CDM Policy Dialogue

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Exploring the complementarities between the Green Climate Fund and the CDM:

Developing the GCF's Project Certification and Credit Issuance Process

Dr. Federico Gallo – July 2012

Key Findings:

1. **There is a unique opportunity for the Green Climate Fund and the CDM to collaborate by complementing each other's strengths and weaknesses (see Table 1)**

2. **One key area of collaboration was identified: co-designing and co-managing the Project Certification and Credit Issuance Process (see Figure 1 and Figure 2).**

3. **The report proposes a number of alternatives to implement this collaboration, and discuss their benefits and the risks (see Figure 3).**

4. **Also an initial quantitative assessment of the potential financial flows and resulting mitigations across the developing world is presented (see Figure 4 and Figure 5).**

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1. Introduction

The goal of this study is to explore how the Green Climate Fund (GCF) could benefit from the expertise gained and infrastructure developed by the Clean Development Mechanism (CDM) in the past decade.

The key questions that the report is trying to answer are: under what conditions and in what form could a "CDM-type Project Certification and Credit Issuance Process[1]" become adopted by the GCF to verify, certify and channel finance to mitigation projects in developing countries? How would this benefit the efforts to address climate change? What would the associated risks be?

1.1 The opportunity

The newly created GCF and the CDM are facing challenges and have strengths that are complementary, see table:

	Green Climate Fund	CDM
Strengths	Will create a source of **demand** for mitigation (and adaptation) projects.	Is a tested **mechanism** for verifying and certifying offset projects, and to channel funds towards them.
Challenges	Needs to design and implement **mechanisms** to verify the validity of potential mitigation projects, and thus certify them to render them eligible for financial support.	It is exploring options on how to position itself under the evolving international climate regime. Should it have a role beyond that set out in the Kyoto Protocol?

Table 1: Complementary strengths and weaknesses of the CDM and GCF. Could they collaborate to complement and strengthen each other?

1.2 The suggestion

The report proposes that the CDM Policy Dialogue should recommend beginning to explore options on how the GCF could adopt the CDM's expertise and infrastructure (in particular a reformed and improved version of the CDM), and adapt it as a mechanism to verify, certify and register mitigation projects, thus making them eligible for financial support from the GCF.

The timing is excellent: over the coming months the GCF will begin to identify potential mechanisms to manage the flows of its funds towards mitigation and adaptation actions in developing countries, as well as processes to certify projects that are eligible[2].

The diagram below illustrates an example. Under this scenario, the CDM could become a 'service provider' to the GCF: it could run mitigation projects through its verification and credit issuance process, leading to a certificate (much like a CER). This in turn would allow the project to receive GCF funding.

[1] This link summarises the CDM's Project Cycle, including validation, certification and credit issuance: http://cdm.unfccc.int/Projects/diagram.html

[2] http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cop17_gcf.pdf

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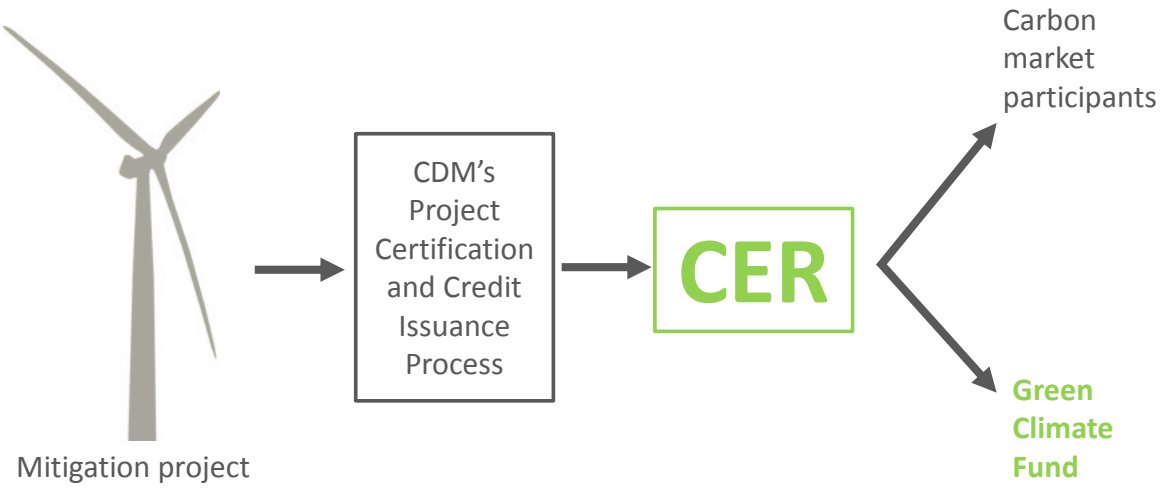

Figure 1: The diagram illustrates the various stages during the Project development shared by the CDM market and the GCF. In both cases, projects are required to undergo a verification and accreditation process, which leads to the issuance of a certificate of emission reductions. In turn, this certificate could be sold either to the market or to the GCF.

1.3 The benefits

This collaboration would be a win-win opportunity for both institutions. The GCF could build on the momentum and lessons learned from the CDM in the last decade and inherit its infrastructure. From the CDM's perspective, this would be an opportunity to scale-up its activities and would help harness its contribution in an increasingly complex and fragmented climate finance architecture.

More concretely, there are two key reasons why the CDM, acting as a 'Project Certification Service' to the GCF, could help accelerate financial flows to support mitigation action in developing countries, especially in the short/medium terms: one at the supply and one at the demand side.

1) Supply of finance. Linking the CDM and GCF may be supported by developed countries incentivizing the money flow from these parties to the GCF, especially if the CDM is reformed and improved. One important issue with the GCF at the moment is that of materialising the funds promised by developed countries. This delay is in part due to the uncertainty on how these funds would be used. A CDM-type Certification Process could expedite this process by providing certainty, especially in the short and medium terms. On the other hand it may make some developing countries state that developed countries haven't delivered on the money they promised for the GCF because it is simply going into buying CDM projects of less value to them.
2) Demand for finance. On the other hand, the familiarity with the CDM process would also incentivise project developers to accelerate their investments into mitigation projects. By contrast, if an entirely new certification process were to be implemented, this would cause delays for two reasons: first, because it would require time to design it and implement it; second, because investors would need to go through a 'learning phase'.

Later sections will explore in more detail the benefits of a potential CDM-GCF collaboration.

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2. The CDM as a 'Project Certification and Credit Issuance Process' service for the GCF

2.1 'Operationalising' the GCF: on the need to develop and manage a Project Certification Issuance Process

The GCF was established at the COP17 in Durban in December 2011. Its purpose is to accelerate and scale up investment in mitigation and adaptation projects in developing countries. Developed countries committed themselves to raise US$100bn yearly by 2020 from a variety of sources. At the time of writing the GCF is being set up, and Appendix II includes details on its history and its main characteristics.

As part of setting up the GCF, the Conference of Parties of the UNFCCC in Durban outlined a very concrete set of guiding principles that should be followed when operationalising the Green Fund. The following articles are of particular relevance to the current study and have direct implications for the CDM[3]:

- *"The Board will develop methods to enhance complementarity between the activities of the Fund and the activities of other relevant […] global funding mechanisms and institutions"* (Art. 34).
- *"The Fund will also initiate discussions on coherence in climate finance delivery with other relevant multilateral entities"* (Art. 34).
- *"The Board will develop, manage and oversee an accreditation process for all implementing entities based on specific accreditation criteria..."* (Art. 49).
- *"The Fund will have a streamlined programming and approval process to enable timely disbursement"* (Art. 53).

In summary:

1. The UNFCCC mandates that the GCF Board should collaborate with other institutions, such as the CDM, to explore complementarities on achieving their goals.
2. Also, the UNFCCC mandates to the GCF to develop a verification or accreditation mechanism to select and certify the mitigation (and adaptation) projects that would be eligible for GCF finance.
3. These are crucial questions which, at the moment, are not being fully addressed by the GCF because attention is currently focusing on setting up the GCF, selecting its Board and other governance issues.
4. The CDM Policy Dialogue is taking place at a very timely moment: it is reviewing its operations and exploring how to position itself going forward at a time when the GCF is beginning to identify mechanisms to certify its own mitigation projects.

Therefore, the above evidence suggests that there is an opportunity to bring together the needs and assets of the GCF and the CDM to explore their complementarity. In particular, the CDM should explore how it could provide a service to help the GCF develop and manage its Project Certification and Credit Issuance Process.

[3] http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cop17_gcf.pdf

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The next section explores how the CDM could help the GCF meet its challenges in designing and managing a system to incentivise mitigation projects around the world. In particular, the focus is on how the CDM could offer a tested body of know-how and infrastructure to develop and manage a process to validate and certify potential mitigation projects, and thus make them eligible for financial support from the GCF.

2.2 Capitalising on the CDM's expertise

In designing its international offset program, especially its project approval and certification process, the GCF will confront many policy issues and technical challenges similar to those confronted by designers of the CDM. Overall, any project certification program must incorporate policies, procedures and institutions that address key aspects of program implementation, including:

1. Submission of project-related documents for review and approval,
2. Development of applicable mitigation/offset methodologies,
3. Approval of proposed mitigation/offset projects,
4. Verification and certification of project-related emission reductions,
5. Emissions reduction credit issuance.

Figure 2 illustrates the CDM Project Cycle, and shows how this fulfils the above requirements:

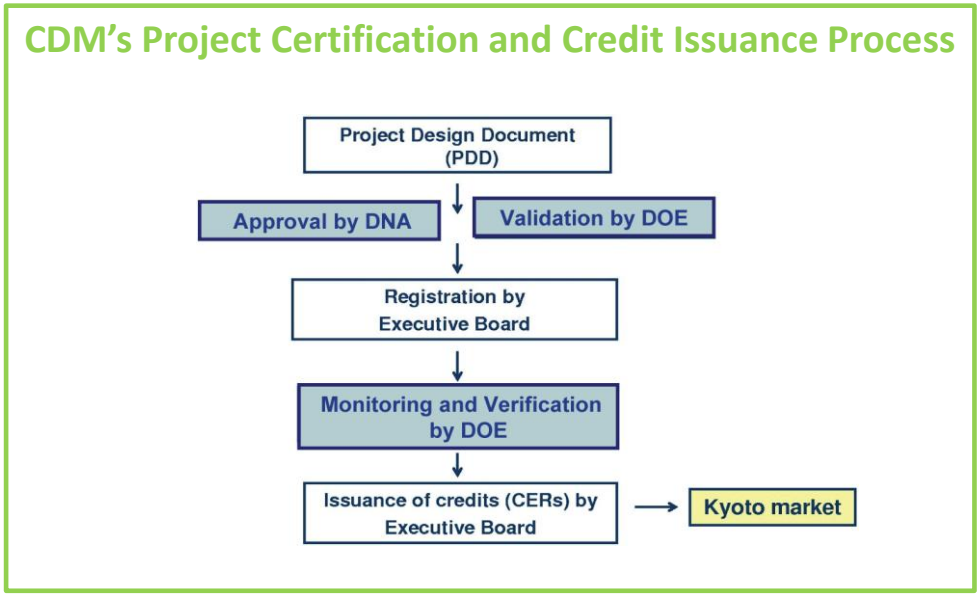

Figure 2: Schematic diagram of the CDM's Project Certification and Credit Issuance Process (Source: Point Carbon[4]).

Because the CDM was the first large-scale GHG offset program, it devised its own approach to addressing how offset projects are developed, validated, registered, verified, and issued Certified Emissions Reductions (CERs). This approach has become the standard against which all other offsets programs routinely are compared.

The CDM as a 'service'

The CDM currently provides a service to financial investors seeking to develop projects to generate eligible offsets for the international carbon market. One of the key challenges has been developing a

[4] http://cdm.unfccc.int/public_inputs/2011/eb64_02/cfi/SK3X51K1OAX014K8JWLYKMNIGXW42X

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methodology which ensures credits generated in this way are *additional* to activities that would have happened anyway. Countries hosting the project benefit from the inward investment to their economy but the profitability of the project is not reliant on the host country since it is the UN controlled CDM mechanism which creates the commodity of value for the investor. This helps to de-risk and de-politicise investment thus attracting private finance.

The CDM's Database

The proposed GCF will receive investment from countries rather than from private investors but the same requirements of de-risking and depoliticising finance flows will exist. To this end, the GCF can benefit from the CDM's body of knowledge and expertise, as well as its infrastructure. Beyond the well-developed certification process, the CDM's infrastructure also includes a vast database describing countries' BAU; this includes, among other things, emissions projections, and energy and climate change policies in all participating countries. This is crucial because it represents the background against which the additionality of proposed projects can be verified. It could also be invaluable in helping the GCF to determine the price(s) for carbon it will adopt and the most appropriate method for attracting bids. The CDM's market intelligence, together with the know-how to manage such infrastructure, could add substantial value to the GCF.

The CDM's "learning-by-doing" approach

In designing the world's first large-scale international offset program, policymakers and the architects of the CDM did not have the benefit of relying on prior experience in offset policy design. This necessitated a "learning-by-doing" approach. Part of the CDM's learning by doing has involved creating new institutional entities, and changing administrative structures and review processes as the program has evolved. The CDM Policy Review for which this report is being prepared is a concrete example of this "learning-by-doing" approach.

Some of the problems that prompted changes to the CDM are unique to the CDM, and its original design and provenance. However, many of the policy choices and issues faced by the international community when it designed the CDM and established its "procedures and modalities" also can be expected to confront GCF designers if they attempt to design a large-scale program to support mitigation projects around the world.

By adopting relevant aspects the CDM methodology, the GCF would inherit a flexible and adaptable approach and culture, as well as the infrastructure mentioned above. Even further: the need to design a new certification methodology would offer a unique opportunity for the CDM to design innovative methodologies that could maximise the strengths and minimise the weaknesses of the CDM methodologies adopted in the past decade.

The next section explores some of the potential forms of collaboration between the CDM and the GCF, and identifies some of their pros and cons.

3. How would this work?

This section explores some options of how the GCF could adopt and adapt improved and reformed CDM mechanisms and infrastructure to develop its Project Certification and Credit Issuance Process.

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The diagram below maps out the various options for cooperation between the CDM and the GCF, and orders them from highest to lowest levels of cooperation.

Figure 3: Six options covering the spectrum of cooperation between the CDM and the GCF, ranging from a high to a low level of cooperation.

The following sections explore the collaboration options in more detail, and analyse their advantages and risks. Some of the options could be combined.

3.1 Option 1: 'Outsource' to the CDM the development and management of the GCF's Project Certification and Credit Issuance Process.

Under this scenario, the GCF could 'outsource' to the CDM the role of designing, developing and managing the Certification Process on behalf of the GCF. The CDM currently operates an open certification process which allows anyone to propose methodologies for approval[5]. This means that the CDM has become a repository for the widest range of potential offset projects. For its part, the GCF might wish to adopt a closed or positive list by preselecting methodologies that are deemed eligible. Since the CDM will continue to attract more methodologies over time there could be regular opportunities to review the positive list so as to ensure the list of approved projects includes the most up to date and effective abatement options. Also, methodologies for actions currently outside the scope of the CDM could also be developed on request.

An area of added value could be for the CDM to help the GCF in the development of innovative programmatic approaches (rather than project-based). Here the CDM could add significant value, as it has experience with the limitations of project-based approaches and has been exploring options to develop programmatic CDM schemes. In particular, this could help to develop funding channels to finance Nationally Appropriate Mitigation Actions (NAMAs), which are a key area of interest for the GFC.

[5] http://cdm.unfccc.int/methodologies/index.html

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One added value of the CDM here is its trustworthiness. This could allow the GCF to treat the Certification Process as a black box. This option is illustrated by Figure 1 (I.e. the GCF would not necessarily need to manage the details included in Figure 2). The benefit in this case is that the GCF would be able to focus its resources and energy on designing and implementing financing mechanisms across various thematic areas, as mandated by the UNFCCC. Private investors are already familiar with the CDM and this could help the GCF to attract private finance to co-fund projects. The GCF could 'commission' ad-hoc adaptations to the Certification Process to match its financing mechanisms.

One advantage of this approach is that it would allow for specialisation to occur, and hence save resources and reduce costs by not duplicating tasks. The CDM could thence specialise as the designer and implementer of Certification Processes: the carbon market and the GCF would be two of its 'clients'.

This approach could be extended to adaptation: the CDM could develop tailored Certification Processes, thus enabling the GCF to focus on designing and prioritising financing mechanisms to fund adaptation projects. The details of these certification processes for adaptation projects go beyond the scope of this paper. However, in the case of water this might involve, for example, estimating water shortages due to climate change and then certifying projects aimed at closing this gap that would not otherwise have occurred. In particular, the CDM could help develop programmatic approaches that would allow the GCF help fund National Adaptation Programs (NAPs).

Potential reactions to this scenario

This option could be well received by project developers across the developing world, as the CDM is generally trusted and valued by host countries. Familiarity with the process would have advantages over entirely new and unfamiliar accreditations processes: this in turn could translate into more cost-effective mitigation at a faster pace than otherwise.

This benefit would be further enhanced by the GCF's ability to set the price at which it can fund each tonne of carbon. One potential weakness of the existing CDM market is the volatility of carbon prices, which can deter some participants.

It is well known, however, that the CDM processes are considered too bureaucratic, costly and time consuming. As a result, many investors from the private sector are deterred from participating in it. This is something the CDM Board is well aware of and working on. In order to act as a service provider to the GCF it will be essential to communicate how lessons have been learned and improvements made.

Also, some private investors are disillusioned with the CDM, and may prefer to develop a new mechanism from scratch rather than building on and improving the CDM.

One important point to note is that this need not be the only strategy followed by the GCF. In fact, it is possible that it could be one strategy within a more diversified portfolio. In other words, this option could be implemented together with some of the following ones.

3.2 Option 2: GCF to purchase CERs directly from the CDM market.

Under this scenario, the GCF could purchase CERs directly from the existing CDM market. In other words, the GCF would be just like any other market participant. One difference is that the GCF would not have a mitigation target, so it would buy the carbon credits to retire them from the market.

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Public Private Partnerships could be envisioned where part of the credits are retired while a portion are retained for use in the market.

In principle, this avenue should be relatively straightforward, as this is already done on a smaller scale by existing companies[6]. Given the potential scale of the GCF's operations, formal negotiations with the CDM would probably need to take place. One reason for this is that the effects on the carbon price could be non-negligible. However, an initial analysis would suggest that the impact may benefit the CDM market. The reason is that the GCF would add a significant demand for CERs and no supply: this would cause the carbon price to increase, and therefore incentivise green investments.

One disadvantage of this scenario, compared to Option 1, is that the price paid for each tonne of CO_2 would vary together with the market carbon price. As discussed earlier, this would add a level of uncertainty which could deter some investors or project developers.

3.3 Option 3: 'Outsource' to the CDM the development of the GCF's Certification Process.

This scenario is identical to Option 1, except for the fact that only the design and development would be commissioned to the CDM team. The implementation and daily management would remain within the GCF.

One advantage of this approach is that the GCF would have complete control over the process. Also, in the long term, the know-how acquired by managing the process would eventually allow the GCF to naturally develop its own certification processes.

Furthermore, by commissioning the design of the Certification Process to the CDM, this approach would allow the GCF to accelerate the development of this critical stage and be able to begin financing mitigations projects faster. (See benefits presented in the Introduction.)

3.4 Option 4: GCF to 'hire' a team from the CDM to join its own development of the Certification Process.

The GCF may decide to develop its own Project Certification and Credit Issuance Process. Given the experience gathered by the CDM in the past decade, the GCF will most probably have to analyse very carefully the characteristics of the CDM, including its strengths, weaknesses, and its proposed reforms. Also, the GCF would need to identify the differences and design changes which need to be made to the CDM to make it more suitable to its own purposes.

In this case, the CDM Board could offer to help tailor its CDM mechanism to the specific needs of the GCF. This scenario differs from Option 3 in that, instead of commissioning the development of the Certification Processes to the CDM, a CDM team is invited to join and assist the design in-house, within the GCF. In other words, the CDM would play a 'know-how transfer and advisory' role.

The GCF could benefit from the services of the CDM. In particular, rather than starting from scratch, the GCF could hire a team from the CDM to help them design a similar mechanism for the GCF.

[6] See for example: http://www.climatecare.org

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This strategy would have long term benefits, as eventually the GCF would acquire the complete expertise and know-how to develop and improve its Certification Processes independently.

3.5 Options 5 and 6: GCF to independently review the CDM mechanisms during its own development of the Certification Process, and No involvement of the CDM in the GCF

These last two options are presented for completeness. They represent the limit case where there is *no* formal interaction between the CDM and the GCF, beyond the lessons learnt that can be acquired through the literature, interviews with experts or other informal means.

4. General benefits, risks and considerations of a GCF-CDM collaboration

The previous sections presented various potential scenarios of collaboration between the CDM and the GCF. For each one of them, the benefits and risks that applied to them were discussed specifically.

However, there are benefits and risks, as well as considerations, which are more general and may apply to various scenarios: this section explores them.

4.1 Mandate overlaps and territoriality

One of the most important benefits of a formal collaboration between the GCF and the CDM would be to help address the issue of 'territoriality'.

Since the GCF and CDM teams would be working together on the certification processes, this would facilitate the management of other important issues such as overlap of activities and mandates. A detailed exploration of this issue goes beyond the scope of this paper, but the general idea is as follows. Both the CDM market and the GCF have as a goal to finance offset or mitigation projects in developing countries (with the CDM focusing on offset projects and the GCF on mitigation projects). What would the interactions between the two mechanisms be? Will each mechanism have a clearly distinct set of economic sectors? Or will they be financing projects in the same economic sectors but according to different rules?

4.2 The issue of scale

There is one important consideration of scale. What would be the magnitude of these new activities relative to the existing workload of the CDM? On the one hand, if the number of projects and associated financial flows under the GCF are considerably larger than those in the current CDM market, the CDM team may struggle to cope with the new workload. This may not necessarily be a problem, since the GCF would need to put in place the resources to manage such a challenge. This may mean that some of those resources could go to the CDM in order to upgrade its capacity.

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If, on the other hand, the GCF's activities are negligible compared to those of the CDM, it may not be worth the CDM becoming involved.

Appendix I shows some initial results indicating that the GCF's activities could ultimately be larger than those currently under the CDM. However, this initial modelling does not take into account the various potential barriers that are expected to exist at the onset of the GCF's activities. These barriers would be similar to those faced by the CDM: for example, delays in the project certification and credit issuance process, national bureaucratic barriers etc.

4.3 Benefits to the CDM

The CDM could benefit enormously from a new 'partnership' with the GCF:

1. First, it could secure demand for a significant number of CERs (or equivalent certificates) at a time of low demand and an uncertain future for market based mechanisms.

2. Second, by actively engaging with a nascent carbon finance mechanism, the CDM could help ensure greater clarity and consistency in their operations, to the benefit of developers, host countries and other stakeholders.

3. Third, by providing a verification and certification service to the GCF, the CDM could also play a key role in facilitating adaptation actions in the developing world which, in terms of financial flows, should be comparable to mitigation actions.

4.4 Limitations of the CDM program

The CDM program has been criticised for a number of reasons. These include:

- Some critics have argued that at least some of the emission reductions credited under the CDM are not "real," and are not "additional" because they likely would have occurred even if the CDM did not exist. Proving the additionality of emissions offsets—that is, that they would not have been realised but for the existence of the offsets program and associated carbon-related financial investments—is a central challenge for such programs.
- In addition, some observers have criticized the inefficient nature of the CDM's project approval process, and delays associated with obtaining necessary project approvals.

An interesting consideration is that the above two issues are intrinsically linked: improving the rigor of the certification process can come at the expense of its efficiency (in terms of reduced bureaucracy), unless it is done in an intelligent and pragmatic way.

However, it should be noted that efforts are being made to introduce more streamlined and efficient procedures in the CDM. It may also be noted that, in developing its Project Certification and Credit Issuance Process, the GCF could take inputs from similar processes developed, for example, for the Climate Action Reserve (CAR), Voluntary Carbon Standard (VCS), American Carbon Registry (ACR).

5. Conclusions and suggestions

This paper discussed the possibility of the GCF 'hiring the services' of the CDM to help meet its goals. A key area for a potential collaboration is the development and management of the GCF's Project

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Certification and Credit Issuance Process, where the CDM has unmatched expertise and could add significant value.

The paper also explored a number of options and directions in which this collaboration could be taken. An example would be to 'outsource' the development and management of the GCF's project Validation and Certification Process to the CDM. The paper also analysed the benefits and potential risks for these options.

Given these premises, there is a strong case supporting the advice that in the coming months the GCF and the CDM should explore in more detail options to collaborate (as mandated by the UNFCCC) by taking, for example, the options proposed in this paper as a starting point, and delving into the details.

5.1 Suggestions for further research

Since the GCF is being designed at the time of writing, considerable amount of research will be necessary to inform decision making by the GCF Board. Here are some suggestions:

- One key challenge for the GCF, as in the case of the CDM, will be addressing the 'access barriers', which may force the GCF to operate below its potential. Such barriers may include an excessively bureaucratic project certification process that discourages investors, lack of awareness, as well as incompatibility with local policies and regulations. Research should be carried out to identify, list and model such barriers. Incorporating them explicitly into models like the one presented in Appendix I would help identify 'low hanging fruit' and prioritise actions to capture them. This would complement the body of knowledge that has been developed by the CDM in this area.
- It will be necessary to analyse in detail the interactions between the GCF and the CDM carbon market, as well as other carbon finance mechanisms. It will be necessary to quantify the estimates of the impacts of potential policy decisions under various scenarios as the GCF develops.
- Referring to Option 2 above, it will be important to quantify and explore the potential impacts of the GCF entering the CDM market, for example on the price of carbon, the financial flows and ultimately the level of mitigation across the world.

6. Acknowledgements

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Appendix I – Quantitative Scenarios

This section presents an initial estimate of the potential financial flows from the GCF. If the CDM were in charge of managing the Project Certification and Credit Issuance Process, these estimates would give an indication of the level of additional activity for the CDM.

It is important to note that the results below represent the ideal upper limit because barriers are not being considered. Such barriers include lack of awareness of the available funds, bureaucratic barriers, being discouraged to apply due to the perceived complexity of the Certification Process and others. Studies suggest that the actual number of implemented projects is below 15% of the total potential [7,8].

The results below apply to the year 2020. A mitigation GCF of US$50bn is assumed (this is 50% of the US$100n agreed under the Copenhagen Agreement, leaving 50% for adaptation).

Here it is assumed that only developing countries are eligible for financial support, and that they don't contribute to the Fund itself. (For this exercise it is not necessary to know the individual contributions from developed countries towards the Fund.)

The models optimise the distribution of funds around the world by identifying the most cost effective mitigation opportunities. This is done by using marginal abatement cost curves (MACs).

In these scenarios it is assumed that the GCF pays a fixed price for each tonne of CO_2 mitigated. The carbon price is also determined endogenously. This is done by flowing US$50bn to the most effective mitigation opportunities and by requiring that the price of carbon is the same for tonnes of carbon in all sectors in all countries.

Apart from obtaining the price of carbon, the model calculates also the induced mitigation in all countries: that is the amount of abatement carried out by each country. The model is also able to estimate the mitigation in each economic sector (not presented here).

Here two scenarios are analysed:

1. **Scenario 1: all sectors included in the GCF.** In this case, mitigation projects from all economic sectors in the developing world are eligible for GCF funding. It is important to note that this scenario ignores interactions with other carbon finance mechanisms, such as the carbon markets which, in practice, would also be competing for the same mitigation projects.
2. **Scenario 2: power sector excluded from the GCF.** This scenario begins to delve into the interactions between the GCF and other mechanisms. In this case it is assumed that all economic sectors, except for power, are eligible for financial support. The associated implicit assumption here is that mitigation in the power sector is being carried out under other mechanisms, such as the carbon market.

The diagrams below show the results.

It is interesting to observe the global variables first. Scenario 1 results in a lower price per tonne of carbon and a higher induced mitigation than in Scenario 2. The reason for this is that, in Scenario 1, the GCF is able to source cheap mitigation options within the power sector, which is not able to do

[7] http://cdm.unfccc.int/public_inputs/2011/eb64_02/cfi/SK3X51K1OAX014K8JWLYKMNIGXW42X, page 12
[8] GHG Marginal Abatement Cost curves for the Non-Annex I region. Enery Research Centre of the Netherlands. 2007.

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under Scenario 2. Cheaper mitigation options result in the lower carbon price: US$10.9/tCO2e in Scenario 1 compared to $11.8/tCO2e in Scenario 2.

Cheaper mitigation options also mean that more abatement can be achieved with the US$50bn fund. Indeed, in Scenario 1 the total induced abatement is 4,578MtCO2e, compared to 4,225 MtCO2e in Scenario 2.

Scenario 1 results: all sectors included in the GCF

GCF - Mitigation: All sectors

Year: 2020

Global Financial Flows: 50 US$ bn

Global induced mitigation: 4,578 MtCO2e

Price of carbon: 10.9 US$/tCO2e

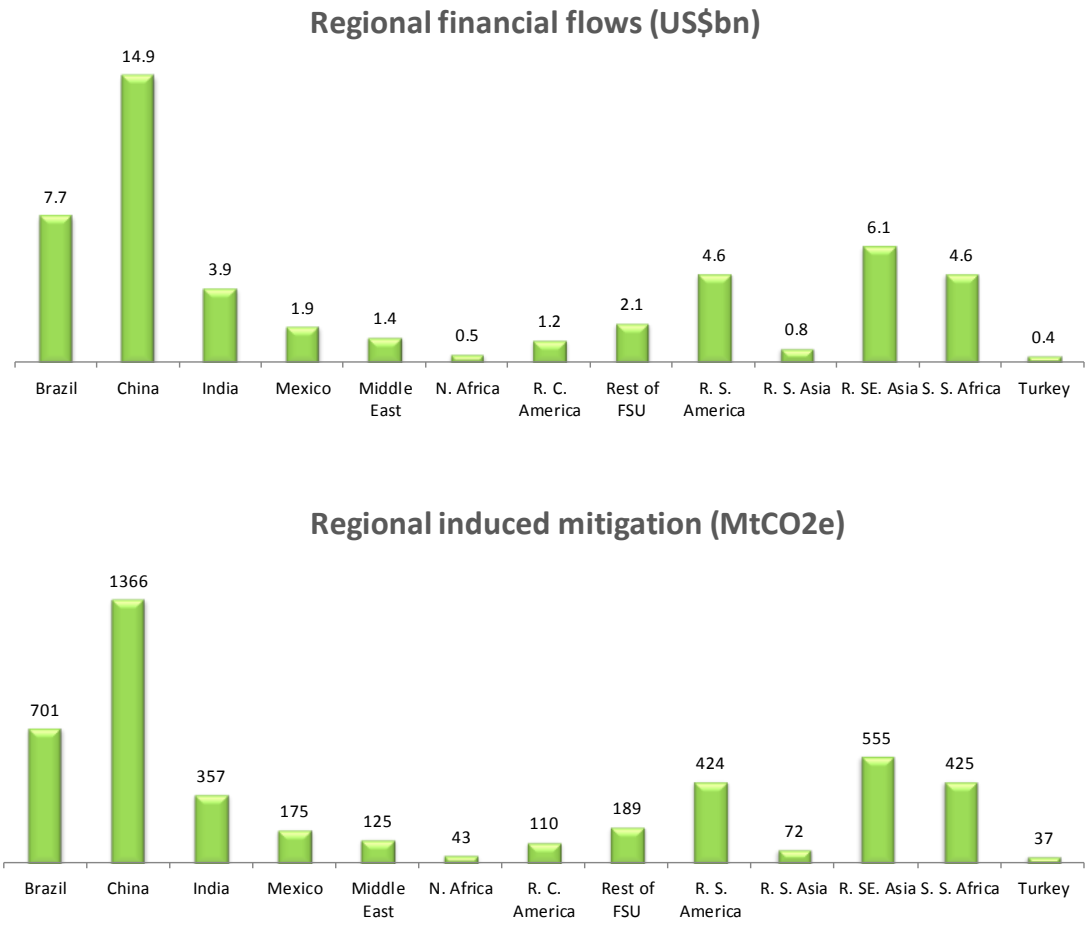

Figure 4: Financial flows and mitigation induced by a fund of US$50bn in the year 2020 under Scenario 1.

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Scenario 2 results: power sector excluded from the GCF

GCF - Mitigation: All sectors included except power

Year: 2020

Global Financial Flows: 50 US$ bn

Global induced mitigation: 4,225 MtCO2e

Price of carbon: 11.8 US$/tCO2e

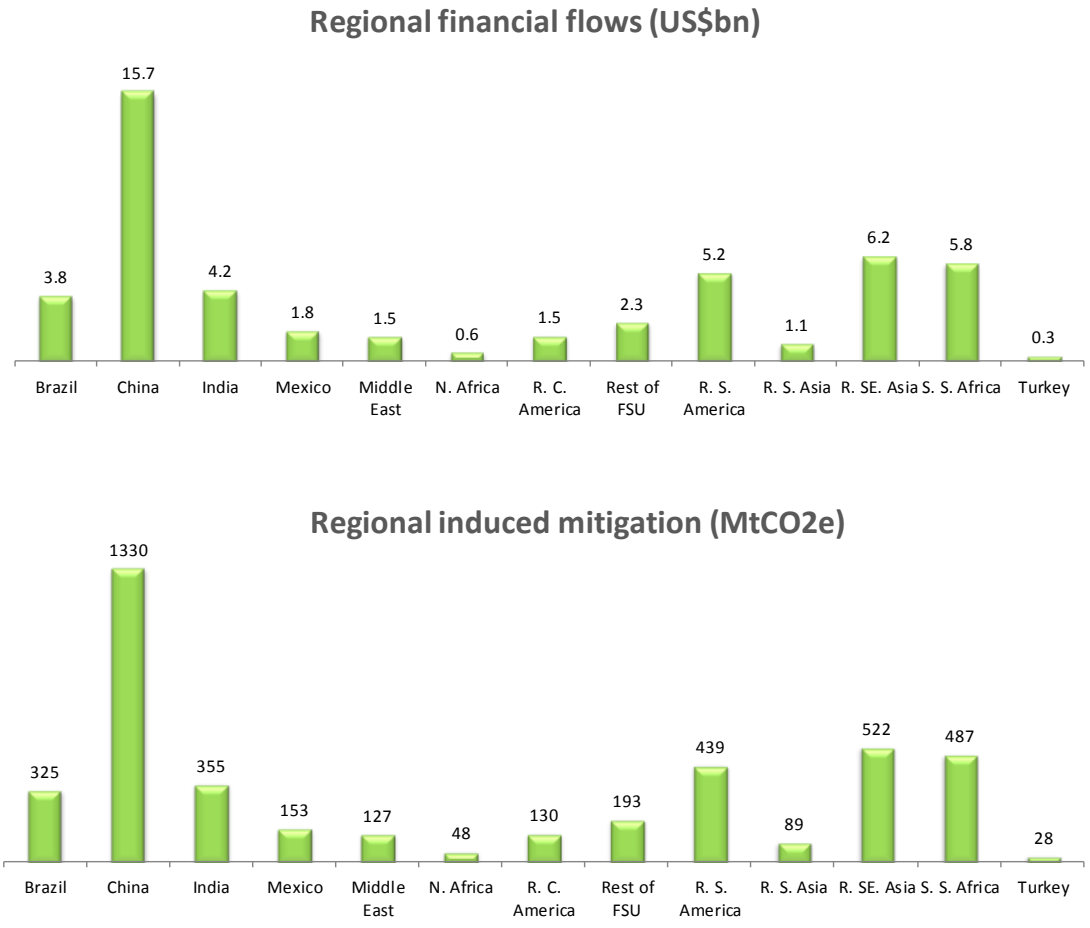

Figure 5: Financial flows and mitigation induced by a fund of US$50bn in the year 2020 under Scenario 2.

Looking at the regional level results, it can be seen that most of the mitigation is carried out in China, which, as a result, receives a large fraction of the finance. This is consistent with what is being observed under the CDM.

These scenarios only begin to look into the potential financial flows under the GCF: the reality will be much more complex. Therefore, these results should be treated with caution, and more detailed studies should be carried out in the future to obtain more rigorous, robust and disaggregated facts.

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Appendix II – Background on the Green Climate Fund

II.1 Initial proposal by Mexico

In August 2008, Mexico made a formal proposal to the UNFCCC for "a Green Fund to be multilaterally agreed upon and established as a financial scheme that complements existing mechanisms and ensures the full, sustained and effective implementation of the UNFCCC"[9].

The Fund was initially proposed as a mechanism to complement existing carbon finance mechanisms, such as the carbon market, and to help fill existing gaps. These gaps include:

1. Proliferation of small scale funds. Currently there are about two dozen separate funds that are limited in time and scope, supporting isolated projects in developing countries instead of large scale programs or sectors.
2. There is a growing gap between what is needed and what is available. It is estimated that by 2020 between US$100bn and US$200bn will be needed for mitigation and adaptation in developing countries. This is one order of magnitude larger than the current situation.
3. Donor-recipient model. The initial Mexican proposal suggested that all countries in the world contribute to the Green Fund. This led to lack of ownership from developing countries, which was perceived as an obstacle to scalability.
4. Inadequacy of governance schemes. Until the arrival of the Green Fund, the governance of the major carbon finance mechanisms had minor participation from developing countries.

The GCF answers all these questions, except for the third one: the UNFCCC decided that only developed countries are obliged to contribute to the Fund.

One key novelty of the Fund is that it will have a stronger representation and influence from developing countries. Indeed, the GCF will be equally represented by members of developed and developing countries.

Another ambition of the Fund is to help bring more certainty to the industry. This would be achieved in several ways:

- By creating a major international institution, it would improve on the predictability of bilateral finance agreements, which can be negatively affected by frequent changes of governments and hence policies,
- Another source of certainty would arise from the Fund's fixed price of carbon, which would not vary driven by market forces, but would rather be predetermined by the Fund. This would send a strong signal to investors.

Adaptation projects, alongside mitigation, should also be a major recipients of finance from the Green Fund.

II.2 Acceptance of the GCF by the UNFCCC

In December 2009, under the Copenhagen Accord[10], it was agreed that "the Copenhagen Green Climate Fund shall be established as an operating entity of the financial mechanism of the

[9] http://unfccc.int/files/kyoto_protocol/application/pdf/submission_mexico.pdf
[10] http://unfccc.int/resource/docs/2009/cop15/eng/l07.pdf

Convention to support projects, programmes, policies and other activities in developing countries related to mitigation including REDD-plus, adaptation, capacity building, technology development and transfer".

Furthermore, also within the Copenhagen Accord, "developed countries commit to a goal of mobilizing jointly USD 100 billion dollars a year by 2020", and that "significant portion of such funding should flow through the Copenhagen Green Climate Fund".

At the time of writing it is not yet clear how these funds will be raised. Indeed, as mentioned earlier, the suggestions in this report hope to help address this issue by helping bring clarity on how these funds will be deployed towards mitigation projects.

II.3 Starting the GCF

The Green Climate Fund then was formally adopted by the UNFCCC in December 2012 under the Cancun Accords[11]. The GCF is now being set up following precise guidelines[12] put forward by the UNFCCC. This is a very dynamic stage, and the progress can be tracked on the GCF's new website[13]. As outlined by the UNFCCC's Executive Secretary[14], the immediate next steps include:

1. Selecting the Board of Directors. This will be made up of 24 members, equally divided between developed and developing nations. The nominations to the board have not been without controversy, as various countries are jockeying for the responsibility of representing their region of the world. However, this is an indication that interest in the GCF is very high.
2. Selecting a host country. This is expected to take place late in 2012, and there are six candidate countries: Mexico, Namibia, Germany, Switzerland, South Korea, Poland.
3. Setting up the Secretariat of the GCF. Until this task is completed, an interim secretariat has been set up using resources from the UNFCCC Secretariat and the GEF Secretariat.
4. Also, a Trustee shall be set up and shall have the administrative competence to manage the financial assets of the Green Climate Fund. The World Bank is playing the role of interim trustee.
5. Finally, funds need to start flowing to the GCF.

[11] http://maindb.unfccc.int/library/view_pdf.pl?url=http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf

[12] http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cop17_gcf.pdf

[13] http://gcfund.net/home.html

[14] http://unfccc.int/files/parties_and_observers/notifications/application/pdf/111222_gcf_notification.pdf