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New Market-based Mechanisms post-2012: Institutional Options and Governance Challenges when Establishing a Sectoral Crediting Mechanism

By
Joëlle de Sépibus and Andreas Tuerk

UNIVERSITÄT BERN

EPFL

PAUL SCHERRER INSTITUT
PSI

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New Market-based Mechanisms post-2012: Institutional Options and Governance Challenges when Establishing a Sectoral Crediting Mechanism

Joëlle de Sépibus* and Andreas Tuerk**

Abstract:
The Cancun Agreements in December 2010 have set the basis for the continuing availability of market mechanisms to assist developed countries in meeting their mitigation commitments in a post-2012 climate regime. They provide that the introduction of new market-based mechanisms ("NMMs") will be examined at the next COP in Durban. NMMs, refer, in particular, to sector based crediting. There is not yet sufficient consensus on how new market mechanisms could be governed and which role the United Nations ("UN") should play. While some countries including Japan and Australia favour more decentralized governance models with only minimum criteria defined by the UN and a strong role for bilateral cooperation, the EU still has a preference for more centralized UN based governance. This paper gives an overview of current country positions, discusses pros and cons of different accounting and governance frameworks for NMMs, and examines inasmuch the Clean Development Mechanism ("CDM") provides a suitable model for centrally governed sectoral crediting mechanisms. It concludes that even if decentralized approaches also have their strengths compared to centralized governance models, minimum requirements need to be agreed upon under the UN to guarantee the environmental integrity of the mechanism.

Keywords: Market-based mechanisms, climate change, carbon markets, mitigation, UNFCCC, financial instruments, negotiations, post-2012 climate regime.

* World Trade Institute, Bern and CITEL, NCCR Climate
** Joanneum Research/Climate Strategies

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Table of contents

1. Introduction

The creation of increased demand from developed countries for emission credits from developing countries and provision of financial incentives for emission reductions beyond offsets from the Clean Development Mechanism (CDM) constitutes a major challenge for the negotiators of a future climate framework.[1] New well-designed market mechanisms (NMMs) can help to reduce greenhouse gas (GHG) emissions cost-effectively and could possibly contribute to global reductions, thus helping to ensure that the world moves towards a path that reduces the possible impacts of climate change.[2] If ill-designed, however, they will lead to a waste of scarce resources and a loss of public trust in such mechanisms.[3]

The Cancun Agreements of December 2010 have set the basis for the continuing availability of market mechanisms to assist developed countries in meeting their mitigation commitments in a post-2012 climate regime.[4] The Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) in Cancun decided to examine the introduction of NMMs at its next session in Durban at the end of 2011.

Whether the Parties will establish one or more NMMs within the framework of the UNFCCC in the near future remains uncertain. Thus, regardless of the outcome of international climate negotiations, some developed countries have announced their intention to take recourse to emission credits from mechanisms defined outside the UNFCCC. For instance, Japan has carried out feasibility studies for a new bilateral crediting mechanism in Thailand, Laos and Indonesia.[5] In the US, the planned emission trading scheme in California provides for the acceptance of bilaterally defined credits.[6]

The recourse to credits from mechanisms that are not created and issued under the oversight of the UNFCCC has, if used by Parties for compliance with their post-2012 mitigation pledges, potentially far-reaching consequences. The proliferation of units of differing quality and environmental integrity can substantially affect the integrity of the post-2012 climate architecture and render any meaningful comparison between the pledges made by Parties nearly impossible.[7] On the other hand, initiatives taken outside the UNFCCC framework, or assigning a smaller role to the UNFCCC than the current framework, may allow the exploration and testing of new tailor-made designs on a more manageable scale. Later integration in the UN framework may be considered if these initiatives are carried out in the context of internationally recognized pilot schemes, like Activities Implemented Jointly (AIJ) in the past.

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[1] Figueres and Streck (2009: 15).

[2] The UN Secretary-General's High Level Advisory Group on Climate Change Financing reported in 2010 that US$ 30 billion to US$ 50 billion annually could be generated in increased carbon market flows to developing countries, "if and when carbon markets are further developed and deepened. See UNFCCC (2011a: 50).

[3] Natural Resources Defense Council et al. (2011: 1).

[4] FCCC/CP/2010/7/Add.1 ("LCA-Agreement"), para. 46(d) and 80.

5 Japan Ministry of the Environment (2010), Japan and Global Environment Centre Foundation (2011). Japan's Initiative toward Establishment of New Mechanisms – Lessons learnt from Case Studies (2010).

[6] See Mehling et al. (2011: 17 ff.)

[7] See SEI (2011).

Among the most promising proposals for NMMs is arguably the creation of a Sectoral Crediting Mechanism (SCM) as proposed by the EU.[8] It centres on the idea that verified emissions of a broad segment of the economy of a developing country would be compared against an ex-ante agreed baseline. If emissions are below this baseline, credits would be issued which could be used for compliance with emission reduction targets. If emissions are above the baseline, no penalty would have to be paid ("no-lose target").

In some ways, the SCM is comparable to the CDM. Like the CDM it would be an ex-post crediting mechanism. Instead of covering a project-related activity, it would, however, reward sector-wide mitigation efforts.[9] According to the EU's proposal, credits would, in contrast to the CDM, not be directly handed over to the private sector, but to the government, thereby providing a direct stimulus to implement climate-friendly policies.[10] Under a sectoral mechanism therefore, the host country government would have a more active role than in the CDM and would have to ensure that the emission reductions are actually achieved.

One of the key issues that will have to be addressed in Durban is what kind of governance model will have to be adopted to ensure that an SCM works effectively and is environmentally robust.[11] Three main options are currently under discussion. The first is a centralized model, with centrally approved measurement, reporting and verification (MRV) methodologies and crediting thresholds, UNFCCC accredited verifiers and a single registry issuing and tracking the transaction of international credits. The opposite option is a decentralized model, where the oversight of the verification and issuance of credits takes place at the national or bilateral level. A third option consists of so-called hybrid models, where some elements of the mechanism are coordinated internationally while others are established bottom-up.

When considering the design and the governance of SCMs, the initiatives currently being taken, in particular by Japan and the US, possibly leading to a more fragmented bottom-up approach in the international carbon market, have to be borne in mind. Moreover, for the design of new mechanisms the overall post-2012 climate architecture is absolutely decisive and has to be taken into account. If the international accounting rules for the post-2012 economy-wide mitigation pledges are not robust and transparent, the adoption of stringent new international market mechanisms will be less compelling.

This paper is structured as follows. First, it examines the role of NMMs in the climate negotiations and the views expressed by Parties. Second, it describes the existing accounting framework and examines the implications of the various accounting options on the governance of NMMs. Third, it gives an overview of possible governance models for an SCM and discusses the pros and cons of these models, in particular the schemes currently proposed by California and Japan. Fourth, it examines how centralized governance for the SCM can be designed, partly drawing on the model of the CDM. Fifth, it explores more decentralized governance systems, referring to the experience gained with track I of Joint Implementation (JI) and GIS. Finally, the paper concludes with some recommendations.

[8] UNFCCC (2011a: 48).
[9] Figueres and Streck (2009: 26).
[10] See for a discussion on the advantages and disadvantages of the SCM over the CDM Sterk (2010: 6).
[11] See Schneider (2009: 9).

2. New Market Mechanisms in the Climate Negotiations

2.1. From Bali to Durban

To avoid a gap in the emission reduction commitments after 2012, the Bali Action Plan adopted in 2007[12] foresaw the establishment of a two-track negotiation[13] process with the aim of reaching an "agreed outcome" on long-term cooperative climate action in Copenhagen in December 2009. The largest climate summit failed however to bring about a comprehensive post-2012 climate architecture. In the absence of a consensus, the Copenhagen Accord, elaborated by a small group of countries, was not formally adopted but only "taken note of" by the Parties. The Accord mentions market mechanisms incidentally but gives no details.

One year later, in Cancún, Parties adopted a set of pivotal decisions that integrated the substance of the Copenhagen Accord into the UNFCCC framework. They reflect all of its major elements, in particular economy-wide emission reduction pledges by developed countries, "nationally appropriate mitigation actions" (NAMAs)[14] to be proposed and implemented by developing countries, the establishment of a Green Climate Fund, enhanced MRV of mitigation efforts and support provided, as well as the pledge by industrialized countries to mobilise US$ 100 billion per year by 2020.

The Cancún Agreements restored trust in the multilateral negotiating process to some extent. While this can be regarded as a significant achievement, many issues are still highly contentious. For instance, significant dissent remains regarding the level of emission reduction targets of developed countries, the sources for long-term finance and the legal form of the final outcome of the negotiations. Another divisive issue is the fate of the Kyoto Protocol (KP). While most developing countries are pushing for the adoption of a second commitment period, many developed countries, in particular, Japan, Russia and Canada refused to agree on new emission reduction targets in the framework of the KP, in particular because the United States had made no comparable commitments. As the US made it clear that it had no intention to do so, the deadlock could not be overcome. As a compromise, Parties took note of the mitigation pledges in a UN information document and decided to continue the negotiations in both tracks.

With respect to NMMs the COP decided to consider at its next session in Durban the establishment of one or more of them, provided that certain conditions are fulfilled.[15] The idea that markets should promote climate friendly policies and not just isolated projects is the rationale for most of the current proposals of NMMs.[16] Indeed, due to its design as a project-based mechanism the CDM does not promote structural changes on the scale necessary to encourage the transition towards low-carbon economies.[17] Although an attempt has been made to encourage the aggregation of small and possibly

[12] The Bali Action Plan adopted in 2007 requested the Parties to elaborate a shared vision of long-term cooperative action, including a long-term global goal for emission reductions," and to achieve "enhanced action" on mitigation, adaptation, technology cooperation, and international financing for the period after 2012.

[13] Ad Hoc Working Group on the Kyoto Protocol (AWG-KP) and the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA).

[14] See Hayashi et al. (2010b) for a case study on what a NAMA could look like and what sources of finance it could access.

[15] LCA-Agreement, par. 80.

[16] Figueres and Streck (2009: 23).

[17] Sterk (2010: 3), Castro et al. (2011).

decentralized projects into larger programmes through so-called "Programmes of Activities", the CDM[18] continues to fall short of triggering the necessary level of GHG emission reductions.[19]

Before the Copenhagen summit, it had been hoped that by expanding the market mechanisms to a sectoral scale the insufficient scope of the CDM could be effectively addressed. Indeed, NMMs are intended to provide financial incentives to large segments which have been largely ignored by CDM developers. Finally, NMMs were intended to address some of the weaknesses of the CDM, for instance its high transaction costs, the limited involvement of public authorities, and its sometimes doubtful environmental integrity.

In Copenhagen, however, the elaborated text on market mechanisms fell by the wayside owing to the general collapse of the negotiations and the attempt to ensure at least some outcome in the form of the Copenhagen Accord. In the run-up to Cancún, an informal group of countries, the so-called O2 Group, supporting the establishment of NMMs under the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA) track was set up. It included *inter alia* the EU, some members of the Umbrella Group and the Environmental Integrity Group, and several developing countries (DCs) such as Colombia, Peru, Chile, Papua New-Guinea, Indonesia, Bangladesh and Singapore. The members of this group share the view that NMMs are needed but diverge on their design and functioning.

At the UN meeting in Tianjin in October 2010, many developed countries, among them the EU, made it clear that any "balanced package of decisions" to be adopted in Cancún would have to contain a decision on the establishment of NMMs. Hence, despite Bolivia's loudly voiced opposition to markets, the Cancun Agreements mandate the AWG-LCA to elaborate one or more NMMs along the following lines:

> "New market-based mechanisms will have to stimulate the reduction of GHG emissions across broad segments of the economy and generate units for efforts that go beyond pure offsetting in developing countries, safeguard the environmental integrity of the regime, entail a net decrease and/or avoidance of global GHG emissions and ensure good governance and robust market functioning and regulation."[20]

Furthermore, Parties and accredited observer organizations were invited to submit their views by February 2011 (see next section for the content of the submissions).[21] In April 2011 at the UNFCCC meeting in Bangkok, Parties agreed that both market-based and non-market-based approaches would be covered by one agenda point although the topics had been treated separately in the Cancún Agreements. In the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) no consensus has emerged with respect to NMMs. The draft proposal of the AWG-KP[22] still presents two options[23] and defers decisions until the COP 17 in Durban.[24]

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[18] Programmes of Activities can be registered as a single CDM project. They were adopted by a COP decision in 2005.
[19] Figueres and Streck (2009: 24).
[20] LCA Agreement, par. 80 ff.
[21] The COP further requests the Subsidiary Body for Scientific and Technological Advice (SBSTA) to recommend modalities and procedures on the matter, with a view to forwarding a draft decision to the CMP for adoption at its seventh session.
[22] FCCC/KP/AWG/2010/18/Add 1.

2.2. Country Positions

Nineteen Parties accepted the invitation given at Cancún to submit their views, among them the EU and six other developed countries as well as thirteen developing countries. Whereas all developed countries that have made a submission[25] support the establishment of NMMs, the reactions of developing countries were more mixed, ranging from outright rejection to broad acceptance.[26] Several parties such as the EU, Switzerland, Norway, New Zealand, Australia and the Alliance of Small Island States (AOSIS) highlight the need for common accounting principles, robust MRV and ambitious baselines, and to avoid double-counting. Many countries, among them the EU and most developing countries, stress the "supplementarity" of the use of units from crediting mechanisms by developed countries, with Bangladesh requiring developed countries to realize up to 80% of their commitments domestically.[27]

Developed countries' positions

Stressing once more the importance of a strong role for market mechanisms to maintain the trust of carbon market investors the EU encourages the establishment of NMMs.[28] Their principal aim should be to foster climate investment in developing countries, scale up and enhance the cost-effectiveness of mitigation efforts in all countries, while improving MRV in some sectors. The EU distinguishes between two market-based approaches covering broad segments of the economy, namely sectoral trading and sectoral crediting. Sectoral trading would be a mechanism based upon the definition of an absolute mandatory target with emission allowances emitted ex ante, while sectoral crediting builds on the idea that if emissions are below a previously fixed baseline credits will be issued ex-post. Whereas in the sectoral trading model supplementary credits would have to be bought on the international market if emissions exceed the absolute target, no sanctions should be imposed if the baseline is not met in the case sectoral crediting model (no-lose target).

For the **EU** the LCA-AWG is the natural forum for discussions on NMMs. This position, however, does not imply that the EU is opposed to NMMs within the framework of the KP. The EU has consistently stressed that a reference to NMMs should be maintained in the draft negotiation text of the AWG-KP. Furthermore, the EU Environment Council of March 2011[29] has clarified that progress in the field of NMMs is necessary for the acceptance of a second commitment period.

The EU envisages two different governance approaches.[30] It proposes a centralized model, with common rules, possibly with a strong supervisory body, responsible for defining the mechanism and

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[23] Whereas the first foresees that no decision will made, the second option assumes that the CMP decides to establish new and additional market-based mechanisms that provide for the voluntary participation of Parties, reflect net contributions to global mitigation efforts by developing country Parties and are subject to the authority and guidance of the CMP. Ibid.

[24] The COP further requests the Subsidiary Body for Scientific and Technological Advice (SBSTA) to recommend modalities and procedures.

[25] Notably, the US has not made any submission, but supports initiatives like the "World Bank's Partnership for Market Readiness" and is involved in the development of low emission development plans (LEDs) for developing countries, which include NAMAs and market mechanisms.

[26] See UNFCCC (2011a).

[27] UNFCCC (2011a: 7)

[28] UNFCCC (2011a: 48 ff.)

[29] EU (2011).

[30] UNFCCC (2011a: 48 ff.)

ensuring its smooth functioning (like the CDM) and a more decentralized model, where eligibility criteria for access to carbon credits for developed countries are set at the UNFCCC level, but more flexibility is granted with respect to the definition and functioning of the mechanism.

Australia states that a broad range of NMMs should be available and pleads for a very flexible approach, allowing Parties to explore various designs. A "common framework" should be set up allowing Parties to submit various types of mechanism. When establishing these mechanisms, Parties should focus in particular on questions such as whether minimum requirements have to be set, what type of information must be disclosed, how other Parties may voice their opinion, whether there should be any threshold criteria and how units will have to be issued and tracked. Australia emphasizes that an over-prescriptive approach will not allow sufficient flexibility for Parties to design and implement the market mechanisms that are most efficient, effective and suitable for their particular national circumstances. Japan's submission follows a similar line, favouring both centralized governance schemes similar to the Kyoto Mechanisms for the CDM and decentralized governance schemes for NMMs. Under the latter, countries would be responsible for designing, implementing and securing the transparency of the mechanisms, but would have to abide by certain principles set at the level of the UNFCCC.

An element that remains controversial in the submissions is whether NMMs can be hosted only by developing countries. Most Parties are favourable towards a restrictive use of the mechanism. **Turkey and Russia** argue, however, that they should also be eligible.

Developing countries' positions

The way developing countries consider NMMs is not clear-cut. Among the BASIC[31] states only China has submitted its views in the latest round of submissions. Notably, it wants to limit NMMs to projects and developed countries that adopt legally binding commitments. The other BASIC states have so far remained rather silent, even though they are actively exploring market-based mechanisms at home. For instance, India is currently setting up a Perform-Achieve-Trade (PAT) scheme promoting energy efficiency[32] and Brazil is considering the development of regional carbon markets.[33]

A novel proposal has been made by Colombia. While embracing the ideas of the EU with respect to crediting they suggest that a fixed percentage from the amount of credits that an NMM generates should be cancelled as the host country's contribution to the global efforts to mitigate GHG emissions. Another interesting idea has come from Korea which proposes the crediting of NAMAs on the basis of proxy indicators such as the penetration of energy-efficient appliances for sectors where the reduction of emissions cannot be tracked with sufficient rigour.[34] Saudi Arabia proposes that host countries retain a share of the credits. Finally, there is the case of Bolivia, which refuses any NMMs on principle and accordingly also calls for the abolition of the existing flexibility mechanisms. China[35] and Singapore[36] express the intention to allow the recourse to new mechanisms only by industrialized countries which adopt an internationally legally binding agreement.[37] Colombia, Malaysia and Saudi

[31] Brazil, South Africa, India and China.
[32] Aasrud et al. (2011: 6).
[33] Aasrud et al. (2001: 18).
[34] UNFCCC (2011a: 77).
[35] Ibid. p. 77.
[36] Ibid. p. 82.
[37] Buen et al. (2011).

Arabia voice the fear that market mechanisms allow industrialized countries to take the lowest-cost abatement opportunities ("low-hanging fruit") away from developing countries.

Country	Governance model for NMMs	Governance of CDM
EU	Preference for a more centralized model	Preference for governance under KP
Japan	Bilateral offsets, with MRV criteria to be defined under the UNFCCC	Preference for governance under LCA
Australia	Common framework under the UNFCCC with minimum requirements for NMMs	Preference for governance under LCA
China	Limit NMMs to projects	Preference for governance under KP

Table 1 Countries' views on NMMs and the CDM

3. The GHG Emissions Accounting Framework

3.1. GHG Accounting Rules of the Kyoto Protocol

Up to the end of the first commitment period, developed country Parties to the KP[38] are subject to the common accounting framework adopted by the Marrakesh Accords in 2001.[39] These Accords have operationalized the mitigation targets set by the KP by establishing a uniform international accounting system to assess and track the emission reductions of developed countries. Among the divisive issues that could not be solved in Cancún is the set-up of international accounting rules to be applied post-2012.

Under the KP the total amount of GHGs a developed country may emit during the first commitment period is called the 'assigned amount'. By using the market mechanisms, the country can increase the size of the assigned amount to ensure that its emissions do not exceed it. While International Emissions Trading (IET),[40] allows the trade of assigned amount units (AAUs) between developed countries, JI allows developed countries to acquire emission reduction units (ERUs) resulting from specific project-based emissions reductions within another developed country. Certified emission reductions (CERs) from CDM projects are added to existing AAUs and thereby contribute towards increasing the amount of allowance units in the international system. To be eligible to transfer units under these mechanisms, Kyoto Parties must fulfil certain requirements. In particular, they have to put

[38] Annex B Parties. The United States has not ratified the KP and thus is not subject to these rules.

[39] Under the KP, developed countries have to account for their emissions and emission reductions in accordance with a set of common rules that apply inter alia to the coverage of sectors and gases, the use of common metrics, land use, land-use change and forestry (LULUCF) accounting, mechanisms and carry-over of units to the next commitment period. They are required to translate limitation or reduction commitments into absolute quantified emissions units to ensure accurate tracking of emissions levels and demonstrate compliance.

[40] Art. 17 KP.

in place a national system for the estimation of emissions as well as a national registry. Moreover, they must submit a yearly inventory and calculate and record AAUs. [41]

AAUs are held in national registries hosted by each Party to the KP. These registries are linked to one another and to the International Transaction Log (ITL), a database that verifies and records all transactions of GHG units. The UNFCCC hosts the CDM Registry into which Certified Emission Reductions (CERs) are issued, and which is also linked to the ITL.

3.2. Current Discussion on post-2012 GHG Accounting

No detailed accounting framework has been elaborated so far for the pledges "taken note of" by Parties in the Cancún Accords under the AWG-LCA. The Copenhagen Accord states in relation to developed country targets that the accounting should be rigorous, robust and transparent, but these requirements were not reproduced in the Cancún Accords. Current negotiations so far do not provide any guidance relating to a robust accounting system for the assessment and tracking of the emission reductions resulting from the pledges made.[42]

Notably, key assumptions as to which GHGs and sectors are covered, the extent to which domestic and international emission credits and LULUCF are built into the pledge and how they will be accounted for, have not been communicated. Further, there is no information as to how international emission reduction offsets should be calculated, what procedures will be used to ensure that emission reductions achieved in developing countries are not double-counted and whether surplus emission allowances remaining from the first commitment period of the KP are part of the pledge. Finally, specific information contained in the current accounting framework of the KP[43] is lacking.

In the AWG-LCA discussions, no consensus has so far emerged as to whether developed countries should abide by some or all of the accounting provisions of the KP for emission reductions, or develop similar harmonized accounting provisions.[44] A number of developed countries, including, but not limited to the US, are privileging a post-2012 framework that enables them to use their own "performance" accounting frameworks without a common allowance unit.

A promising new approach for increased MRV and transparency of both developed and developing countries that could be the basis of a future accounting system is however provided for by the biennial update reports foreseen by the Cancún Agreements.[45] Biennial reports from developing countries, in particular, will be made subject to international consultations and analysis (ICA) by the Subsidiary Body for Implementation (SBI). Moreover, for developing countries there will be domestic MRV of unsupported actions and international MRV of their actions which receive international support. These provisions build on existing provisions from the UNFCCC and the KP and could provide important

[41] The concept of assigned amount units provides a means to rationalize the percentage reduction pledges made by Parties, in addition to providing the basis of a tradable GHG allowance unit. See Prag et al. (2011: 9).

[42] In particular the US was opposed to the appearance of the word "accounting".

[43] This information relates in particular to the use of metrics (i.e. the GWP[43]), the base year, registry requirements and transaction procedures, modalities regarding the compilation and accounting of emission inventories, assigned amounts, and the definition of national systems as well as criteria for cases of failure with respect to the submission of information relating to estimates of GHG emissions and eligibility requirements.

[44] Levin et al. (2010: 3).

[45] LCA-Agreement, par. 40 and 60.

new sources of information with respect to inventories and mitigation efforts, especially those of developing countries.

3.3. Implications of post-2012 GHG Accounting Options for the Establishment of NMMs

This section discusses the implications of post-2012 GHG Accounting Options for the establishment of NMMs distinguishing three scenarios, a KP-Scenario, a KP-like scenario and an LCA Scenario.

KP Scenario

At present, it is difficult to predict what the post-2012 accounting framework will be. Japan, Russia and Canada continue to signal a negative position on the KP. The EU maintains its position, which is that it could agree to a second commitment period under certain conditions. As the end of the first commitment period comes closer, however, it is becoming quite clear that there is likely to be a gap after 2012.

In the case that a new commitment period is agreed upon by some or all Parties, the current GHG accounting rules under the KP would be maintained, probably with certain amendments.[46] As a result, the ITL would continue to operate under the control of the UNFCCC and the Parties adhering to the KP would have registries subject to UN specifications and issue allowances based on the AAU system. These Parties could continue to trade allowances between their registries (via the ITL).[47] UNFCCC institutions would remain responsible for the oversight and the issuance of credits from the CDM and possibly from NMMs.

Developed countries that decide to renounce a second commitment period would quit the system, but would continue to be subject to the rules of the UNFCCC, applicable currently to the US. This implies that they would continue to be obliged to provide national communications and national inventory reports as well as biennial reports as agreed upon in Cancún. They would however no longer be subject to an international review of their inventories as has been the case under the KP.

KP-like scenario

The renouncement of a second commitment period of the KP by all Parties would probably put an end to its international accounting framework, unless Parties agree to take over all or a substantial part of its accounting rules under the LCA-track. For instance, they could agree to keep the ITL and national registries subject to the criteria of the KP and an international review process of inventories and registries, but to drop the legally binding mitigation targets and the corresponding compliance procedure. Under this scenario, the integrity of the KP accounting system, as well as the role of the UNFCCC as the main regulator for international credits, could be safeguarded. Further, it would probably improve the prospects of getting more and more countries to adhere to strict international accounting rules.

LCA-scenario

If Parties decide to renounce the KP accounting framework altogether, this will eventually entail the abandonment of the ITL and a common allowance unit for all developed countries after the "true-up

[46] See revised proposal for the amendments of the KP text prepared by the Chair, available on the Internet at http://unfccc.int/resource/docs/2010/awg15/eng/crp04r04.pdf.

[47] See for an extensive discussion of the various post-2012 scenarios Prag et al. (2011: 22ff).

period" which will last until 2014/15.[48] Under this scenario, commitments by developed countries would be based on the pledges made under the LCA and their achievement would have to be demonstrated through the current UNFCCC system of inventory reporting, as amended by the current LCA negotiations.

Conclusions

Under both the "KP scenario" and the "KP-like scenario" the common unit allowance system would be prolonged. This has clear advantages if a sufficient number of the major emitting countries are bound by meaningful economy-wide mitigation pledges.[49] By backing-up domestic compliance systems with international compliance units trust in the demonstration of mitigation pledges by Annex I countries will be enhanced. Finally, it provides an anchor for the value of units that helps to prevent the divergenceof standards and facilitates the tracking of unit transactions, as all units belong to the same registry system.[50] If the principles for the establishment of an SCM are defined in Cancún, sufficient safeguards will have to be put in place to guarantee a high degree of environmental integrity of its credits. If this is not done, the global carbon market may be seriously impaired.

In the LCA-scenario, the redeeming of pledges will be demonstrated through the reporting of inventories without a common international carbon unit system. If there is little international supervision of the pledges, the need for strict control of the quality of credits generated by an SCM may seem less compelling. On the other hand, one could argue that the definition of a strict overview for NMMs is all the more important to avoid massive free-riding and further loopholes in the system. Furthermore, it is probably not necessary to have an international accounting framework already in place when adopting a general framework for the governance of NMMs. Indeed, the KP mitigation targets for developed Parties were agreed upon by Parties in 1997, before the international accounting system had been finalized. Thus the clarification process of pledges and the set-up of new international accounting rules could take place concurrently with the establishment of a new governance system for international credits. A decision by Parties in Durban to establish NMMs and to start working on their design would in this case transmit a positive signal that Parties still believe in the necessity of setting up common accounting rules and are willing to clarify further the pledges taken note of in Cancún. Moreover, the set-up of a framework for NMMs would probably encourage developing countries which want to use NMMs to elaborate more sophisticated MRV rules and support the process of establishing the rules for International Consultations and Analysis (ICA).[51]

4. Governance Options for a Sectoral Crediting Mechanism

In case international discussions focus on NMMs more generally, in this section we want to discuss possible governance models for the establishment of a Sectoral Crediting Mechanism (SCM). This term is used to refer to a mechanism under which credits are issued for the difference between actual emissions of a defined sector and a pre-established baseline.[52] As under the CDM, credits are generated ex post after evaluation of the level of emissions against the agreed baseline. As the baseline

[48] The true-up period is a period lasting 100 days after the reviews of emissions information from the commitment period have been finalized

[49] See Prag et al. (2011: 23 ff).

[50] Ibid.

[51] LCA Agreement, par. 63.

[52] See Schneider and Cames (2009: 7).

is not binding, but is a so-called "no-lose target", no sanctions will be applied if the actual emissions are not reduced below the baseline.

If implemented successfully, the SCM may provide incentives for sector-wide transformations of the economy.[53] This, however, will only be the case if the government, to which the credits will be attributed if the target is met, pre-finances climate-friendly policies and passes on the incentives to the sector concerned. As the future revenue streams are uncertain this might be problematic for some countries.[54] New strategies providing upfront finance will thus have to be developed.[55] To provide sufficient incentives for private sector players to engage in emission reductions some authors suggest that credits should be attributed directly to the latter, with the government guaranteeing to make up for any shortfall.[56]

A key issue that will have to be addressed in Durban is what must be agreed upon at the international level to ensure that an SCM works effectively and is environmentally robust.[57] Given the impending end of the first commitment period, it is imperative to set the basic elements of a future framework as soon as possible. While modalities and procedures can be elaborated at a later stage, it is important that Parties agree on the objectives and the principal safeguards for ensuring the environmental integrity of an SCM.

Though many Parties have expressed in their submissions that they are favourable towards a variety of governance models, few detailed proposals have so far been tabled as to how these models should be implemented. Moreover, few discussions have taken place with respect to the role the UNFCCC might play in the coordination of the preparation of SCMs. In the following section we want to address these gaps. First, we discuss the pros and cons of various governance options for the SCM and second, we give a short overview of the "market readiness initiatives" that have been taken so far and present some proposals on how these could be optimized by a more pro-active role of the UNFCCC.

4.1. Centralized versus Decentralized Governance Model for SCMs

Several governance options for SCMs are currently being discussed in the negotiations, ranging from centralized models with a strong role for the UN to more decentralized ones, where only minimal requirements are set at the UNFCCC level. A completely "bottom-up" vision with no international oversight at all seems to be supported by the US. For instance, California intends to establish a purely domestic-based procedure for the recognition of sector-based credits. Japan is strongly advocating a more decentralized model of governance within the UN framework with only minimum standards and guidance from UNFCCC institutions. The EU proposes either a more centralized governance model, with a "Special Supervisory Board" similar to the CDM Executive Board, or a more decentralized model in the form of "Report and Review".[58] In the following we define centralized and hybrid governance models as schemes governed fully or partly by the UN and decentralized models as

[53] Sterk (2010: 7).
[54] See Dransfeld et al. (2011).
[55] Sterk (2010: 8).
[56] Dransfeld et al. (2011).
[57] See Schneider and Cames (2009: 9).
[58] UNFCCC (2011a: 48 ff.)

schemes defined outside the UN framework. In contrast to a decentralized model, a hybrid scheme must thus still fulfil certain minimum criteria set at the level of the UNFCCC.

A Centralized Governance Model

A centralized governance model would resemble the CDM or JI Track 1 in several respects. Major governance functions, including oversight of methodologies, baselines, compliance and the issuance of credits would however remain under the control of the UNFCCC. The advantages and disadvantages of the different models are discussed below.

Advantages

A centralized governance model would have major advantages:

- It could be embedded neatly in the KP rules.
- It would build upon past experience.
- It would be easier to compare the levels of ambition between all Parties across the establishment of baselines than it would be with a decentralized model.
- Having a commonly agreed unit would make the establishment of a global carbon market easier.

Disadvantages

- A new mechanism with strong UN governance would be complex process to set up. It would also create an administrative burden, if similar complex governance structures to those under the CDM were to be established.
- A new mechanism, which has uniform centrally approved design elements, may offer less flexibility to take into account specific host country circumstances.

Hybrid Governance Models

A hybrid governance model would only set minimum criteria, eg for MRV, or on tracking of units to avoid double counting and reporting of use of credits under the UNFCCC. Details would be part of a bilateral agreement between the host and the investor country. Based on more or less standardized UNFCCC principles, the host country would keep a strong role in designing, implementing and securing the transparency of the mechanisms.

Advantages

- One of the main advantages of bilateral agreements within a hybrid model is that they are easier to establish and can be built upon the existing cooperation between countries.
- Methodologies for calculating and monitoring emission reductions can be simplified and do not need the approval of the UNFCCC institutions or bodies.
- Various different approaches (going beyond what is possible under the CDM) for emission reduction activities in developing countries could be taken; opportunities that the CDM has not tapped could be targeted.
- Bilateral agreements could better accommodate host country priorities.

Disadvantages

- Less uniform international credits make it difficult to compare targets and pledges and may lead to more fragmented accounting post-2012.
- If the differences in environmental integrity of the units created are too large, international trading will be limited. Exchange rates may be established to solve this problem.
- Competition between systems may lead to a "race to the bottom", reducing environmental integrity.

The establishment of an SCM with a hybrid governance model could be made dependent on the fulfilment of eligibility criteria, similar to those that have been defined for participation in the International Emissions Trading scheme under the KP. This could include, for example, a credible system to estimate GHG emissions and removals by sinks, or the submission of national inventory reports or transparent and credible MRV provision. As in the Kyoto framework, the information submitted by the host countries would be internationally assessed by an expert review team that decides whether the eligibility criteria have been met.

In hybrid governance models some of the Kyoto rules could possibly be taken over. Minimum criteria and standards, eg those for MRV and baseline setting agreed under the UNFCCC, would make units from crediting mechanisms and the underlying accounting rules for mitigation targets comparable to a certain degree. The definition of these criteria (which may be part of the eligibility criteria) will be critical for the environmental integrity of SCMs. On the one hand, hybrid models aim to give more flexibility than centralized models because they can be better adapted to host country circumstances. On the other hand, this may come at the price of a significant loss of environmental integrity. As Track 1 JI has shown, assigning too much responsibility to host countries without international guidance may lead to a lack of harmonization and of transparency (see chapter XX).

When evaluating the merits of the various governance options, one has to be very much aware of what is at stake. The SCM must lead to "a net decrease and/or avoidance of global greenhouse gas emissions". If the baseline is set too high, an SCM will produce a lot of "hot air" and thereby put at risk the very idea of an international carbon market. This risk is all the more significant as the "seller" country has a clear incentive to inflate the number of credits to increase its revenues and the buyer to buy cheap credits.[59] Also, compared to the CDM, a single SCM project is likely to generate a far more important amount of credits, as an SCM concerns the emissions of a whole sector. It is hence imperative that the baseline setting process is structured in a manner that safeguards high environmental integrity of the mechanism.

4.2 A hybrid model for a Sectoral Crediting Mechanism: plans by Japan

Japan proposes a bilateral credit mechanism which would be complementary to a reformed CDM. It launched a tender on 1 April 2011 for bilateral offset projects. It is not yet entirely clear to what extent Japan wants certain elements of the mechanism to be defined at the UNFCCC level. The mechanism is aimed at targeting those sectors that could not be targeted efficiently by the CDM but have a large reduction potential and are of strategic importance for the buyer and host country, such as transport,

[59] Schneider and Cames (2009: 18).

while methodologies and provisions for MRV would be simplified compared to the CDM.[60] Furthermore, Japan emphasizes that a new mechanism should better reflect the national circumstances of the host countries. In addition, new mechanisms should promote the transfer and dissemination of low carbon technologies, products and services to developing countries.

For its proposed new mechanism, Japan wants a more decentralized governance structure than for the current KP mechanisms but would still like to involve the UNFCCC to guarantee a certain degree of environmental integrity. Host countries would be responsible for designing, implementing and securing the transparency of the mechanisms, following basic guidelines set out by the COP. Principles agreed by the COP would include MRV of the mechanism as well as provisions to avoid double counting between different mechanisms that have to be installed at the international level.

The following are possible MRV elements may be based on international MRV guidelines as proposed by the Japanese government[61]

- schedule for the implementation of mitigation actions
- organization of implementation
- potential GHG reduction (amount of GHG reduced)
- total cost
- method of estimating reduction in amount of GHG
- other information (as appropriate, such as co-benefits)

Japan also emphasizes that a new bilateral offset mechanism should be consistent with the overall post-2012 framework, including a new accounting framework.

Starting in 2010, Japan has undertaken feasibility studies (coordinated by the Global Environment Centre Foundation) of projects involving new mechanisms with the aim of accumulating knowledge and experience of the new mechanisms in Thailand, Laos and Indonesia. In Thailand a feasibility study of comprehensive NAMAs for waste and wastewater management was carried out, in Laos, feasibility studies of NAMAs for transportation management and in Indonesia a feasibility study of NAMAs for peatland management. Existing CDM methodologies were the blueprint for some of the projects. Certain provisions were however modified and somewhat simplified. The Japanese Ministry of the Environment has decided to expand its new mechanism fast start programme in 2011. It is expected that nearly 30 feasibility studies will be carried out covering various sectors and activities.[62]

4.3 A decentralized model for a Sectoral Crediting Mechanism: plans by California

The approval of the design of a cap-and-trade system by the Californian Air Resources Board (CARB) in December 2010 paved the way for its implementation from 2013.[63] The scheme is part of the

[60] Japanese Ministry of Environment (2011a).

[61] Japanese Ministry of Environment (2011b).

[62] Japanese Ministry of Environment (2011a).

[63] The system will include electricity production (as well as imports) and large industrial facilities (>25,000 metric tonnes of carbon dioxide per year). In line with the overall Western Climate Initiative (WCI) design starting in 2015, distributors of transportation fuels, natural gas, and other fuels will be included. The system will establish a declining aggregated emissions cap on the sectors included. The cap starts at 165.8 million allowances in 2012, which is equal to the emissions forecast for that year. The cap declines by approximately 2 per cent per year in the initial period (2012–2014). In 2015, the cap increases

Western Climate Initiative (WCI) that sets the general framework for cap and trade schemes in the participating jurisdictions. The Californian system will allow a credit limit of 8% of the compliance obligation and allows reducing emissions from deforestation and degradation (REDD) and sector-based credits. In California, more credits can be used than is allowed in the WCI programme design, since early use of a cost containment reserve may lower the cap in subsequent years.[64]

All credit types allowed, both domestic and international, have to be issued by the CARB; the Californian scheme does not allow international offsets without CARB improvement. The governance and oversight of credits from other countries is thus independent of future developments under the UNFCCC. The proposed regulation provides that the CARB may consider for acceptance compliance instruments issued from sector-based offset crediting programmes that meet the requirements set and originate from developing countries or from subnational jurisdictions. All offset credits, domestic or international, must be verified by a CARB-accredited verifier. The proposed regulation provides requirements for a verification programme that are consistent with international standards, but are subject to CARB oversight. This oversight includes verifier accreditation, verification body accreditation, requirements for verification services, and conflict-of-interest requirements.

Each sector-based crediting programme will need to be approved by the CARB, and its review will include a public consultation process pursuant to the Administrative Procedure Act[65]. The staff report accompanying the proposed regulation anticipates that the Board would limit itself to working with the subnational jurisdictions that have the most advanced and promising infrastructure necessary to develop sector-based programmes. The staff report also proposes that the first sectors to be considered for approval be developed through existing partnerships such as the Governors' Climate and Forests Task Force (GCF) and the International Carbon Action Partnership (ICAP). The staff report notes that REDD is likely to be the first type of sector-based crediting programme brought before the Board for consideration[66].

Programmes must establish a business-as-usual, reference-level baseline that accurately reflects the sector's historical and/or potential future GHG emissions for that jurisdiction's entire sector. The programme would need to agree on an allowable level of deviation from the reference-level baseline, or crediting baseline, which is achieved through the jurisdiction's direct policies and mitigation actions. Sector-based credits could then be used for compliance once GHG emissions were reduced beyond the programme's established crediting baseline. Emissions reductions must be verified by a third party to ensure that the reductions are real, additional, quantifiable, and permanent. The programme must also include a robust and transparent system for inventory, monitoring, and reporting to track and evaluate GHG reduction activities showing the sector's emissions performance over time. The programme will also need to establish an accounting mechanism that has the ability to reconcile accounting at both the project and sector levels, as well as nest into a national accounting system, if one exists. The regulation does not refer to the UN accounting system. A programme must also

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to 394.5 million allowances to take into account the expansion in programme scope. The cap declines at approximately 3 per cent per year between 2015 and 2020. The 2020 cap is set at 334.2 million allowances; allowances will be distributed through a mix of direct allocation and auctioning. (Mehling et al. 2011)

[64] Californian Air Resource Board (2010).

[65] Californian Air Resource Board (2010).

[66] ibid

include a registry, mechanisms for credit retirement, and protection against reversals where applicable[67].

4. 4 Coordination of "Market Readiness Initiatives"

Unlike developed countries which have gained significant expertise in preparing GHG inventories and establishing national and sectoral emission projections, most developing countries have as yet little experience in such activities.[68] More advanced developing countries, like Mexico, which have already submitted four national communications, have stressed the difficulties of making robust emission projections. Moreover, beyond data needs, analytical expertise will have to be built up to synthesize and transform the data into baselines.

To address both the need for data gathering and for improved analysis, many developed countries have supported capacity-building initiatives in developing countries.[69] Many of them are bilateral initiatives but there are also multilateral programmes such as the World Bank's new "Partnership for Market Readiness" and the "International Carbon Action Partnership".[70]

Moreover, there is a series of international guidelines for the development of sectoral baselines, starting with the IPCC guidelines for national inventories,[71] followed by sector-specific methodologies such as the World Resources Institute–World Business Council for Sustainable Development (WRI-WBCSD) Greenhouse Gas Protocol.[72] Moreover, certain industry groups have developed protocols of which the Cement Sustainability Initiative (CSI) is one example.[73] Protocols of this kind show that international federations can directly contribute to market readiness. However, as the case of the baseline methodology proposed by the CSI – which was rejected by the CDM Executive Board because the benchmark was considered too lenient – shows that the stringency of industry-led approaches is often insufficient. Another model is provided by certain CDM methodologies, such as the methodology for grid-based electricity generation that accounts for average emissions of the grid, or the standardized baselines being elaborated by the CDM Executive Board and the UNFCCC Secretariat.[74]

The World Bank points out that a more centralized and coordinated approach should be adopted which would allow the optimisation of limited resources and ensure the sustainability of capacity-building efforts.[75] This is supported by other experts who stress that, with the exception of REDD, very little detailed sector-specific discussion on mitigation options has taken place at the level of the UNFCCC.[76] The question thus arises whether the UNFCCC should coordinate the efforts to improve

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67 ibid.

[68] This is inter alia due to the difference between the obligations under the UNFCCC and the KP with respect to MRV.

[69] Aasrud et al. (2010: 6).

[70] See Aasrud et al. (2011: 14).

[71] However, we also need to recognize that there are more opportunities that the CDM has not tapped. E.g. domestic emission trading, offset schemes, policy-based mitigation activities (low carbon development policy), etc.

[72] The latter provides guidance on the development of inventories and is designed for specific industries or as a cross-sector tool. See Aasrud et al. (2010: 18).

[73] See Aasrud et al. (2010: 19).

[74] See Hayashi et al. (2010a) for a discussion of principles for baseline standardisation.

[75] Aasrud et al. (2010: 37).

[76] Wooders (2011: 10).

available data and domestic capacity to improve market readiness and ensure that the sector-specific knowledge feeds into the negotiation process. Experience from the CDM has shown that bilateral capacity-building has often led to overlaps and has not necessarily delivered the desired results.[77]

While the design of an SCM proposal, like the preparation of NAMAs more generally, should remain a country-driven process, some technical assistance with their preparation and closer co-ordination of existing initiatives and finances might be valuable. Moreover, the consolidation of guidelines and the convergence towards more uniform international standards could improve the consistency and transparency of GHG reporting around the world and facilitate market readiness.[78] The question then is what kind of services should and could be made available, who would pay for them and which institution(s) would be the most appropriate to provide these services.

So far, the Parties have not made it clear which institutions will finance enhanced capacity-building support for developing countries. The EU suggests that funds should be made available through the operating entities of the financial mechanism of the UNFCCC and through various multilateral and bilateral channels.[79] To ensure sufficient coherence of the support for market-readiness initiatives, care should be taken to ensure that support is provided transparently and that a minimal level of co-ordination across the various financial resource flows is ensured. At a later stage, it could be envisaged that a share of proceeds from the credits generated by such mechanisms would provide the financial support.

The cross-cutting nature of capacity-building initiatives makes it difficult to assign the responsibility for market-readiness initiatives to a single institution. It would however be useful to designate one coordinating body, operating under the authority of the COP, to be responsible for the creation of a virtual hub and the dispatching of information. To be successful, such a body would have to have at its disposal sufficient staff and should not operate in isolation from other institutions inside or outside the UNFCCC. Indeed, only if close cooperation can be established among all actors involved in the design and implementation of climate policies can market-readiness activities be streamlined and the effectiveness of support measures be enhanced.

One option would be to entrust this task to the registry created by the Cancún Agreements, the aim of which is to facilitate the matching of NAMAs seeking support with the support available. It is, however, not clear what kind of activities the registry will undertake. While the EU supports a "light-touch facility" that is limited to the establishment of a database, many developing countries favour a more active role of the registry both with regard to the establishment of NAMAs and the channelling of climate funds.[80] Another possibility would be to assign the responsibility for supervising and co-ordinating market-readiness activities to the Secretariat. This would, however, require that the human resources of the Secretariat be significantly upgraded. Finally, a new body could be created which would be entrusted with the coordination of market-readiness initiatives for NMMs.

[77] Okubo and Michaelowa (2010).
[78] Aasrud et al. (2010: 18).
[79] See Strawman on capacity-building of the EU for the Cancún summit (unpublished).
[80] The Technical Working Group on the International Architecture for Climate Finance (2010).

5. Existing Centralized and Decentralized Governance Models

5.1. The CDM – a Model for Centralized Governance?

This chapter outlines how a centralized governance model for an SCM could be designed. When discussing how centralized oversight of the SCM could be designed, lessons from the CDM[81] can and should be drawn. While initially, the CDM faced serious problems in guaranteeing the environmental integrity of its credits due to a lack of support and the mistaken belief that independent audits would identify the black sheep, it has substantially increased the stringency of checks over time.[82] Also, representing the nucleus of an international carbon market, it has contributed towards raising awareness of climate change and facilitated the establishment of the EU ETS by providing "cheap" international credits.[83] Moreover, an international authority seems to be less liable to succumb to political pressure and horse-trading than a national one.[84] Finally, through the development of almost 200 baseline and monitoring methodologies, which serve as a model for other national or regional GHG trading schemes, it has helped increase the understanding of mitigation measures and initiated a universal learning process.[85]

An SCM has several similarities with the CDM. Both mechanisms bear a significant risk of generating "false" emission reductions, which justifies the set-up of strong institutional and procedural safeguards to ensure environmental integrity. On the other hand, there are also some major differences.

This chapter proceeds as follows. First, the main differences between the CDM and an SCM, in particular the significantly increased role of the host country, are highlighted. Second, the legal basis and the fundamentals of the project cycle of the CDM are recalled. Third, we examine whether the approach developed for the CDM could apply *mutatis mutandis* to an SCM and where other options should be envisaged.

Main Differences between the CDM and an SCM

Whereas the principal aim of the CDM is to contribute to leveraging private funds for well-defined projects that of an SCM is to incentivize mitigation measures for an entire sector. The potential number of credits an SCM may generate will thus usually greatly exceed those of a CDM project. The setting of a credible baseline is therefore far more critical under an SCM. In contrast to the CDM, it is not a private entity which submits a project and receives the credits in the case of its successful implementation, but the public authorities.[86] Accordingly, the involvement of the host country government in the establishment of a SCM is fundamentally different from its contribution to a CDM project.

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[81] The CDM, which was designed with the dual aim of helping developing countries to achieve sustainable development and of assisting developed countries in achieving compliance with their mitigation targets, allows developed countries to invest in projects that reduce GHG emissions in developing countries. It is governed by Article 12 of the Kyoto Protocol and the rules of procedure adopted by the so-called "Marrakesh Accords" ("CDM rules"). See de Sépibus (2011: 4).

[82] See Cozijnsen and Cooren (2009), Michaelowa (2009).

[83] Figueres and Streck (2009: 3).

[84] Flues et al. (2010).

[85] Figueres and Streck (2009: 3), Michaelowa (2005).

[86] This is the case for the model as proposed by the EU. Some authors suggest however that emitters could be allocated credits directly, with the government guaranteeing to make up for any shortfall. See Dransfeld et al. (2011)

Public authorities will have to make significant efforts to ensure the "market readiness" of the sector. This includes, in particular, the definition of the scope of the mechanism, which would include the sources and/or installations to be covered, and the collection of data to identify historical emissions and to predict future emissions, as well deciding how a sound MRV system might be set up.[87]

To define a sector, the host country will, in particular, have to assess the costs that will be incurred in making the required mitigation effort and estimate the revenues it might gain through the sale of emission credits. Ideally, it should plan, in the preparatory phase, the way in which any potential revenue from the sale of credits could be allocated domestically and how the operators covered will cooperate in the effort.[88]

With the exception of state-run industry sectors, the gathering of robust data will in most cases be a far more challenging task than for a CDM project developer. As the implementation of the pilot phase of the EU ETS[89] has shown, the collection of the necessary information is a cumbersome process depending to a great extent on the close and active cooperation of the sectors covered.

The Project Cycle of the CDM

The oversight of the CDM is provided by the Executive Board (EB), which is composed of ten members and ten alternate members designated by the CMP. The main task of the EB is to supervise the registration of projects. To carry out its numerous duties, it is assisted by the UNFCCC Secretariat and many groups of experts, in particular by the Technical Committee for Methodologies (the "Meth Panel") and the "Registration and Issuance Team" (RIT).

When establishing the CDM, Parties were aware of the risk that the CDM could lead to "false" emission reductions, as all parties to a CDM transaction have an interest in inflating the level of emission reductions resulting from a project.[90] A series of criteria aimed at safeguarding the environmental integrity of the mechanism have thus been set up. A CDM project can only be approved if the emission reductions are "additional" with respect to the emission scenario that would have existed in the absence of the project ("baseline"). In other words, project developers have to demonstrate that in the absence of the CDM the project would not have been implemented.[91]

The CDM project cycle is organized as follows. [92] A project developer has to prepare a Project Design Document (PDD), in which he or she indicates inter alia the baseline of the project and the methodologies that will be used for monitoring the emission reductions. Once the PDD is completed, it is submitted for approval to the host country's Designated National Authority (DNA), which has to assess whether the project contributes towards the sustainable development of the host country. The completed PDD is made public for thirty days to allow the input of comments by the public and must then be validated by an accredited Designated Operational Entity (DOE), hired by the project

[87] Aasrud et al. (2010: 10).
[88] Aasrud et al. (2010: 25).
[89] The pilot phase of the EU ETS lasted from 2005 to 2007.
[90] Greiner and Michaelowa (2003).
[91] Michaelowa (2009).
[92] It follows the "Modalities and procedures for a clean development mechanism" as defined in Article 12 of the KP. The latter were adopted by the 7th session of the United Nations Framework Convention on Climate Change Conference of the Parties (UNFCCC COP) held in Marrakesh, Morocco, in December 2001 and confirmed by the 1st session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (hereafter "COP/MOP") in Montreal in December 2005; FCCC/KP/CMP/2005/8/Add.1 Decision 3/CMP.1.

developer, which examines whether the proposed project meets all the requirements. At the end of the project cycle, the PDD is submitted to the EB which may approve, reject or ask the proposers to amend and resubmit the project. After the implementation of the projects, the DOEs verify the amount of emission reductions based upon which they make a recommendation to the EB, which is responsible for the issuance of the credits.

The CDM has been the object of significant criticism from both business and academia. On the one hand, researchers and NGOs have criticized the lack of additionality of a significant share of projects, the insufficient contribution to sustainable development and the unequal geographical distribution.[93] Moreover, many experts have stressed the weakness of its governance, in particular the conflicts of interests of the DOEs, which are chosen and paid by the project developers, and the qualifications and time constraints of the EB members who often have concurrent functions within the environmental ministries of Parties. Project developers and business organizations, however, consider that the EB has been too stringent in its assessment of additionality and complain about the long delays in the approval of methodologies and the assessment of projects[94] as well as about the insufficient documentation and justification of its decisions. Last but not least, the additionality of individual projects is both difficult to prove and to validate, as the baseline is by definition counterfactual.[95]

To address the growing criticism, the CMP[96] has undertaken numerous reforms.[97] In particular, the EB has stepped up its level of scrutiny by establishing the Registration and Issuance Team (RIT), which is further assisted by the Secretariat. Also, Parties are currently discussing the possibility of introducing a process for appeals against the decisions of the EB.[98]

The application *mutatis mutandis* of CDM rules to the SCM

Drawing on the experience with the CDM, we show in the next section what an SCM project cycle could look like under a centralized governance model. We will, in particular, discuss whether and to what extent the CDM rules on the methodology and baseline-setting processes, which are crucial to safeguard the environmental integrity of the SCM, can be applied *mutatis mutandis*. Finally, based on the complaints about the inadequate institutional set-up of the CDM, we make some proposals for changes to the EB and the verification process.

The Establishment of Baseline and Monitoring Methodologies

Before a CDM project can be registered with the EB, project developers have to establish a baseline and a monitoring methodology. The baseline is a means to allow project developers to quantify the emissions that would have been created in the most plausible alternative scenario to the implementation of the project activity. The monitoring methodology sets out the way in which project proponents have to develop and implement a monitoring plan in order to gather the required data and to calculate the emission reductions from the project.[99] Project developers may use baseline and

[93] de Sépibus (2011).
[94] Figueres and Streck (2009: 2)
[95] Mueller (2009).
[96] The Conference of the Parties serving as the Meeting of the Parties of the Kyoto Protocol.
[97] See Hession (2011).
[98] UNFCCC (2011).
[99] CDM rules, par. 38 ff.

monitoring methodologies that have been previously approved by the EB or they can propose new methodologies.

When preparing a new methodology, project developers have to select from three approaches the one deemed most appropriate for their project.[100] Moreover, the EB has published technical guidelines, describing in detail how methodologies have to be designed.[101] So far, the EB has approved more than 100 methodologies. As methodologies are developed with a specific CDM project in mind, they usually refer to specific conditions in a given set of policies. However, an increasing number of default values are now available and several methodologies rely on benchmarking. In those cases where the main parameters can be expressed by a mathematical formula, the same methodologies can be used for other projects.[102]

To allow more methodologies to be used by numerous project developers, the CMP has mandated the CDM EB to establish standardized baselines. These baselines should allow the application of standardized values and/or approaches to all projects meeting certain criteria.[103] This approach is generally welcomed by project developers as it decreases project costs and improves the access to CDM projects.

In the case of an SCM, the baseline and monitoring methodologies should provide inter alia information on how the host country defines the scope and calculates the baseline of the mechanism, which installations or sources are covered, and how emissions are monitored and verified. The Cancún Agreements set certain framework conditions, such as the necessity to stimulate emission reductions across broad segments of the economy, but provide little concrete guidance on the set-up of methodologies. The criteria laid down under the CDM and the technical guidelines developed by the EB do thus provide a good starting point but would have to be tailored to fit the different goal and the larger scope of the SCM.

The Approval of Baseline and Monitoring Methodologies by the EB

If a new methodology is adopted, it has to be submitted to the EB for approval. The EB then makes its decision after having received recommendations from the Meth Panel. As the members of the EB have neither the time nor the competence to examine thoroughly the proposed methodologies, the technical assessment made by the Meth Panel is crucial. The experts selected by the Meth Panel undertake a desk review to appraise the validity of the proposed new methodology.[104]

The question whether the current set-up for the approval of CDM methodologies, in particular the desk review carried out by the Meth Panel, should be extended to the SCM must be evaluated with care. As the experience with the CDM shows, the Meth Panel experts face important information asymmetries

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[100] The first approach is based on actual or historical emissions and is applicable to projects where the most likely hypothesis is that in the absence of the proposed CDM project, existing activities would have been continued. The second approach calculates a baseline which represents the most attractive course of action in economic terms.[100] The third approach specifies that the baseline is to be derived from the average emissions from similar projects undertaken in the previous five years and whose performance is in the top 20% for their category. See CDM rules, par. 48.

[101] UNFCCC, CDM Executive Body 24, Annex 16, Technical Guidelines for the Development of New Baseline and Monitoring Methodologies. See Michaelowa (2005) for a discussion of how rules have evolved.

[102] See Hayashi et al. (2010a).

[103] See Hayashi et al. (2010).

[104] CDM rules, par. 38.

and are often not familiar with the economic and social conditions of the host country. It is hence questionable whether a pure desk review is an appropriate procedure for the evaluation of SCM baseline and monitoring methodologies.

One possibility to address this problem is to complement the desk review with an in-country assessment,[105] the communication of questions to the host country and/or the invitation of representatives of the host government to interactive meetings. A combination of these approaches can also be considered, ensuring that the host country is consulted more than once during the review. Furthermore, business associations and experts on the sector concerned, competitors, other stakeholders and NGOs could be invited to these meetings.

The advantage of an approach that is more interactive and includes a wider spectrum of stakeholders in a more pro-active manner, is that it would allow the Meth Panel to enhance its understanding of the particularities of the sector concerned and the host country. Moreover, a broader exchange of views with a wide array of stakeholders might contribute to enhancing the capacity-building process in the host country. On the other hand, such a process carries the risk that the assessments would become more costly and that the host country could exert pressure on the experts. Given the significant involvement of the host country in the preparatory work of an SCM, the ensuing political sensitivity and the potentially high quantity of credits that SCMs may generate, a more thorough and deliberative approach seems justified. Sufficient safeguards will however have to be provided to preserve the integrity of the assessment process and the independence of the experts.

The Establishment of the Baseline

The baseline for a CDM project activity is the scenario that reasonably represents GHG emissions that would occur in the absence of the proposed project activity.[106] As a baseline refers to a hypothetical reference case that is based on assumptions that cannot be monitored or verified, multiple baselines are possible in theory.[107] To limit the subjectivity in setting a baseline, the CDM rules set out a number of criteria. For instance, a baseline must be established in a transparent and conservative manner, it has to be project-specific and must take into account relevant national and/or sectoral policies and circumstances.[108]

So far, no guidelines exist at the international level to define a sectoral baseline more thoroughly. The difficulties of setting a plausible sectoral baseline have been discussed at length in the literature.[109] Suffice it here to give some examples that illustrate the magnitude of the challenge. Schneider, for instance, shows that if the baseline is built on the extrapolation of historical trends, the choice of the length of time for the baseline may be crucial. He explains that in a particular case the difference amounted to 331% for a period up to 2020 depending on whether the historical reference was based on a five-year or a fifteen-year trend.[110]

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[105] This is particularly the case when the inventories of developed countries of the KP are verified.
[106] CDM rules, par. 44.
[107] de Sépibus (2011: 5).
[108] CDM rules, par. 45 e. See also Michaelowa (2005).
[109] See Sterk (2010), Schneider and Cames (2009), Erickson and Lazarus (2011).
[110] Schneider and Cames (2009: 55).

Another telling illustration of the inherent uncertainties of emissions projections is provided by the European Emission Trading Scheme (EU ETS), which, in the first trading period, disclosed a significant over-allocation of allowances.[111] This example shows moreover how political pressure from stakeholders whose competitive stance is at stake can significantly affect the baseline-setting process. Furthermore, emission projections generally rely on a fair amount of uncertain assumptions, in particular as regards the future economic growth of a country or sector. For instance, a comparison of different national baseline GHG emission projections for Mexico showed a variance of 60% in 2020.[112]

While the exact baseline does not exist as it reflects per definition a counterfactual situation that cannot be proven, it is important to have sufficient safeguards to prevent free-riding of the system by untrustworthy actors. This may be achieved through a transparent and possibly international process that allows a thorough check of the claims made. Also, a sufficient amount of reliable data must be gathered to allow a credible review by independent entities. Finally, basic principles should be formulated to give some guidance on the baseline setting process.

To secure the environmental integrity of the mechanism, the EU stresses that the baseline of an SCM must be below BAU. It stipulates that the crediting threshold could be set "*below and in relation to actual and verified emissions collected for x years prior to the start of new market mechanisms*" or that "*a fixed percentage below estimated business-as-usual emissions*" is set.[113] In its view, this should ensure that developing countries make their own contribution to emission reductions and avoid a situation in which the mechanism generates huge amounts of "non-additional" credits.[114]

These criteria, as well as those laid down under the CDM provide a good starting point for defining a sectoral baseline, but will have to be clarified and developed and possibly tested in some pilot schemes.

The Approval of the Baseline by the EB

At the end of the CDM project cycle, the EB approves rejects or asks the proposers to amend and resubmit their project. It is assisted in its duties by the RIT and the Secretariat. A thorough review of the registration takes place if one of the Parties involved, or at least 3 EB Members request it. In this case, the Secretariat informs the project developer and the DOE about the request, and they may amend their project or decide to keep it as it stands. Based on this reply, both the Secretariat and the RIT prepare an assessment of the registration request and make their recommendations to the EB, which takes the final decision.

The question whether an executive body appointed by the COP/CMP should approve the baseline for an SCM deserves special attention. As mentioned previously, the estimation of the BAU emissions of a sector is associated with considerable uncertainties, as assumptions about the development of GHG emissions drivers (economic growth, fuel prices) imply a subjective judgement.[115] One might therefore argue that the decision regarding the crediting threshold is essentially a political issue that

[111] de Sépibus (2007).
[112] Prag et al. (2011: 12).
[113] UNFCCC (2011a: 55).
[114] Credits reflect "non-additional" emission reductions if the latter would have been achieved also without the mechanism.
[115] Schneider and Cames (2009: 18).

should be taken by the COP. This would enhance the transparency and the legitimacy of the process and allow all Parties to voice their concerns.[116] Furthermore, host country governments may prefer a decision of their "peers" to one taken by "technocrats".

On the other hand, the slow decision-making process of the COP militates against such an option. It would not ensure expeditious handling of SCM proposals and would allow "hostage taking"[117] of the issue. Also, more generally, the COP has never been able to decide on highly technical questions but has always delegated this task to smaller bodies. Given the complexity and the high degree of technicality of the baseline-setting process, the decision on the baseline should thus be assigned to a regulatory body acting under the authority of the COP.

Another question is whether the review of the baseline should be triggered, as in the case of the CDM, by a request from three EB Members. Given the risk that a host country will inflate the baseline, a more systematic review of the baseline seems desirable.[118] It might be advisable that a systematic review is carried out by the RIT and the Secretariat, allowing the Parties and stakeholders concerned to express their views and thereby enhance the transparency of the review process.

The Executive Body and its Decision-Making Process

The EB supervises the CDM and is, in this role, crucial in safeguarding the environmental integrity of the CDM. Although the CMP is responsible for the strategic development of the mechanism, it is the responsibility of the EB to translate these decisions to the project level, to interact with project developers, to control the DOEs' work and to concretize decisions of the CMP.[119] Significant criticism has been voiced with respect to the independence of the EB Members who work part-time and perform other functions simultaneously, including representing their country in the climate negotiations, heading their country's DNA or acting as managers of government CDM purchasing programmes.[120] Further, the inadequate professional background as well as the lack of immunity of the EB Members has given rise to concern.

When considering the eligibility of persons to act as Members of the SCM regulatory body, the COP should ensure a suitable representation of both developing and developed countries, as well as gender equity.[121] The Members of the regulatory body should be independent and impartial, that is free from bias, whether real or perceived.[122] Both independence and impartiality can be influenced by the process of appointment, the qualifications of the persons appointed and the terms of their appointment.[123] Appropriate disclosure requirements are thus essential.[124] Further, Members should abide by rules that prevent outside influences and private interests from controlling the decisions. Finally, the calls made with respect to the CDM EB for a more professional regulatory body with full-

[116] See Schneider and Cames (2009: 29).
[117] This means that Parties may make the approval of an SCM subject to the agreement on other issues.
[118] This risk cannot be sufficiently stressed – the example of the EU ETS shows that the setting of a baseline and the corresponding distribution of the burden is indeed a highly political process, where governments have to face intense lobbying by potentially affected stakeholders. See Neuhoff et al. (2006).
[119] De Sépibus (2011: 15).
[120] See Flues et al. (2010) for a thorough analysis of CDM EB decision-making. While they find some indication of political bias, it is weaker than expected.
[121] See in particular the proposals made by Schneider (2008: 8 ff.).
[122] UNFCCC (2011: par. B.1).
[123] UNFCCC (2011: par. B.1).
[124] See in particular Petsonk (2002: 2 ff.).

time salaried Members, with special technical and market expertise and benefiting from immunity, should be considered seriously.

Another aspect that must be carefully considered is how the decision-making process is shaped. It has to be transparent, consistent and predictable, and decisions that are taken by the regulatory body have to be clearly substantiated and justified.[125] To this end, many experts have stressed the importance of due process principles, which include the project developers' rights to be heard and to receive a decision explaining the legal and factual reasons for the decision.[126] The rationale behind this principle is that decisions must be fully thought through and avoid arbitrariness.

To provide the CDM project developers and eventually also a larger community of stakeholders a right to question the decisions of the EB, the CMP is currently considering the introduction of an appeals process.[127] The necessity and opportunity to create an appeals process for decisions of the SCM regulatory body will have to be carefully analysed.

The Verification Process

The validation of CDM projects as well as the verification of emission reductions after the implementation of the project is carried out by DOEs.[128] DOEs are confronted with significant information asymmetries when checking the credibility of the claims made by project developers. Many independent experts have therefore highlighted that the verification process remains unsatisfactory.[129] Schneider, in particular, notes in a study carried out in 2007 that only a tiny minority of the DOE reports explain in a transparent manner how the "additionality" claims have been checked. Also, many studies have raised the criticism that DOEs are chosen and paid by project developers.[130] As in the case of the rating agencies, which issued undeservedly high ratings for asset-backed obligations issued by their clients, there is thus a significant risk that the assessments of the DOEs are not conducted objectively.[131] To address these criticisms, much effort has gone into improving the quality of the validation reports, in particular by the EB. However, unless the underlying conflicts of interests are adequately addressed, doubts remain as to whether these reports are sufficiently objective.

In the case of an SCM, DOEs have to validate emissions reductions with respect to a whole sector. It is therefore likely that they will face even more information gaps than under the CDM. It is hence questionable whether DOEs will be able to carry out consistent checks of the claims made by host countries, if these claims are not backed up by a strict reporting process. The biennial reports,[132] which will have to be submitted to ICA, could constitute the basis for such a process. Providing a timely update of the most relevant data contained in national communications, e.g. with respect to national inventories, accounting standards, domestic MRV and mitigation actions, they would, if submitted to a credible review process under ICA, provide a valuable source of information for the baseline-setting process of an SCM.

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[125] See Schneider (2008: 11).
[126] UNFCCC (2011: par. B 2).
[127] See for a summary the report of the UNFCCC Secretariat (2011).
[128] The DOEs are accredited by the EB according to accreditation standards adopted under the CDM.
[129] The DOEs could be financed through a validation imposed on host countries. See Schneider (2007: 33).
[130] See Schneider (2008: 14 ff.).
[131] See de Sépibus (2011: 15), Petsonk (2002: 3).
[132] Guidelines for biennial reports are currently being discussed and may be adopted in Durban.

The SCM Project Cycle

The SCM project cycle could be designed along the following lines: the host country is responsible for preparing a Sector Policy Design Document (SDD), in which it defines *inter alia* the scope of the mechanism, the installations covered by the scheme, the baseline and the methodologies allowing the monitoring and the verification of the emission reductions achieved. As it is the host country that prepares the policy, no specific approval by the DNA is necessary. The DNA could however continue to play a role as a national focal point for the UNFCCC bodies and act as an internal coordinator between the various ministries of the host country government.[133] The host country would then publish the SDD and call for comments by stakeholders and the public within a reasonable time period.

The completed SDD can then be validated by a Designated Operational Entity (DOE) paid and selected by the Secretariat, which examines whether the project meets all the requirements set at the international level and/or follows a process along the lines of that for reviewing biennial reports. At the end of this time, the SDD has to be submitted to the EB for registration. The EB may approve, reject or request amendment and resubmission of the proposal after a thorough review of both the methodologies and the baseline has been carried by expert panels in an interactive way, including in particular in-country visits. If the SDD is accepted, the host country may implement the scheme and at the end of it require a DOE to verify whether and to what extent the emissions are lower than the baseline. If this is the case, the EB will issue, after verification of the claims, the corresponding amount of credits. Decisions of the EB may be appealed in certain well-defined circumstances.

5.2. Experiences with Decentralized Governance Models: Track 1 JI and Green Investment Schemes

This section briefly discusses experiences with two decentralized bilateral mitigation mechanisms, Track 1 JI and Green Investment Schemes. While the design of these mechanisms is significantly different from a possible SCM – Green Investment Schemes are not even crediting mechanisms – some analogies may still be drawn and lessons learned.

Track 1 Joint Implementation

The Kyoto mechanism "Joint Implementation," allows a country with an emission reduction or limitation commitment under the Kyoto Protocol (Annex B Party) to earn emission reduction units (ERUs) from an emission-reduction or emission removal project in another Annex B Party, each equivalent to one tonne of CO_2, which can be counted towards meeting its Kyoto target. A JI project must result in a reduction in emissions by sources, or an enhancement of removals by sinks, that is additional to what would otherwise have occurred. Projects must have the approval of the host Party and participants have to be authorized to participate by a Party involved in the project. If a host Party meets all of the eligibility requirements to transfer and/or acquire ERUs it may verify emission reductions or enhancements of removals arising from a JI project; it can verify and monitor the project according to nationally developed guidelines without involving the UNFCCC bodies.[134] This

[133] See also the proposals made by Schneider (2008).

[134] The eligibility criteria include the following: the host country has a national system for the estimation of anthropogenic emissions by sources and anthropogenic removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, has in place a national registry and has submitted annually the most recent required Greenhouse gas emissions inventory.

procedure is commonly referred to as the "Track 1" procedure" and can be regarded as a decentralized way to ensure the integrity of units from crediting mechanisms.

If a host Party does not meet all the eligibility requirements, but only a limited set of them,[135] verification of emission reductions or enhancements of removals as being additional has to be done through the verification procedure under the Joint Implementation Supervisory Committee (JISC). Under this so-called "Track 2" procedure, similar to the CDM, an independent entity accredited by the JISC has to determine whether the relevant requirements have been met before the host Party can issue and transfer ERUs. A host Party which meets all the eligibility requirements may at any time choose to use the verification procedure under the JISC (Track 2 procedure).[136]

In practice, several countries that were eligible for Track 1 also implemented projects under Track 2; in several cases this was requested by the buyer countries, which feared that the national provisions for MRV and additionality would be too weak, and that without UN governance the credits would lack integrity. While Track 1 can take national circumstances and laws into account better than track 2, the Track 1 procedures are often not transparent and they vary considerably among the different host countries. Regarding the environmental integrity of Track 1 JI projects, there is a broad range of views and so far no general conclusions can be drawn. One has to keep in mind that JI Track 1 is a mechanism within a capped system, as the countries eligible for JI have mandatory and absolute Kyoto targets and are part of the Kyoto accounting system. In principle the host countries are liable through AAUs for projects that lack environmental integrity. However, as many of the host countries had a surplus of AAUs, in some cases there were limited incentives to establish stringent MRV and additionality provisions.

Experiences with JI Track 1 suggest that a more coordinated approach including a certain amount of international standards and oversight is needed to guarantee environmental integrity.

Green Investment Schemes

An example of a bilaterally agreed mitigation mechanism outside any UN governance is the Green Investment Scheme. The former centrally planned economies – the Central and Eastern-European (CEE) countries, including Russia and Ukraine – have an estimated 8 to 12 billion surplus of AAUs for the first commitment period of the KP. This AAU surplus is often referred to as "hot air", as there is a common perception that a major share of the corresponding emission reductions has not been reached through planned emission reduction efforts but is primarily the result of the economic downturn in energy intensive industries. However, all potential buying countries have stated that they do not intend to achieve compliance through purchasing "hot air". Green Investment Schemes (GIS) have been introduced to address this situation.[137] Under GIS, revenues from sales of surplus AAUs are invested in environmental improvements in the selling nation, i.e., in "green" activities, particularly ones designed to assist in climate change mitigation. Through this mechanism, the AAUs purchased become linked to GHG emission reduction efforts. As no international rules exist for GIS, the

[135] Eligibility criteria include inter alia a national system for the estimation of anthropogenic emissions by sources and anthropogenic removals, a national registry, the annual submissions by the host country of the most recent required Greenhouse gas emissions inventory

[136] See http://unfccc.int/kyoto_protocol/mechanisms/joint_implementation/items/1674.php

[137] Tuerk, 2010.

programmes or activities in which the revenues are to be invested must be acceptable to both the selling and the buying governments.

Green Investment Schemes may be seen as models for bilateral mitigation agreements between countries insofar as they tried to target sectors that were not well covered by the CDM and they tested new and simplified methodologies for calculating emission reductions[138]. However the credibility of the mechanism has suffered as, in some countries, the disbursement of the revenues was unclear or revenues were misused. The lack of standardization and international oversight of GIS therefore created credibility problems and undermined the environmental integrity of the mechanisms.

Several countries participating in GIS schemes, however, have proposed some, in principle, credible mechanisms to monitor and verify emission reductions and AAU revenue flows, using, for example, independent audits by recognized international auditors and having recourse to existing and well known national institutions.[139]

Only limited experience has been gained so far with the actual implementation of GIS. First evaluations show, however, that countries with well-designed schemes have also had problems in the implementation of the GIS programmes, eg that not all projects from GIS programmes have been properly implemented.

6. Conclusions

The establishment of NMMs is an important issue in the current climate negotiations. Based on the criteria set out in the Cancún Agreements, a decision on their role, general design features, and principles could be taken in Durban. There is emerging consensus that NMMs would encompass an SCM. Credits under this mechanism would be generated only after the host nation has achieved a stipulated level of reductions, thus providing reductions beyond those of the current CDM approach. An SCM could stimulate GHG emission reductions across broad segments of the economy, and complement the CDM by targeting areas not well captured by it, in addition to providing credits that could be used to offset emissions in Annex-I countries.

So far, however, there is insufficient agreement on how SCMs will have to be governed, in particular on the role to be played by the UN. While some countries, including Japan and Australia, envision more decentralized, so called "hybrid" governance models with only minimum criteria set under the UN and a strong role for bilateral cooperation, the EU favours a centralized UN-based governance model with common rules defined under the UNFCCC and possibly a strong supervisory body, responsible for ensuring the smooth functioning of a SCM mechanism.

Both options have advantages and disadvantages and an agreement on an SCM is likely to entail some major trade-offs. A centralized governance model could be embedded in the GHG accounting

[138] As of July 2011 in total, around 40 AAU deals over 240 million AAUs have been concluded; Estonia and the Czech Republic havr concluded the highest number of deals (11 and 9 deals, respectively). The countries having sold the most AAUs are the Czech Republic and Ukraine (86,25 million and 47 million AAUs, respectively). Other European seller countries are Hungary, Latvia, Slovakia, Lithuania and Poland. The largest buyer by far is Japan having bought around 160 million AAUs (both government and private buyers). Other buyers are Spain, Austria, Belgium, Ireland, Luxemburg, the Netherlands, Portugal, the World Bank and private firms.

[139] Tuerk et al. (2010).

framework of the KP without major difficulties and could better support the establishment of a globally linked carbon market. A hybrid governance model allows for more flexibility, may better accommodate the range of host country circumstances, and could ease the set-up of SCMs. However, a hybrid model may compromise environmental integrity.

In the absence of any international oversight of a SCM mechanism, it is not clear whether confidence in international climate change actions can be maintained.[140] Indeed, even if safeguards foreseen in agreements between two or more nations seem sufficiently robust to guarantee the environmental integrity of the generated credits, the international community might have limited means to verify the reductions and address potential problems that might arise. As a result, the entire accounting system might lose credibility and it would become difficult to assess what was actually achieved by national GHG reduction pledges. Moreover, trading of units on an international market would become more difficult, as the value of the generated units could vary from agreement to agreement.

If a centralized governance model is envisaged for the SCM, the institutional and procedural set-up of the CDM provides an interesting model. All major governance functions, including oversight of methodologies, baselines, and compliance and issuance of credits of the SCM would remain under the control of the UN. However, the greater involvement of host countries as well as the potentially greater amount of credits generated by NMMs deserves special attention. First, capacity-building for "market-readiness" will be more important and should be more strongly supported and more centrally coordinated in order to optimize the use of limited resources and increase sharing of knowledge. Second, the review of methodologies and baselines should occur in a more interactive way to address asymmetries of information and allow input from stakeholders, NGOs and competitors. Third, the regulatory body entrusted with the oversight of the mechanism should be professionalized and strict rules should guarantee its independence and impartiality. Finally, a credible international report and review process of host-county national inventories and mitigation actions is needed to guarantee the stipulated emission reductions.

Whether hybrid governance models with a lower degree of international oversight than under a centralized model – as advocated by Japan – or decentralized models with no international oversight – – as advocated by California – will lead to the issuance of meaningful credits cannot be predicted at this stage. The risk that, without a sufficient degree of international oversight, flawed SCM credits could undermine the credibility of an emerging international carbon market should not be underestimated. The experience of Track 1 JI shows that a lack of standardisation under the UN may lead to fragmentation and a lack of transparency regarding the additionality of generated credits. On the other hand less centralized models have the merit of exploring new avenues for generating emission reduction credits; speeding up the establishment of SCMs; and providing useful laboratories for new, as yet untested, instruments. However, any decision to recognize credits generated under hybrid or decentralized mechanisms within an international GHG accounting framework should be accompanied by safeguards, such as criteria and standards set by the UN and be preceded by pilot schemes, as was the case under the CDM and JI. This would allow for an international review and possible adjustments to hybrid or decentralized approaches to SCMs.

[140] Prag et al. (2011 : 22 ff).

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