 Why renewable energy and improvements in energy efficiency

The text of Article 2.1 of the Protocol linked investment in renewable energy and energy efficiency improvements with the commitments to reduce GHG emissions and to SD. The article however, emphasized efforts to change the sectoral composition of the economy, leaving reductions from small-scale projects out of the Kyoto-based emissions offset market:

Article 2.1[of the Protocol]... Each Party included in Annex I, in achieving its quantified emission limitation and reduction commitments under Article 3, in order to promote SD, shall: (a) Implement ...policies and measures in accordance with its national circumstances, such as: (i) Enhancement of energy efficiency in relevant sectors of the national economy... (iv) Research on, and promotion, development and increased use of, new and renewable forms of energy...and of advanced and innovative environmentally sound technologies... (vii) Measures to limit and/or reduce emissions of greenhouse gases... in the transport sector.<sup>iv</sup>

Consequently, small-scale project development was undermined in the text of the Protocol and thus, in its implementation. This failure is substantial, as the main advantage of including small-scale projects in the emissions offset market is that smaller projects have higher contributions towards SD (Karen Holm Olsen and Jorgen Fenhann, 2008). These contributions include economic development, energy security and the democratisation of energy at the individual and local levels (Gallagher et al, 2006). This is not frequently achieved by larger projects aimed at GHG emission reductions.

#### 3.2 A bottom-up approach to energy security

At a macro economic level, investing in large scale, renewable energy projects makes sense to avoid CO<sub>2</sub> emissions and to reduce countries' dependencies on oil and gas to generate electricity (Karen Holm Olsen and Jorgen Fenhann, 2008). A clear example is Europe's substantial investments in renewable energy in order to reduce its reliance on Russian natural gas, and hence increase the security of its fuel supply. However, the investments in renewable energy have been hindered by the high costs of installing renewable energy capacity in relation to the costs of building conventional coal- or gas-fired power plants. The following tables provide cost estimates for various alternative mitigation technologies in the power sector compared to a baseline of coal-fired power stations, and display potential reductions in carbon emissions for Annex I and non-Annex I countries:

Table 1: Cost estimates of alternative mitigation technologies in the power generation sector compared to baseline coal-fired power stations and potential reductions in carbon emissions to 2010 and 2020 for Annex I Countries

Technology	PF+ fgd, NOx, etc.	IGCC and super-critical	CCGT	PF + fgd + CO <sub>2</sub> capture	CCGT + CO <sub>2</sub> capture	Nuclear	Hydro	Wind turbines	Biomass	PV and solar thermal
Energy Source	Coal	Coal	Gas	Coal	Gas	Uranium	Water	Wind	Biofuel	Solar
Generating Costs (c/k Wh)	4.90	3.6 – 6.0	4.9 – 6.9	7.9	6.4 – 8.4	3.9 – 8.0	4.2-7.8	3.0-8	2.8-7.6	8.7 – 40
Emissions (G C/k Wh)	229	190-198	103 – 122	40	17	0	0	0	0	0
Cost of C reduction (\$/t C avoided)	Baseline	-10-40	0 – 156	159	71-165	-38-135	-31-127	-31-127	-92-117	175-1400
Reduction potential to 2010 (Mt C/yr)	Baseline	13	18	2-10		30	6	51	9	2
Reduction potential to 2020 (Mt C/yr)	Baseline	55	103	5-50		191	37	128	77	10

PF, pulverised fuel; fgd fuel gas desulphurisation; IGCC, integrated gasification combined cycle

Source: R.E.H. Sims et al (2003)

Table 2: Cost estimates of alternative mitigation technologies in the power generation sector compared to baseline coal-fired power stations and potential reductions in carbon emissions to 2010 and 2020 for non-Annex I Countries

Technology	PF+ fgd, NOx, etc.	IGCC and super-critical	CCGT	PF + fgd + CO <sub>2</sub> capture	CCGT + CO <sub>2</sub> capture	Nuclear	Hydro	Wind turbines	Biomass	PV and solar thermal
Energy Source	Coal	Coal	Gas	Coal	Gas	Uranium	Water	Wind	Biofuel	Solar
Generating Costs (c/k Wh)	4.45	3.6 – 6.0	4.45-6.9	7.45	5.95-8.4	3.9 – 8.0	4.2-7.8	3.0-8	2.8-7.6	8.7 – 40
Emissions (G C/k Wh)	260	190-198	103 – 122	40	17	0	0	0	0	0
Cost of C reduction (\$/t C avoided)	Baseline	-10-200	0 – 17	136	62-163	-20-77	-10-129	-56-137	-63-121	164-1370
Reduction potential to 2010 (Mt C/yr)	Baseline	36	20	0		36	20	12	5	0.5
Reduction potential to 2020 (Mt C/yr)	Baseline	85	137	5-50		220	55	45	13	8

PF, pulverised fuel; fgd fuel gas desulphurisation; IGCC, integrated gasification combined cycle

Source: R.E.H. Sims et al (2003)

The initial investment required shifting from generating electricity from coal or natural gas to renewable energy is high and in some cases prohibitive for entrepreneurs looking at large scale projects. However, this cost is higher in developed countries, where existing thermal capacity is typically sizeable enough to generate electricity to meet forecasted demand for years to come, and that have invested in electric grid infrastructures to connect urban and rural areas and populations. So far, European Union (hereinafter EU) member states, Japan, the United States and other industrialised nations have attempted to evade this technological lock-in through expensive renewable support schemes such feed-in tariffs. Developing countries however, where support is not extensive, continue to measure the viability of renewable energy sources against that of cheap coal and natural gas.

However, at the individual level, resources to finance small renewable energy projects can be obtained through structures similar to those of micro financing grants that have been developed in the financial sector.<sup>v</sup> Projects to install solar panels contribute to secure the provision of energy to individual households without investing in connecting them to the electric grid. This option is appealing especially for less developed countries that have little installed capacity for coal and gas electricity generation, and that have minimal electric grid infrastructure. If these small investments are encouraged within a CDM-like framework, less developed countries could leapfrog coal, gas and oil-based technologies for renewable ones, and could reduce their reliance on foreign provisions of fuel to generate their electricity. A good example of a suitable partner is Lebone Technologies (<http://www.lebone.org/>). The company is a specialist in delivery of off-the-grid electricity. In this way, the company seeks to end the energy and lighting crisis in Africa by identifying and harnessing emerging technologies, developing and adapting them for the African market.<sup>vi</sup> For example, Lebone Technologies carried a pilot project in Tanzania in using microbial fuel cell technology to provide direct power to cell phone chargers.

### 3.3 Democratisation of energy production

A bottom-up approach to the CDM will recognise not only GHG emission reductions, but also the production of renewable energy or reductions in the energy footprint of individuals. At the core of this proposal, individual efforts will be rewarded with CERs through clusters of these actions, with such project clusters sanctioned for CDM status.

Small scale renewable energy projects and energy efficient initiatives naturally raise SD indicators. In rural areas, communities can take ownership of the projects and as such, the projects encourage the construction of social capital bonds and the sharing of resulting benefits among the community members.

Non-governmental organisations (hereinafter NGOs) already have experience implementing small scale renewable energy projects in developing countries. They rely on various sources to raise the necessary funds, including contributions from private donors or partnerships with governments. However, they could benefit from claiming CERs under the CDM for the emission reductions they generate, and potentially re-invest this financial gain in new projects. The activities of these organisations already include micro hydropower, cooking stoves, biogas plants and solar panels (Gallagher et al, 2006). Such types of projects, and new ones, could expand at a faster pace.

An example of this type of initiative is the Barefoot College in India. The organisation has developed a methodology to teach illiterate women to install and maintain solar panels in their communities. Currently, the Barefoot College has women trainees from developing countries spanning Asia and Africa. The trainees learn how to install and maintain a solar panel system that supplies their village with electricity. So far, women trained at the Barefoot College have installed solar panels in 350 villages in remote rural areas, thus covering a total of 12,000 households.<sup>vii</sup> Another example is the Grameen Bank in Bangladesh that now operates Grameen Shakti, which aims to help deliver renewable energy to rural households in Bangladesh (Gallagher et al, 2006).

## 4. Revamping the institutional framework of CDM

In Copenhagen we hope to assist the revamping of the institutional framework devised to address climate change. As explained before, the Kyoto process, although a step in the right direction, led to a set of institutions welded in many cases through political compromises or a diplomatic minimum common denominator. Therefore, the result has been less than satisfactory, as the lack of policy and effect coherence throughout the system remains to this day a constant. At the same time, in all fairness, from the perspective of institutional design, the Kyoto process has a lot to show in terms of progress. However, it is also clear that the whole framework is in need of major reform if it is to function effectively and meet its objectives in addressing climate change effectively.

If Copenhagen delivers what is expected and needed, the effectiveness of the framework to address the urgent issue of climate change will be improved. This could be the result of a complete redesign of the framework or alternatively, the result of a more staged approach aimed at adopting and absorbing the institutional knowledge and know-how that the Kyoto years have generated. This paper clearly supports the second option. Considering the political and diplomatic cost, it is not advisable to contemplate a complete revamping of the Kyoto system. Instead, it is better to conceive a solution that takes advantage of the institutional devices already included within the Kyoto Mechanism, seeking an internal redesign rather than a complete redrawing of the model.

For this reason, one must identify within the current Kyoto framework those concepts or institutional devices that could offer the possibility of marrying the need for greater and effective action without departing from the grand institutional lines that have shaped the Kyoto model until now.

The CDM clearly meets those criteria. The CDM, despite its fortuitous origin, is the component within the Kyoto's institutional structure that shows the greatest unfulfilled potential and greater promise in terms of its ability to influence efforts to address climate change. The mechanism could reflect a new approach in the shape and functions that could adopt without straining to an intolerable level the diplomatic consensus that will likely be in short supply during those negotiations. The approach proposed here is then to use to a great degree what is currently in place, modifying, adding, or complementing using other tools and concepts already tested and functioning. For this, it considers that rather than creating all the necessary tools, it can rely on the notions of secondments, consortiums, and inter-agency initiatives – so common now in the United Nations (hereinafter UN) wider system – linking the actions suggested here with agencies already carrying those particular tasks.

Agencies such as the World Meteorological Organisation, the UNFCCC, the United Nations Environment Programme (hereinafter UNEP), the United Nations Development Programme (hereinafter UNDP), the World Bank, the Food and Agriculture Organization of the United Nations (hereinafter FAO), as well as regional development banks can work together to facilitate the emergence of a stronger CDM. This way, each one of the components can focus on their own comparative advantages. This can render the implementation of the set of measures suggested here surprisingly simple or cheaper than usually expected. The whole is to be presented as one single proposal package that could have a tangible impact in addressing climate change and that, ideally, will not require an unreasonable amount of political capital to be negotiated and adopted. The proposal does not aspire to be a panacea but rather a significant part of what can be achieved under the present condi-

tions and whose utility is linked to the overall set of reforms that will likely emerge from the Copenhagen summit.

The proposal is then to focus on five concepts that will determine the shape and functions of the CDM within the layers of international environmental governance and in relation to the wider international system, taking the bottom up approach as the main azimuth for the orientation that these changes will give to the CDM structure. On the basis of these concepts, it is expected then that the CDM would have a bigger influence and footprint at the national and local levels of governance.

In short, it is proposed then to redefine or enhanced the following:

- 4.1 Promote a robust funding strategy, to enable the CDM to have its own seed funding and project implementation capacity.
- 4.2 Promote key CDM conceptual measures such as shifting from the core idea of "additionality" towards sectoral baselines, emphasis on efficiency and novel transport approaches, etc.
- 4.3 Establish a policy unit and monitoring functions for the CDM, mandated to proactively pursue the CDM objectives.
- 4.4 Develop a wider access platform for an enhanced interaction process between different forces in society, so that in a sort of clearinghouse context, all type of stakeholders can collaborate.
- 4.5 Integrate the CDM structure within the wider international governance system.

The aggregate effect of addressing these five aspects in one package will facilitate the emergence of a rather powerful CDM that will ensure the adoption of a wider approach towards the normative and prescriptive tackling of rising carbon emissions, the need to promote efficient energy use, and to address the participatory gap between civil society at large and the leading efforts on tackling climate change. Each one of these components, along with the proposed measures is explained further down.

#### **4.1 Promote a robust funding strategy**

The CDM is strategically located at the right place to play an important role as a funding source and clearing house to stimulate and promote the objectives of the future Copenhagen process. Until now, the CDM acted as a processing and validation body, authorising a given project its transit through the crediting path. However, its vantage point remains under-utilised because it cannot promote alternative funding relations or allocate its own resources to facilitate projects. The CDM can certainly take on the role of funding mechanism for at least the medium and small size initiatives. This way, its unique vantage point, added to its policy role – see next point – and funding capacity will enhance its ability to bring change.

The funding mechanism for the CDM can be established on a model with different modes of absorption where one combines elements of microfinance, novel fundraising techniques, direct participato-

ry lending, and normative and direct investment modes of disbursement, such as allowing the CER crediting for private investors, and the generalisation of the EU Linking Directive as a global norm, which will be explained further below.

This funding mechanism can serve two main purposes: (a) support the implementation of CDM projects in the category of CDM policy-initiated and (b) facilitate the coordination of funding for CDM projects based on bilateral initiatives – see both below. In detail:

**a) Fundraising and Direct participatory lending:** The potential of civil society as a major funding source and engaged actor in the issue of climate change needs to be used. The CDM, using a grass-roots mechanism coupled with digital technologies, similar to the system developed to fundraise on behalf of charities, can facilitate the creation of a funding mechanism to intervene and support in appropriate points of inflection. Like political parties, whose funding strategy can capture corporate donations as well as small households' contributions, a potential funding section of the CDM will soon be able to catalyse efforts or support transfer of technologies, channelling the aggregate power of many small actors. The same applies to direct participatory lending, (i.e. [www.kiva.org](http://www.kiva.org)) where groups of independent actors decide which projects to support, independently of how small scale these are. The mechanism basically combines micro financing with matchmaking funds deposited by small investors. This way, people can lend small amounts from far away locations, counting on the support and coordination of a single structure. They can identify the projects via the current national CDM process.

**b) CER Crediting for Private Investors:** This will basically facilitate the participation of private investors directly into the CDM funding scheme, given that to this date, the process has been circumscribed to national governments and multilateral organisations. According to Michaelowa and Butzengeiger, this process has now been fixed, albeit slowly, for the EU. It would be desirable to extend this procedure to non-EU areas as well, by emulating the process created by the EU Linking of private directive<sup>viii</sup> (Zaman, 2008).

#### **4.2 Promote key CDM Measures**

Along with the efforts to facilitate access to the CDM process, there are some key substantial measures that should be included in any process of reform to ensure different policy and carbon reduction outputs. These are:

- a) Move from the core concept of additionality to baseline approach as the guiding principle for the approval of projects. This will particularly offer advantages for medium and small size projects. Considering that the CDM will be able to play a more proactive policy role, it will be possible to establish sectoral baselines even at very local levels, based on cumulative data and sound policy analysis.
- b) Ensure financial support and an emphasis on energy efficiency and transport. As the CDM develops its policy and project implementation capacity, it can use its own resources as well as preferential incentives to promote clean renewable energies, electricity and the most suitable transport options.
- c) Accept sector baselines and bundling projects. Use instruments such as proper monitoring and lessons learned to keep sector baselines and bundling projects up to date.

### 4.3 Establish policy and monitoring function

The CDM, if given the appropriate tools, can play a much bigger role in addressing the policy gaps that will eventually arise in the post-Copenhagen period. As it stands now, the formulation of policies to address carbon reduction, energy efficiency, or the promotion of different types of collective actions is beyond the realm of action of the CDM. To fulfil this policy role, the CDM should acquire the human resources, technical tools and mandate to be able to formulate sectoral or punctual interventions in areas where it sees a need.

The policy unit of the CDM can build on the institutional experience established by UNFCCC, UNEP, the World Meteorological Organisation, and the Global Environment Facility. As a policy body, it will have to be able to connect the economic, scientific, financial, developmental and political perspectives<sup>ix</sup> of the climate change issue, liaising as well with national and sub national levels of governance. Staffed by a multidisciplinary team, it will have the ability to identify points of inflection where it can intervene, using its funding and technical branches to determine the best course of action. Furthermore, from its vantage point, it will be able to fulfil its role as coordinating clearinghouse for further promotion of carbon reduction initiatives of different scales among different partners.

With a new policy unit, the CDM will be able to:

- a) Monitor in accordance with its objectives, the pursuit of carbon reduction efforts, or the implementation of energy efficiency measures, spotting encouraging or worrying trends and enable the smart use of resources to correct bottlenecks or support catalysing efforts.
- b) Analyse and capture (analysis and databases) the set of best practices aimed at consolidating the group of "approved methodologies," while promoting a standardisation of project submissions, which clearly will translate into efficiency gains at different levels of the process. Indeed, the process of approval will improve on the basis of lessons learned from past practices, sector approaches, the extent to which standardisation of project submissions is achieved and perhaps on the notion of bundling projects.<sup>x</sup> Consequently, more projects and more cross learning will take place. It will be basically a process of learning from mistakes and shortcomings, ensuring that different approaches are tried out and the best get captured and shared at a global scale. Common standards will also facilitate the replication of projects in other areas.
- c) Formulate projects where it sees fit. This policy role will also enable the CDM to promote collaboration between potential partners (whether North-North or North-South), fostering transfer of technologies and the massive adoption of novel and efficient solutions. This means that the CDM will have the ability not only of processing what is presented but will acquire a very proactive role in advancing its goals.

Another important consequence of a revamped and better informed CDM coupled with better access towards small size projects is the ability to manage the bundling of projects of small size. This can be accomplished, departing from current practices, on the basis of the standardisation of the approval process and the possibility of accepting reductions not from one single project but from a set of projects focused in one sector or geographic location. This means that as information on approvals and

validations from the case to case basis accumulates, the system will learn, developing an institutional knowledge –perhaps developing one, broad database from which accepted standards will emerge.

### 4.4 Develop wider access platform

It is important to render the CDM the main point of access for ensuring the wider degree of participation from different sectors in the global effort, given that in the field of climate change, there is a wide spectrum of actors in terms of size, power, reach, and capabilities.

For instance, under current arrangements, funding for projects is mostly the result of covenants between a certain group of parties of a given size (national governments, big economic interests, etc). This approach has delivered some results, but one should note that the medium and small size actors, if aggregated, also carry a major weight in the potential impact in reductions and energy efficiency (Figueres and Philips, 2008). The influence of these actors can be aggregated if the impact of the CO<sub>2</sub> reductions that stem from their small and medium size projects can be quantified in ways that reflect their collective effect.

Once approvals can be granted by sector, small and medium size projects can be submitted together for one single round of evaluation and approval. Not only their impact on the environment is quantified, but it allows a direct interaction between local initiatives and the global approach towards an improvement of the situation. As it has been mentioned before, the impact in CO<sub>2</sub> is not negligible, toppled by the fact that these efforts can also deliver a great deal in terms of public opinion mobilisation.

### 4.5 Integrate the CDM structure

An important part of the approach here is that the set of proposals put forward do not have to be created from scratch, nor are they dependent on a major funding initiative from a group of governments or major corporate donors. In fact, all proposals made here reflect activities that are currently implemented by grassroots associations, UN agencies, The World Bank, NGO's, or simply require a realignment of functions or mandates of institutions already carrying out part of the tasks that are herein proposed.

Focusing on the bottom up approach and relying heavily on the inter-agency and consortia approach, one can establish a support infrastructure around the CDM that will enable it to respond to this new task. Favouring this approach carries a great disadvantage, which is the massive amount of coordination needed. This certainly will require a great effort in terms of institutional design. On the other hand, the potential start up costs might be shared by many and the participatory index will also translate in gains in terms of popular support, transparency, and continued engagement.

**a) Funding and Carbon Trading:** Clearly, the CDM is to expand its technical and carbon trading expertise, so that it can be well positioned to take advantage of a redesigned function and ability. The fundraising and certification mechanisms established for massive charity fundraising pooling efforts in the United States and Canada (i.e. United Way International)<sup>xi</sup> can be complemented with the financial structure of microfinance institutions such as the Grameen Bank. In many cases, it will be possible to add the CDM Climate change initiatives to the flow of information and funds that these

institutions manage already. This way, a local small size project in Bangladesh can be considered, analysed, monitored, and supported via access channels already in place. This does not discard the possibility that they might be part of a bundle of projects to be managed and processed using sector baselines or standards. The other way around, if the CDM determines that a particular intervention is needed, it will be able to provide its support via these local mechanisms or through bigger financial institutions (all determined by the particularities of the case).

**b) Policy and Monitoring:** UNEP, UNFCCC, UNDP and UN volunteers are already carrying a great bulk of these tasks, and the model of the Inter-agency consortium easily comes to mind. UNEP and UNFCCC already combine field, policy, and carbon mechanisms expertise that can be matched by the global presence (for global accessibility) and financial muscle (for delivery of funds) of UNDP. The CDM can also count on the UN Volunteers programme to develop the type of grassroots expertise that would allow them to increase their reach for monitoring and implementation of small and medium size projects.

**c) Mechanism:** The CDM should function by connecting its policy, monitoring, funding, and clearinghouse functions. In a way, it should be a far improved version of the current UNFCCC Bazaar (<http://www.cdmbazaar.net/about.asp>), which attempts to provide the clearinghouse function proposed here, but without the policy and proactive capacity that can render the CDM a far more effective mechanism. It is obvious that a complex mechanism that seeks to mobilise market forces to address the pressing need to reduce CO<sub>2</sub> emissions faces a great challenge.

Specifically, the CDM should be able to function as a funding mechanism, collecting resources that will be used to fund specific projects that deem strategic to facilitate further carbon reductions. The use of the funds might take place as joint ventures, matching funds or seed-money. Having this financial latitude, the CDM will be able to engage other institutions – in some cases financial, in other cases not – as disbursement facilities, and not relying merely on those registered traders of CER values. In a nutshell, the public should be able to interact with the CER facility in the same way that through different channels the general public can acquire or take part on different and variably complex financial mechanisms such as mutual funds, etc.

As its policy functions takes on a wider mandate, the CDM will have the ability to reconsider the function of the national validating authorities for CDM Project. Seeking standardisation and a clear path of approval, projects proposals will be invariably driven to respond to specific and regular criteria –standardised score cards perhaps – instead of relying on a process where projects were basically dependent on a procedure implemented on a case by case approach. Here it is not argued that the CDM should develop a far reaching ability to deal with projects globally, but that by relying in coordination and application of standards, it facilitates the process of application and implementation of projects via third parties

Policy married to implementing capacity will mean that the CDM will be able to execute certain activities at different levels. The CDM will be able to rely on a well defined path, combined with local financial presence – via UN agencies or regional and local financial institutions – to facilitate the funding of local initiatives of variable size. As carbon reduction activities take place, the CDM can immediately respond by converting reduction efforts into funds that can be used to further support those efforts. As the funding mechanism shows a grass-roots nature to collect funds, it can show a

similar approach the other way around, allowing for funding incentives to reach small initiatives. This way, the CDM will expand on its initial function, but widening its approach for capture and disbursement of funds, complemented with its own ability to spend and to promote certain types of projects that respond to a certain criteria.

Clearly, in a process like this, the fundraising efforts of a small community will be able to translate into funding opportunities for carbon reduction initiatives across the globe, with fewer restrictions related to the size, the standards, or the real impact of an individual effort. As mentioned previously, the value of the aggregate reduction, complemented with the tangible results linked to public education and public opinion mobilisation can render these efforts quite effective.

**d) Implementation:** One of the main advantages of this proposal is the fact that this strategy builds on elements that are already in place within the Kyoto Protocol framework. Institutionally, there is room for reforms, but these do not require departure from the concepts that were accepted at the time of the Kyoto negotiations. It works on the ideas of modules that can be added to the structure of the Kyoto system, either by allowing the creation of new institutions or by establishing bridges with other institutions already in place. It relies on the assumption that is more politically viable to modify than to create anew. Conceptually, the changes proposed to the CDM are largely incremental and can be implemented in a way that does not require a major departure from what is agreed already. In fact, aside from the key measures mentioned before (EU linking directive, and allowing direct investment, as well as re-prioritisation of target areas), the CDM reforms can even be implemented by measures that are not dependent on the Copenhagen round. Furthermore, they can be absorbed into the structure currently in place partially or as a whole. Moreover, these reforms rely heavily on the idea of public participation, and engagement with the policy process in place to address the problem of CO<sub>2</sub> emissions. This way, the degree of success is linked to a widespread civic engagement at different levels. Assessing the current interest in the issue, it is safe to assume that this type of approach will likely be embraced by many sectors.

## 5. Conclusion

The Copenhagen round will offer an opportunity to address many of the shortcomings of the Kyoto framework, so that the set of institutions put in place can really address the issue of carbon emissions. There is a need for change and the gravity of the situation demands of all parties ingenuity and commitment. The CDM reform process can tackle that need for change and improve in an area that allows for simple and effective modifications. Adjustment to the CDM structure, mandate, and reach offers a great deal of potential in terms of what can be achieved, within a conservative estimate of the final outcome of the diplomatic negotiations. Furthermore, seeking to reform via the CDM will create the space to facilitate further transparency and greater participation from different sectors. Small efforts will be supported and local engagement encouraged, rendering the means of action accessible to the greater number. Hopefully, focusing on the CDM will ensure a better and more comprehensive approach towards a problem that demands immediate action and that threatens the future of present and future generations.



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## Notes

<sup>i</sup> The reduction targets were negotiated with respect to a baseline of 1990 emission levels of CO<sub>2</sub>. During the negotiations, several options were discussed as prospective baseline years. The three sound options for baseline year were: 1. Proposal for a multiyear baseline between 1988 -1992; 2. a 1995 baseline and 3. a proposal for a 1990 baseline (UNFCCC, 2000). Negotiations on the adoption of a 1990 baseline reached consensus with relative ease among the negotiators: *The multi-year baseline option was rejected in part due to the incompleteness of emissions data prior to 1990 ... Chairman Estrada was also reluctant to entertain suggestions to use a 1995 baseline, fearing this would open up a whole new area of debate on one of the few issues that was enjoying early and broad consensus* (UNFCCC, 2000). One reason that explains this consensus is that the 1990 baseline year did not represent a tight benchmark for reductions for some countries while it set a floor for reductions in other countries. In practice however, the baseline has not provided for a level field between annex countries.

<sup>ii</sup> <http://cdm.unfccc.int/Statistics/index.html>.

<sup>iii</sup> *'The language within the proposed text of the informal working group lead by Brazil had not appeared previously in the negotiations. The exceptions included the criteria for the certification of emission reductions (voluntary participation; real, measurable and long-term benefits; and additionality), which were similar to proposals put forward in the peer proposal of JI and were also derived from criteria for the AIJ [activities implemented jointly under the pilot phase] pilot phase. Provisions relating to "auditing and verification" and the participation of "private and/or public entities" also found resonance in earlier proposals on JI.* (UNFCCC, 2000).

<sup>iv</sup> <http://unfccc.int/resource/docs/convkp/kpeng.pdf#page=12>.

<sup>v</sup> Email exchange with Professor William Moomaw (25-11-2008).

<sup>vi</sup> <http://www.lebone.org>.

<sup>vii</sup> <http://www.barefootcollege.org/enroll1.htm>

<sup>viii</sup> This EU Directive (Directive 2004/10/EC) seeks to *create a linkage between the EU ETS and the Kyoto flexible mechanisms* (Zaman, 2008).

<sup>ix</sup> This would include the thorny issue of the North South perspective.

<sup>x</sup> Many small and medium scale projects do not qualify for a CDM approval given their relative small significance. Currently, the assessment of projects is done on a case per case basis or rather a one-to-one approach. Bundling will mean that several projects would benefit from being considered all at once –gain in size and significance-, and evaluated on the basis of their impact against a sectoral baseline.

<sup>xi</sup> <http://www.liveunited.org/>.