
**Deborah Murphy,
Aaron Cosbey
John Drexhage**
*International Institute for
Sustainable Development*



**MARKET MECHANISMS FOR SUSTAINABLE DEVELOPMENT
IN A POST-2012 CLIMATE REGIME:**

Implications for the Development Dividend

Abstract

There is broad consensus in the international talks on a post-2012 climate change regime on the need for some perpetuation of the CDM—a market mechanism for sustainable development (MMSD). Regime options under discussion will impact on the “development dividend” of a post-2012 MMSD, affecting quality (sustainable development), quantity (volume of CERs) and regional distribution. This paper examines four regime options—increasing the scope of the CDM to include additional sectors, differentiation of developing country eligibility, expanding the CDM, and a fund-based mechanism—and their potential impacts on the three elements of the development dividend.

The nature and scope of the Clean Development Mechanism (CDM) is an important consideration in the international discussions on a post-2012 climate change regime. The negotiations have taken on increased intensity as negotiators seek to finalize a post-2012 regime by COP 15 in December 2009. The Bali Action Plan, adopted in December 2007, set out broad parameters to guide the two-year negotiating process, focusing on mitigation, adaptation, technology development and transfer, and financing and investment. The Plan also emphasized the importance of “Various approaches, including opportunities for using markets, in order to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries” (United Nations Framework Convention on Climate Change [UNFCCC], 2007a: 2). The current regime employs the CDM and Joint Implementation (JI) as market mechanisms, but one can imagine a number of different market mechanisms for

sustainable development (MMSD) that could play similar roles.¹

Discussions at the UN meetings indicate that the current CDM could be subject to major changes in any post-2012 climate agreement. The Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) is deliberating possible improvements to the project-based mechanisms. Key elements being explored include broadening the scope of the CDM to include other activities (land use, land-use change and forestry (LULUCF), carbon capture and storage (CCS) and nuclear); and expanding the CDM to include sectoral CDM, sectoral crediting of emission reductions below a previously established no-lose target, and/or crediting on the basis of nationally appropriate mitigation actions (NAMA). Also under discussion are proposals to improve the functioning of the CDM, including standardized baselines and positive or negative lists of project activity types to improve environmental integrity and the assessment of additionality; differentiation of eligibility of partners; improved access to the CDM for least developed countries (LDCs) and small island developing states (SIDS); co-benefits as a criteria for registration; and multiplication factors to increase or decrease Certified Emissions Reductions (CERs) issued for specific project types.

Evident from these discussions is that most, if not all, UNFCCC Parties envision an important role for a CDM-like mechanism in the post-2012 regime. Yet there are different views of

what constitutes an effective and appropriate mechanism. Many developed countries are interested in an MMSD that provides access to low cost credits to meet compliance targets under the Kyoto Protocol. But there are growing concerns about international offsets, with some viewing them as a wealth transfer, arguing that the current CDM market does not reflect actual reductions in emissions (Victor and Wara, 2008). Political sentiment in developed countries requires robust additionality processes to ensure the environmental integrity of credits under an MMSD. Developed countries are also interested in an MMSD as a means to engage developing countries in efforts to reduce emissions and to encourage large emitting countries to go beyond the CDM in the post-2012 regime.

Developing countries see the mechanism as an important means for supporting sustainable development, and are careful to safeguard their sovereign right to define what constitutes sustainable development in the national context. For most, it includes at least increases in the flow of investments, technology transfer and access to leading-edge clean technologies. Equity of access and the regional distribution of projects under the mechanism is particularly a concern for LDCs. Developing countries also want an MMSD that keeps demand robust. While this is dependent on governments reaching agreement on further greenhouse gas (GHG) emission reduction targets, the structure of the mechanism will have a bearing on supply and demand post-2012. As well, they are conscious of the fact that the integrity of the mechanism will also have an impact on demand from Annex I Parties, CERs being only one of several options for Annex I compliance via trading.²

1 In this paper, MMSD describes a market mechanism that can be used to achieve the goals of the current CDM as stated in Article 12 of the Kyoto Protocol, "to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments."

2 Currently, two other market-based mechanisms offer compliance units for Annex I Parties: Assigned Amount Units (AAUs) under International Emissions Trading (IET) and Emissions Reduction Units (ERUs) under JI.

An effective MMSD in a post-2012 regime will need to balance the demands and expectations of developed and developing countries, including addressing the issues of quality, quantity and regional distribution of projects—characteristics of the “Development Dividend” (Cosbey *et al.*, 2005). From a development dividend perspective, this means understanding how the future regimes could assist in improving:

- Quality – encouraging stronger sustainable development in developing countries;
- Quantity – ensuring access to cost-effective CERs that are commensurate with market demand, and encouraging large-scale investments in transformative sectors such as energy and transportation;
- Regional distribution – increasing investment in LDCs and other poor developing nations.³

The paper examines possible post-2012 regime structures, the potential role of the CDM or other MMSD within the structures, and the implications for the development dividend within each regime. To guide the analysis, the paper examines four possible regime options that are being discussed in the international negotiations:

- Targets with flexibility mechanisms;
- Differentiation of developing country eligibility;
- Expanded CDM; and
- Fund-based Mechanism.⁴

³ IISD's on-going Development Dividend Project explores what can be done to improve the quality, quantity and regional distribution of CDM projects. Project information and reports can be found at: <http://www.iisd.org/climate/global/dividend.asp>.

⁴ This discussion builds on an earlier IISD paper (Cosbey, Murphy and Drexhage, 2007) that surveyed 43 proposed post-2012 regime approaches to see what they implied for MMSDs. The 2007 survey also looked at technology approaches and concluded that such approaches, in and of themselves, do not include a role for an MMSD. Some technology actions could incorporate “market-plus” elements, such as carbon offsets;

In Sections 2 to 5, each of the four options is examined, looking at regime characteristics and implications for the development dividend. The discussion on *quality* asks what the various regime options would mean for an MMSD's potential to contribute to sustainable development. The *quantity* discussion explores the implications of the regime options for the volume of CERs in the market. The discussion on regional distribution

Cosbey and Drexhage (2007) argue that there will be pressure for major developing countries to take actions commensurate with their capacity, which could include an expansion of Kyoto's simple two-tiered system.

assesses the potential impacts of the regime options on the share of MMSD investment destined for least developed and poorer countries. Section 6 provides an overview of the four regime options and concluding comments.

Targets with Flexibility Mechanisms

A number of proposed post-2012 regimes being discussed in the international negotiations accommodate the CDM in more or less its current form. While many proposals suggest elements of improvement and streamlining, the CDM remains a project-based mechanism, albeit with programmes of activities. It operates within a regime that includes emission reduction targets, and differentiation between those with targets and those without. This is fairly straightforward, and currently includes Annex I and non-Annex

but these are not discussed in this current paper as there is little experience with technology credits (aside from sectoral-based approaches, which are included under the expanded CDM category).

I countries, where the CDM acts as a bridge between these two types of groups.

The AWG-KP discussions include proposals that would maintain the basic project-based structure of the CDM, but expand the scope to include additional eligible project activities, including other LULUCF, CCS and nuclear activities (UNFCCC, 2008).

Development Dividend Implications

Quality - The extent to which the CDM has contributed to sustainable development has been a major point of contention for many stakeholders and some have asserted that the CDM has not lived up to expectations in this regard. All CDM host countries are required to assess projects to ensure that they are compatible with their sustainable development objectives. And there have been a range of different approaches adopted by countries in terms of how they screen projects for achievement of these objectives. HFC-23 destruction and N₂O projects are the most contentious in this regard. CCS and nuclear projects have the potential to generate similar criticisms about their inability to contribute to sustainable development, and their potential to divert investments from renewable and energy efficiency—project areas with greater sustainable development benefits.

There is no guarantee that negotiators will agree on including these project sectors in a post-2012 CDM, but a possible solution for the quality issue, while not necessarily ideal, could be the levying of a tax on such projects with revenues put into a national sustainable development fund. This would be similar to systems already taxing the proceeds from carbon credit sales such as in China, Egypt and Vietnam. Such a solution is un-

likely to be part of an international agreement and action would need to take place unilaterally at the country level.

Also, under discussion is the possibility of including co-benefits as criteria for the registration of CDM project activities (UNFCCC, 2008), including specific sustainable development benefits. The prospects of reaching such an agreement are low, as developing countries most likely will hold fast to their right to define sustainable development.

Quantity - Modifying the scope of eligible project activities has the potential to unlock a huge potential supply of credits at low prices. A study from the Woods Hole Research Center concluded that 94 percent of Amazon deforestation could be avoided at a cost of less than US\$5 per tonne, compared to the US\$25-35 per tonne trading range of existing CERs (Nepstad, *et al.*, 2007). If CDM revenues were available to boost incentives in this area, a large amount of cheap credits could potentially become available on the market—creating concerns of over-supply. This, combined with a potential increase in credits from CCS and nuclear projects (as well as sectoral credits and crediting on the basis of nationally appropriate mitigation actions, discussed in Section 4), could completely swamp the market.

Of course, this depends on the broader international agreement. If there was agreement to limit global average temperature increase to 2°C compared to pre-industrial levels, the supply of CDM credits may not be able to meet demand. And political sentiment in developed nations may result in less desire for meeting targets through international purchases—favoring domestic action or other compliance credits—dampening demand.

Regional distribution – A wider scope of LULUCF projects could encourage broader participation in the CDM. There is huge potential in non-Annex I countries for LULUCF projects in addition to afforestation and reforestation—such as improved agriculture, reducing the unsustainable use of biomass energy, revegetation, and reducing emissions from deforestation and degradation (REDD).⁵ Indeed, Schlamadinger's (2007) research determined that a broader LULUCF scope could help ensure a more regional distribution of CDM projects, especially for Africa. It is the position of the African Group that REDD should be considered under the project-based mechanisms to help improve regional equity; and the LDC negotiating group has called for a broadening to LULUCF activities to allow greater access for LDCs to the CDM (Third World Network, 2008a: 3).

In regard to broadening the scope to include CCS and nuclear, there is some concern that such projects would continue to benefit the larger, more economically-advanced developing nations. The UNEP-Risoe Centre's (2008) CDM pipeline indicates that the top three host countries—China, India and Brazil—host over 70 percent of approved CDM projects and will generate three-quarters of all CERs by 2012.

Differentiation of Developing Country Eligibility

The international negotiations include a highly contentious discussion of possible graduation of some non-Annex I Parties to a state of target- or action-based commitments. Arguing for differentiation in the August 2008 Accra

⁵ Other approaches to REDD financing are also being discussed in the negotiations, including a market-linked system whereby a dedicated REDD trading mechanism is established and a non-market approach where a small proportion of international emission allowances would be sold to developed countries with the revenues going into a fund to support REDD efforts in developing countries.

discussions, Australia noted that 45 developing countries have a GDP per capita higher than that of Ukraine which is an Annex I country—including South Korea, Qatar, Bahrain, Saudi Arabia, Singapore, Bahamas—suggesting that this be an indicator for differentiation (Third World Network, 2008b). Cosby and Drexhage (2007) argue that there will be pressure for major developing countries to take actions commensurate with their capacity, which could include an expansion of Kyoto's simple two-tiered system. Most (but not all) developing nations, on the other hand, argue that the only differentiation under the Convention and the Bali Action Plan is the differentiated response between developed and developing countries under the principle of common but differentiated responsibilities, including the historical responsibilities of the developed countries for GHG emissions.

Approaches that favour graduation of some non-Annex I countries will have perhaps the most interesting impacts on the function of any MMSD. An option would be to involve the major developing country Parties with targets in IET and JI-like mechanisms, perhaps providing incentives for developing country participation by allowing these countries to receive large amounts of surplus allowances. There could be a separate scaled-down version of the current CDM for those countries without targets. There are disincentives (discussed below) for developing countries to pursue such a negotiated outcome, perhaps surmountable by the granting of large surplus allowances matched by tough Annex I targets.

Development Dividend Implications

Quality – With selective differentiation, the CDM would probably become more oriented to development than mitigation, serving the needs

of lesser developed countries and comprising a portfolio of projects that achieve high development dividends.

While the CDM is explicitly aimed at fostering sustainable development in the host countries, IET and JI have no such explicit aim. If the starting point is the need for an MMSD focused on both low-cost emissions *and* sustainable development, then one option would be to “green” AAUs in a development-friendly manner, or to amend the JI to include sustainable development requirements (i.e., the requirement for host country approval on sustainable development grounds). This could be made effective exclusively for developing country hosts, or more broadly for all host countries.

On the other hand, it can be argued that JI *implicitly* includes an imperative to foster sustainable development, or at least to serve national interests according to some definition. If a JI project offered no development dividend, there would be no reason for a host country to allow it, given that any ERUs it produced would result in increases to the host’s emission reduction commitment. In fact, since some percentage of JI projects will inevitably be non-additional, the ancillary benefits of the project roster as a whole will have to be seen by the host to be sufficient to *more* than balance out the resulting effective increases in its assigned amount.

One implication of a JI as a replacement for the CDM is that such a regime would shift the burden for determining additionality away from the international level and toward the national (to the extent that the new mechanism functioned like Track 1 JI). That is, at the global level the JI mechanism does not allow for a net reduction in emission reduction commitments, so only the host state needs to be concerned about additionality. This would greatly simplify the international

administrative machinery as compared to the CDM, but it might also result in inefficient duplication of similar efforts at each national level.

Any regime that incorporated such a mechanism, of course, would have to account for the fundamental differences between this and the existing narrow CDM. From a developing country perspective, the existing CDM is a more or less unblemished good, bringing as it does a measure of development dividend without any attendant obligations. A JI-type mechanism that covered developing countries would still bring those sorts of benefits to host countries, but would take place in the context of host country obligations to reduce emissions, and would see all credits accruing to the investor’s home country, counting toward its reduction commitment. In effect, this requires the host country to give up low hanging fruit for the emissions reduction benefit of others. As such, developing countries would presumably need to be compensated in the design of the regime for losing the CDM.

Quantity – A regime with selective differentiation means that the market will not experience the large volumes of credits as seen from the major CDM players. The major developing countries are by and far the main suppliers of CERs up to 2012. If, for example, we removed China from the market, the number of projects in the current CDM pipeline would be reduced by 36 percent and the number of CERs by 2012 would drop fully by 54 percent (UNEP-Risoe Centre, 2008). This shortfall might be made up to some extent by broadening the scope of the CDM, and some developed countries may turn to ERUs or AAUs to meet compliance targets.

Regional distribution - Differentiation could impact on the regional and equitable distribution of projects. As countries graduate from the CDM, a greater share of the market will be open to LDCs. At present, regional distribution is very unequal with Latin America & the Caribbean and Asia & Pacific together accounting for over 95 percent of CDM projects and just under 95 percent of CERs. LDCs account for 28 projects in the CDM pipeline—less than 1 percent of the projects and 1 percent of the CERs (UNEP-Risoe Centre, 2008). Of course there is no guarantee that the funds that formerly flowed to large targets of CDM finance would actually be redirected to CDM in smaller countries. Investment tends to flow to the best available opportunities, and if the barriers to CDM investment in those countries are high enough, the market might simply shrink, rather than redistribute. In fact such an effect is practically guaranteed—the question is simply how significant it would be.

Expanded CDM

An expanded CDM or a broader MMSD, which seeks to overcome perceived constraints of the current project-based approach by resort to policy or sectoral approaches, is also a topic in the post-2012 negotiations. The international discussions have narrowed the focus to include sectoral CDM for emission reductions below a baseline defined at a sectoral level; sectoral crediting of emissions reductions below a previously established no-lose target; and crediting on the basis of NAMA. While the existing architecture of the CDM would need to be modified to accommodate these proposals—technical issues such as baselines, monitoring and verification, and institutional issues such as working through the Executive Board could build on the current CDM framework.

There is considerable interest in sectoral crediting mechanisms, but the various formulations, to greater or lesser degrees, are subject to serious limitations. A primary difficulty is that there are not many sectors that would be amenable to sectoral crediting; it demands a small number of coordinated large emitters. For both sectoral and NAMA crediting mechanisms, baseline determination is plagued with fundamental

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difficulties, there is no easy way to determine additionality, and it is difficult to get around the problem of punishing first movers by crediting only those that moved after the implementation of a sectoral crediting or crediting on the basis of NAMA. Baron and Ellis (2006) argue that the difficulties of coordinating sectoral crediting mechanisms across a number of linked domestic and regional trading systems would probably prove insurmountable; and the same could hold true for credits based on NAMA.

Development Dividend Implications

Quality - The potential for an expanded CDM to contribute to sustainable development is obvious. Sectoral CDM could be employed to exploit the win-win opportunities in sectors such as deforestation, energy and transportation, all

of which have enormous development linkages. Crediting on the basis of NAMA offers countries a more strategic and integrated mechanism, encouraging linkages with national development policies and encouraging project activity in such sectors as energy efficiency, renewable energy and transportation—sectors that tend to generate higher development dividends.

Quantity - Sectoral CDM holds potential for an enormous amount of GHG mitigation, on a scale that far outpaces the current project-by-project formulation of the CDM (Bosi and Ellis, 2005). Thus, an expanded CDM may give rise to the concerns discussed above in Section 2 about flooding the market for compliance units. One of the key benefits that many see in the prospect of an expanded CDM is its ability to deliver large quantities of GHG reductions as compared to the current bottom-up approach. But the question is whether the resulting flow of CERs would in fact find buyers, or to what extent the price of CERs would reach disastrous lows. Baumert and Winkler (2005) have argued that the expanded version of the CDM would vastly increase the potential for generating credits, perhaps well beyond what the market would bear in terms of demand. The analysis above cited projections of demand for all Kyoto compliance mechanisms—not just CERs—of between 1.6 and 2.5 GT by 2012. On the supply side, very conservative estimates indicated potential for policy CDM to yield at least 3.6 GT of annual CO₂e reductions by 2030 (Cosbey, Murphy and Drexhage, 2007: 14).

An expanded CDM has clear potential to reduce GHG emissions at a higher order of magnitude than the narrow version. This may be good news for buyers, but only up to a point. If the market becomes swamped it will crash, with values for CERs coming in at well below what proponents

projected, potentially leading to widespread abandonment of project-based initiatives. One clear implication for a regime that includes an expanded CDM is the need for ambitious reduction targets that will fuel demand for the additional CERs that may be brought on line, though the expanding voluntary market may pick up some of any excess supply.

Regional distribution – Sectoral CDM would be likely to start in the more advanced developing nations, because they are more likely to have a large industrial base, and have worked with existing sectoral initiatives such as the Cement Sustainability Initiative. Crediting on the basis of NAMA would also likely favour the more advanced developing nations, continuing the pattern of uneven regional distribution of projects. There are proposals that recognize this imbalance, with South Korea suggesting that a share of proceeds from the revenue of NAMA credits be allocated to support LDCs and Small Island Developing States (Republic of Korea, 2008).

Fund-based Mechanism

Financing is an explicit part of the Bali Action Plan and the negotiations include discussion of the types of institutional innovation that might support the necessary financial transfers from developed to developing countries. . There could be potential for linking some of the transfers to specific sustainable development attributes by associating the support with a fund-based mechanism.

The original proposal from Brazil that led to the creation of the CDM was for a clean development *fund*, endowed by Annex I countries, which would support sustainable development in developing countries in ways that also achieved mitigation. As well, Mexico (2008) recently proposed a

Green Fund that would support such activities, though the resulting emissions reductions would not be used to offset emissions in developed countries. A fund-based mechanism based on these conceptions is discussed here because it is unique among the options described; it can operate within and outside a regime of internationally agreed targets.

A fund-based mechanism could have a scope similar to the CDM, and would consist of mandatory contributions from UNFCCC Parties, the nature and extent of the contributions being a matter of international negotiations. In the end there are a number of ways that contributions could be assessed. The Mexican proposal calls for basing contributions on an index composed of GHG emissions (present and historic, absolute and per-capita), GDP and population.

This fund would then be used to purchase emission reduction credits from GHG-reducing projects, policies or programs in developing countries. If the Fund operated under a regime with targets, the credits involved could be used to retire obligations of the funders, assigned in proportion to contributions. If it operated under a regime without targets, it would be considered a straight funding mechanism, similar to the Mexican proposal, able to fulfill developed countries' Article 4.3 UNFCCC obligations to cover the incremental costs of addressing climate change in developing countries.⁶ In contrast to the "with targets" Fund, such a scheme would result in *net* global mitigation of GHG emissions.

⁶ If the Fund operated in this mode, there is no reason why it could not welcome non-governmental "voluntary market" investors as well, in a scheme that could simultaneously give that market the credibility it needed, and provide important extra funding for mitigation and sustainable development in developing countries.

There are a number of ways in which the Fund could disperse its resources, but primary among the design considerations would be a desire to harness the ingenuity and energy of the private sector, as does the existing CDM. One possibility would be a reverse auction arrangement, whereby project proponents would commit to delivering credits for agreed prices, and would bid against each other in competition for contracts. Under this scenario, contracts would be awarded to the lowest bidder that satisfied the methodological requirements (such as additionality), and the bidding would stop when the budget tranche for a particular time period had been exhausted.⁷ Inevitably there would be projects for which the terms of the contract were unfulfilled, for example because the project failed to receive project funding. The unused funds from such projects could simply be rolled back into the next tranche of funding.

Development Dividend Implications

Quality – A fund-based mechanism could be structured to explicitly direct financial transfers to sustainable development priorities. There may need to be a specific definition for sustainable development under the fund, i.e., the project meets an agreed list of minimal sustainable development benefits or is ranked on a point system. A funding mechanism could also be combined with a more traditional type of MMSD, in a pairing that had the fund focusing more explicitly on sustainable development and the more traditional mechanism focusing on sheer volume.

⁷ One advantage to such a process is that it would eliminate some of the huge producer surplus generated by the current system. In a reverse auction it is highly unlikely, for example, that HFC projects with costs as low as US\$1/tonne would fetch the kinds of prices they are currently fetching in the carbon market.

Quantity – Could a fund supported entirely by governments foster the same volume of GHG reduction units as could a market mechanism, such as the current CDM, that relies extensively on private investment? While no hard data exists for the magnitude of CDM investment, UNFCCC (2007b) estimates that there was US\$7 billion invested as a result of the CDM projects that were registered in 2006—a figure that is probably well below the capacity of a reformed CDM to deliver in the post-2012 context. To give an indication of the magnitude of that flow relative to the kind of flows made available by governments for the same sorts of purposes, note that the total funding for the most recent four-year replenishment for the Global Environment Facility averaged out to about US\$0.8 billion per year. Of this, it disburses about US\$250 million per year on mitigation-related activities. Another standard for comparison is provided by the recently established and highly publicized World Bank Climate Investment Funds (part of which will be devoted to adaptation funding), which combined are targeted to reach US\$5 billion over 3 years, or US\$1.7 billion per annum.

In light of these standards, there might be cause for concern in relying only on a government-supported fund to support mitigation efforts. It would certainly be a challenge to raise the kind of money needed to even replace the private sector investment that currently goes into the CDM, much less the potential investment under a reformed and broadened CDM. The recent economic downturn suggests that it may be a difficult time to generate significant new funds in many developed countries, particularly if these funds are perceived to support investment in major developing countries, such as China, with its rising economic power.

Regional distribution – A fund-based mechanism may be the most suited to equitable regional distribution, whereby a portion of the funding can be allocated to LDCs. The percentage of funding allocated to poorer countries would need to be carefully considered. While it may be true that the major developing countries account for the majority of CDM investment, it is also true that they also account for the majority of population, GDP and energy use among developing countries. A weighted distribution of funding using, for example, an average of population-deflated and GDP-deflated figures, could help to determine an equitable distribution of funds.⁸ Of course, capacity building to set up an enabling environment for climate mitigation investment will be needed in many LDCs.

Conclusion

There is uncertainty about the long-term nature of the carbon market, but there is broad consensus in the international talks on a post-2012 climate change regime on the need for some perpetuation of the CDM—a market mechanism for sustainable development. Emissions trading will likely form an important cornerstone of future action on climate change, and the CDM or other MMSD with a strong focus on cost efficiency and flexibility is important to businesses seeking credits for compliance. And such a mechanism can help developing countries encourage sustainable development and contribute to the objective of the UNFCCC to reduce GHG emissions, consistent with the goal of Article 12 of the Kyoto Protocol.

The structure of the post-2012 regime will have a strong influence on the development dividend.

⁸ See Cosbey (2006: 26-29) for a discussion of weighted regional distribution of CDM projects.

If developed country concerns of access to reasonably priced quality credits are met and there is meaningful participation by developing countries, especially the large emitters of China, India and Brazil, there likely will be high demand for these credits.⁹ If these concerns are not met and the sustainable development benefits of CDM projects are questionable, there could be strong political pressure in developed countries to undertake domestic emission reductions, weakening the market for credits under the CDM.

Four possible post-2012 regime options and the implications for the development dividend within each approach have been examined in this paper. As noted in Table 1, a fund-based mechanism is best able to address the issues of quality and regional distribution because it can be structured to explicitly direct financial transfers to sustainable development priorities and LDCs. But it will be challenging, and likely impossible, to get agreement on a level of funding similar to that expected to flow through an MMSD. A regime with graduation criteria could create a greater market share for LDCs, but there is no guarantee that investment will flow to these countries. A wider scope for LULUCF projects also could benefit LDCs, but considerable capacity building would likely be needed to create conditions to attract investment. LULUCF projects also offer considerable promise for generating SD benefits; as does expanding the CDM to include crediting on the basis of NAMA and sectoral CDM.

In regard to quantity, if the more advanced developing nations take on targets, the CDM market will see massive reduction in volumes supplied since the majority of projects and CERs

in the current pipeline are from such countries. There are, however, options to increase the supply of CERs, such as broadening the scope of and expanding the CDM. Under such regimes the main consideration would be the volume of credits potentially issued and the subsequent impacts on the carbon market. Absent ambitious Annex I targets, the high volumes generated might have the potential to increase the supply of CERs to the point where the market might be swamped. In such a case there may be potential

Key elements being explored include broadening the scope of the CDM to include other activities (land use, land-use change and forestry (LULUCF), carbon capture and storage (CCS) and nuclear); and expanding the CDM to include sectoral CDM, sectoral crediting of emission reductions below a previously established no-lose target, and/or crediting on the basis of nationally appropriate mitigation actions (NAMA).

for CERs to sell on the as-yet-nascent voluntary market. Without increases in demand, prices might hit destructively low levels under some of the broadened and expanded CDM scenarios.

It is important to note that the more attractive an MMSD becomes in a post-2012 regime, other things being equal, the less incentive any developing country has to take on targets that entail lost access to the mechanism.¹⁰ If the post-

⁹ Of course, as noted above, if “meaningful participation” takes the form of developing country targets, the CDM as it is currently configured will not operate.

¹⁰ The assumption of other things being equal is important. It is of course possible to imagine a regime such as those described in Section 3, involving targets for all, emissions trading, with tough enough developed

Table 1: Development dividend impacts of post-2012 approaches under discussion in the international negotiations

Approach	Regime Characteristics	Development Dividend Implications		
		Quality	Quantity	Regional Distribution
Targets with flexibility mechanisms – broadening the scope	Emission reduction targets Differentiation of those with targets and those without	LULUCF projects offer considerable SD benefits Projects with questionable SD benefits could be included (e.g., CCS, nuclear)	Broadening scope could unlock huge potential supply of credits, perhaps beyond what the market can bear in the absence of ambitious targets in developed countries	Wider scope of LULUCF projects could encourage broader participation, including LDCs, CCS and nuclear projects likely to benefit more advanced developing nations
Differentiation of developing country eligibility	Emission reduction targets Differentiation of those with targets and those without Graduation criteria for developing countries	IET and JI have no aim to foster SD; options are to green AAUs or amend JI to include SD requirements CDM could be more oriented to serving the SD needs of lesser developed countries	Market will not experience large volume of CERs (as the main suppliers of credits up to 2012—more advanced developing countries—will graduate	Greater share of market open to LDCs, but no guarantee that CDM funds will be redirected to these countries
Expanded CDM	Emission reduction targets Differentiation of those with targets and those without	Sectoral CDM could exploit development linkages in such sectors as deforestation, energy and transportation Crediting on the basis of NAMA offers linkages with national development priorities and activities in high SD areas.	Vastly increased potential for CERs, perhaps beyond what the market can bear in the absence of ambitious targets in developed countries	Sectoral CDM and crediting on the basis of NAMA would benefit the more advanced developing countries, continuing the pattern of uneven regional distribution
Fund-based mechanism	Could operate within and outside a regime of internationally agreed targets	Fund structure could explicitly direct financial transfers to SD priorities	Challenging for a government-supported fund to replace the level of private sector investment that goes into the CDM	Most suited to equitable regional distribution, whereby a portion of funding can be allocated to LDCs

2012 regime includes a radically expanded MMSD that covers sectoral and NAMA initiatives, it is offering governments the opportunity to fund a variety of policies and programmes that they might have as current priorities, but for which they lack the requisite resources. This clearly counts as a more attractive MMSD.

Given the broad desire for some sort of MMSD in the post-2012 regime, it is important to understand the significance of the various possible regimes on the shape of an MMSD. This paper takes a first step in this direction, providing policy makers with a deeper understanding of the development dividend implications (quality, quantity and regional distribution) of various MMSDs.

Deborah Murphy works with the International Institute for Sustainable Development (IISD) with the Climate Change and Energy Program. Her work on climate change is focused on market mechanisms, technology, the post-2012 climate change regime, governance, and more fully exploring the links between climate change and sectoral policies.

Contact: dmurphy@iisd.ca

Aaron Cosbey manages the Trade and Climate Change Programme with the International Institute for Sustainable Development (IISD). He is a development economist and has served as advisor and consultant to a number of governments and intergovernmental organizations.

Contact: acosbey@iisd.ca

John Drexhage is Director of the Climate Change and Energy Program of the International Institute for Sustainable Development (IISD). He has extensive experience in climate change and energy, including periods as a domestic advisor and international negotiator on climate change, followed by work as an expert analyst and manager for IISD.

Contact: jdrexhage@iisd.ca

country targets and generous enough allowances for developing countries to overcome the disadvantage of losing the CDM as a mechanism.

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