

# Lessons from the CDM in LDCs, for the design of NMM and FVA

Axel Michaelowa, Gebru Jember and El Hadji Mbaye Diagne

UPDATED JANUARY 2014

## KEY POINTS

- The Clean Development Mechanism (CDM) **should not be ditched in favour of new, untested mechanisms.**
- **New Market Mechanisms (NMMs) should use the governance structure of the CDM,** but should go further in standardising baseline and monitoring methodologies.
- The Framework for Various Approaches (FVA) **is unlikely to generate benefits that could not be harnessed by NMMs or the CDM.**
- A sufficient demand for credits requires strengthening of Annex B country commitments and “graduation” of advanced developing countries to take up emission targets under the 2015 agreement. **The stronger the commitments, the less the market mechanisms would have to contribute to global reductions.**
- **Targeted climate finance** for underlying funding of CDM projects and Programmes of Activities (PoAs) is needed.

## Table of Contents

---

Overall performance of the CDM up to 2012	2
Participation of LDCs in the CDM up to 2012	4
Performance of initiatives to boost participation of LDCs in the CDM	7
Lessons for the design of new market mechanisms currently negotiated under the UNFCCC	14
Conclusions for LDC negotiators	16
Appendix 1	19
Appendix 2	21

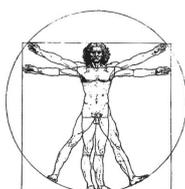
Axel Michaelowa, Perspectives GmbH  
Gebru Jember, Climate Change Forum, Ethiopia  
El Hadji Mbaye Diagne, Director, Energy and Environment Unit, Senegal

The authors are grateful to Jørund Buen, Co-Founder, Differ, for his valuable comments.

Series Editor: Anju Sharma  
Anju.Sharma@iied.org

**FIRST VERSION SEPTEMBER 2013**

**UPDATED JANUARY 2014**



**ecbi**

The LDC Paper Series has been produced by the ecbi Publications and Policy Analysis Unit for the LDC Group. The views expressed in the papers in this Series are those of the authors and do not necessarily represent the views of the LDC Group or members of ecbi.

## Overall performance of the CDM up to 2012

---

The Clean Development Mechanism (CDM), a project-based offset mechanism defined in Article 12 of the Kyoto Protocol, has the dual aim of assisting developing countries in achieving sustainable development, and assisting industrialised countries in achieving compliance with their emission commitments.

The mechanism had a head start over its two competitor trading mechanisms, Joint Implementation and International Emissions Trading, as CDM projects could begin before the start of the Kyoto Protocol first commitment period in 2008. The first CDM projects were registered in 2004, and 2005 saw a “gold rush” for Certified Emission Reductions (CERs) from the EU emission trading scheme, with prices reaching over €20/CER. The financial crisis of 2008 led to a substantial reduction in European emissions and of the CER price as well, but CER prices stabilised between €11-13 in late 2009-2011.

The EU announcement that CER imports after 2012 would be limited to those generated by projects registered before 2013 or projects located in LDCs led to a stampede of project developers getting their projects registered before the end of 2012. As they had already incurred most relevant expenses by early 2012, the crash of CER prices to less than €1 in October 2012 did not impact the “bulge” of projects.

However, since January 2013, the inflow of new projects has dried up, as CER prices have fallen to historic lows of a few Euro cents. They are unlikely to recover to pre-2011 values soon, given that the emission commitments of the second commitment period are weak and cover only a small subset of countries. Moreover, import restrictions for CERs have proliferated, and competing mechanisms like the Japanese Joint Crediting Mechanism have emerged.

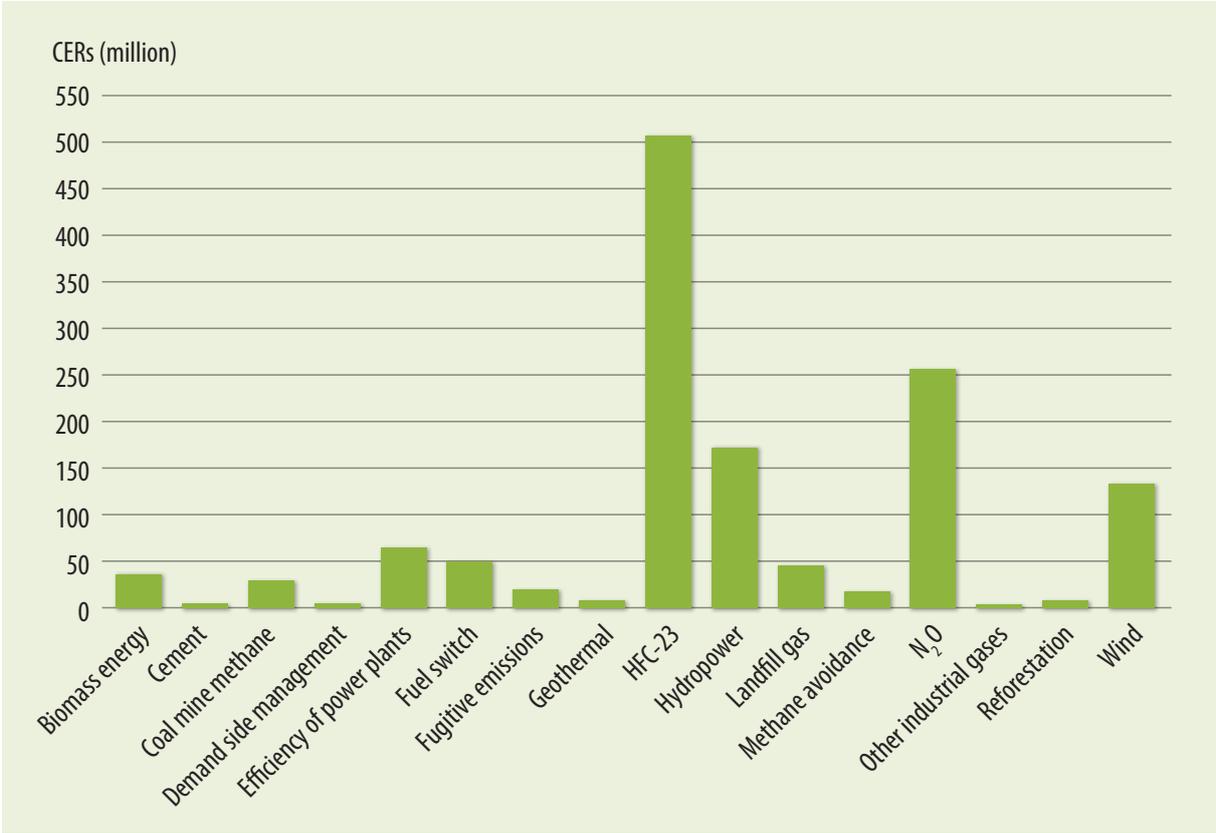
By 1 January 2014, over 11,000 projects had been submitted, of which 67% had been registered and 21% had failed to achieve registration, while 12% had not yet completed the process.<sup>1</sup> 93 countries host at least one registered project, but the bulk of projects (70%) are hosted by China and India. 23% of projects had already achieved issuance of CERs; total issuance had reached 1.36 billion CERs. Here, the dominance of China and India is even more striking, with 74% of issuance volume. The distribution of issuances across project types is shown in Figure 1 (on page 3). Average issuance reached 91% of the forecast amount; the level has been falling slowly over time. Issuance success varies widely between project types, from 38% for transport projects and 50% for landfill gas projects

---

<sup>1</sup> All data used in the following section are from the UN Environment Programme Risoe Centre (2014).

to 114% for nitrous oxide projects. The variation is due to technical challenges for some project types, especially in the context of methane recovery from landfills and agricultural waste management. Total investment in CDM projects reported in project documents reached US\$ 418 billion.

**Figure 1: CER issuance according to project type**



**The majority of the relevant academic literature does not find a relevant contribution of the CDM to sustainable development. This is particularly pronounced in early articles – for instance, Olsen (2007) and Sutter and Parreño (2007). Later studies such as Headon (2009), Boyd et al. (2009) and Alexeew et al. (2010) confirm this trend. The authors particularly criticise host country approval processes for not eliminating projects with doubtful sustainable development benefits. A shortcoming of the literature is the small size of samples used to derive far-reaching conclusions.**

In surprising contrast, The Energy and Resources Institute (2012) sees a positive impact of the CDM “on the various facets of sustainable development in host countries”. UNFCCC (2012) finds that almost all CDM projects claim multiple sustainable development benefits in their project documentation. An independent evaluation of the actual sustainable development performance of implemented CDM projects is unfortunately missing to date. Anecdotal evidence shows that the Programmes of Activities (PoAs) approach (which

allows for bundling of projects) leads to a better sustainability contribution than normal projects, as the majority of PoAs involve project types such as efficient cook stoves and rural lighting that are likely to have high sustainable development benefits, if implemented properly.

## Participation of LDCs in the CDM up to 2012

LDCs have so far had a limited participation in the CDM. Out of 46 LDCs, 19 (41%) have no CDM project, despite 11 of the latter having a Designated National Authority (DNA). The total number of registered projects in LDCs is 70, and 46 others are under validation. Thus the share of projects under validation is 40% for LDCs, compared to 15% for all CDM hosts. Only one LDC, Uganda, has more than 10 registered projects. Estimated CERs in LDCs up to the end of 2012 stand at 1.2% of the total (28.2 million); however, more than 60% of them come from gas flaring projects in Angola that are atypical for LDCs and have not yet been registered.

**Table 1: LDC participation in the CDM**

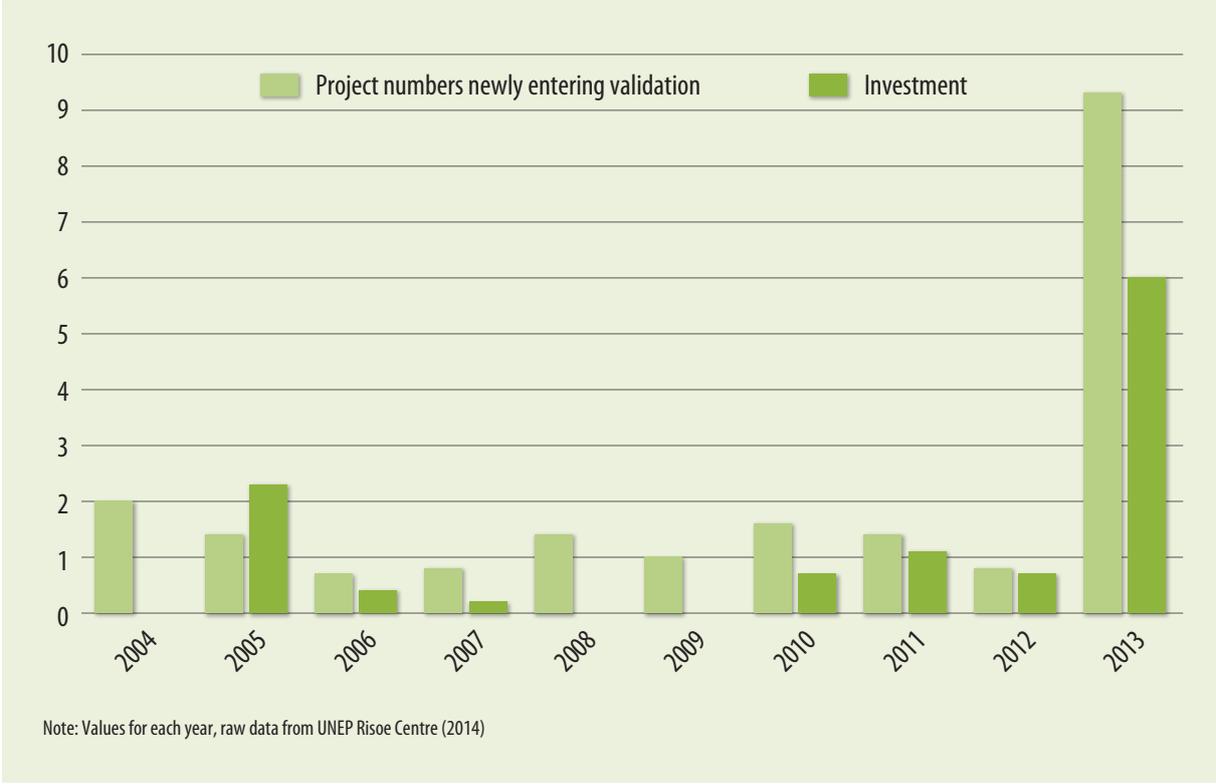
Country	Projects in validation	Projects registered	CERs estimated pre-2013 (million)	CERs issued (million)
Uganda	5	13	1.8	0.121
Cambodia	0	10	1.0	0.022
Laos	8	7	0.7	0.141
Nepal	2	6	1.0	0.484
Bangladesh	3	4	1.1	0.007
Senegal	1	4	0.2	0
Rwanda	0	4	0.1	0
Madagascar	0	3	0.1	0
Tanzania	3	3	1.6	0.093
DR Congo	2	2	1.0	0
Bhutan	2	2	0.5	0.0005
Zambia	4	1	0.4	0.044
Ethiopia	2	1	0.2	0.073
Myanmar, Sudan	1	1	0	0
Lesotho, Liberia, Mali, Niger, Sierra Leone	0	1	0.3	0.003

Note: Only countries with at least one registered project are listed. Data source: UNEP Risoe Centre (2014)

To date, only 0.9 million CERs have been issued for projects in LDCs – or 0.06% of the total. Asian LDCs are leading in terms of overall project numbers and issuance volumes (see Table 1 on the previous page).

The development over time shows that LDC shares were relatively high in the early phase of the CDM, fell during the “gold rush” phase in 2006-07, increased when the CDM market stabilised after 2009, fell when all project developers concentrated on getting non-LDC projects registered before the end of 2012, and soared in 2013 (see Figure 2 on page 5). The recent increase is likely due to EU import restrictions on CERs from non-LDC projects registered post-2012, and a turn towards PoAs and high-quality projects in order to cater for voluntary market buyers. Shares in investment have consistently been smaller than shares in project numbers, showing that projects in LDCs are of less than average size.

**Figure 2: Share of LDCs in project numbers entering validation and investment volumes (%)**



Lutken (2011) discusses whether other variables such as a) the number of projects divided by host country emissions, b) CERs/GDP, c) the number of projects divided by GDP, or d) share of country emissions covered by CERs are more appropriate to assess the distribution of projects than the shares in the global CDM presented above. For indicator a) he finds the LDCs beating all regions except Latin America, while for indicator b) they beat the Middle East and Latin America. As expected, for indicator c) LDCs arrive at the bottom. For

indicator d), LDCs beat all other country groups. Lutken concludes that LDCs have relatively strong participation in the CDM, but derive relatively limited revenues from the projects.

## **Performance of initiatives to boost participation of LDCs in the CDM**

---

Recently, several initiatives have been undertaken to increase participation, explicitly or implicitly, of LDCs and Small Island Developing States (SIDS) in the CDM. Their performance will be assessed through a review of relevant literature.

### **Capacity building**

Right from the beginning of the CDM, donors have engaged in multiple capacity building initiatives, and they were crucial to support the setup of DNAs. Okubo and Michaelowa (2011) have assessed capacity building initiatives in LDCs, finding that funds spent up to 2009 amounted to about €24 million, less than 30% of total capacity building funding spent in CDM host countries. This is due to the fact that donors found it more attractive to mobilise the CDM in countries which had a good business climate and which could provide a significant amount of CERs for their domestic emitters. Table 5 in the Appendix provides a detailed overview of LDC capacity building.

While the countries benefitting from capacity building support have had a higher level of participation in the CDM than those that did not, capacity building in LDCs did not trigger a significant level of project development. This shows that capacity building is necessary (especially for technical activities such as developing standardised baselines, coordinating and supporting PoAs, and collection of data and design of samples), but it is not sufficient to boost CDM participation. Arens and Burian (2012) therefore propose regional collaboration between LDC DNAs and targeted capacity building for relevant sectors in LDCs. Capacity building needs to address private sector entities, and will have limited effect unless combined with support for the underlying project or the project provider itself.

### **The concept of Programmes of Activities**

Since 2007, the PoAs approach allows for bundling of an unlimited number of projects (Component Project Activities, CPAs) over a period of 28 years with a single registration. As a result, transaction costs of the CDM process are significantly reduced, especially for small, distributed emissions mitigation activities. There has been a massive upswing of PoAs between late 2011 and mid-2012. By 1 January 2014, 446 PoAs had been submitted,

of which 55% were registered.

The distribution and type of PoAs are significantly different from the standard CDM projects, with a much larger LDC share of registered PoAs (10% compared to 1.3%) as well as a higher share of activities with high sustainable development benefits, such as distributed rural renewable energy or energy efficiency technologies. Seven LDCs that do not have a single CDM project are engaged as lead host country in PoAs (Burkina Faso, Burundi, Chad, Haiti, Malawi, Vanuatu and Yemen), and another five as secondary host country in PoAs (Benin, Guinea, Guinea-Bissau, Mauritania, Solomon Islands) (see also Table 6 in the Appendix). Stove efficiency and renewable lighting projects dominate, followed by renewable electricity. Total CER volumes estimated until 2020 are close to 40 million. However, CER issuance from PoAs has been negligible to date. Also, the number of CPAs added to PoAs has been relatively limited for the majority of registered PoAs, showing that the upscaling of PoAs is more difficult than initially thought.

### **Standardisation of methodologies**

The complexity of baseline and monitoring methodologies, especially with regards to data requirements for baseline setting and additionality determination, has been a major obstacle for LDC participation. Since 2006, these challenges have led to the submission of several baseline methodologies using benchmark approaches that serve to facilitate data collection and avoid complex investment analyses.

The approved consolidated methodology (ACM) 0013 for improved efficiency coal power plants was the first methodology to use a benchmark for baseline determination. The approved methodology (AM) 0091 for improving the energy efficiency of new buildings allows the use of benchmarks for both additionality and baseline, and to calculate it on a “whole buildings” basis, which substantially reduces monitoring requirements. However, the development of these two methodologies took Perspectives several years to complete, and required a significant amount of interaction and compromise with regulators. Other benchmark proposals have been rejected, most notably the cement sector benchmark proposed by the Cement Sustainability Initiative. The appropriate level of a benchmark, particularly for additionality, strongly depends on the characteristics of sectors and technology, and in the case of the cement benchmark, the Methodologies Panel conducting technical assessment of baseline and monitoring methodologies on behalf of the Executive Board managing the CDM, felt that it was not sufficiently conservative.

Besides benchmarks standardisation can also mean use of default factors for baseline

service levels, such as utilisation hours for a specific technology. Such default levels can take into account the concept of “suppressed demand”, which means that a higher service level than the pre-project service level is used for baseline determination. For example, in the context of water purification methodologies, the minimum water requirements stipulated by the World Health Organization are taken as default for the baseline service level.

Since 2011, the CDM Executive Board has engaged in a major drive for methodology standardisation, which could have far-reaching consequences. The CDM Executive Board first decided that four generic project categories – fuel switch, switch of technology and energy source, methane destruction and greenhouse gas formation avoidance – would be able to use standardised baselines and generic benchmarks. This was done without any consultation with CDM stakeholders. When compared to the earlier Secretariat proposal for the benchmarks, the Executive Board increased the benchmark stringency by ten percentage points – to 80% for energy for households, energy generation in isolated systems and agriculture and 90% for all other sectors. This high level means that, in most cases, the benchmark will be more stringent than baseline emission factors calculated through project-specific baselines. Generally, host country DNAs are responsible for submitting proposals for standardised baselines; the first such proposal was for charcoal production, submitted by the Ugandan DNA in early 2012. In early 2013, the first standardised baselines for the South African Power Pool grid and for charcoal production in Uganda were approved by the Executive Board. This allows project developers from these countries to apply the baseline emission factor without having to provide documentation for the data sources used.

Developing technology-specific benchmarks will be challenging, as technology performance curves will differ depending on the sector and technology, and whether one can really separate at a specific benchmark level the non-additional projects from additional ones. For default utilisation or baseline emission factors other than benchmarks, the bottom-up route through DNAs is likely to be cumbersome, as rules for data quality agreed at the 66th CDM Executive Board meeting (27 February - March 2012) are very stringent and complex and unlikely to be manageable for any but the most advanced DNAs. This could lead to a paradox. Poorer countries, especially LDCs, would further lose competitiveness compared to advanced countries that can generate data of the required quality and have DNAs that can undertake the required quality control procedures.

It is clear that standardisation of baselines will not be a panacea for the CDM, and that such standardisation could turn into a Pandora’s Box if not managed carefully. The dream of simple, global benchmarks is not realistic and eventually the difficult questions regarding additionality determination will have to be addressed on a rather disaggregated level. Regarding environmental integrity, it would be a catastrophe if a hastily decided

benchmark led to a large loophole for non-additional projects. However, in contrast, given the lacklustre performance of project-specific additionality testing to date, standardised baselines might become much more stringent than the current project-specific methodologies. If project-specific methodologies were then withdrawn, the project developers' dream of being relieved from the day-to-day hassle of collecting data would be turned into a nightmare.

Given this conundrum, the work on standardised baselines should proceed carefully and with the best technical advice possible. It is clear that it will take several years to find out which sectors and countries standardised baselines are appropriate for, and where the good old workhorses of project-based methodologies remain preferable. Using the same (default) approach and performance thresholds regardless of the sector, project type, and location will lead to an inadequate outcome (see Schneider et al. 2012). The use of constant performance benchmarks over time may fail to reflect ongoing or expected trends. Practical challenges abound with regard to data availability. Furthermore, since the use of standardised baselines is proposed to be voluntary, only project developers that could achieve more credits than using a project-based baseline may choose them, weakening the environmental integrity of the CDM.

### **Loans for project developers**

In order to increase participation in the CDM of underrepresented regions, the UNFCCC has set up a system of interest-free loans to cover the transaction costs of CDM project developers. The system has been operational for the last two years, and has a budget of US\$ 6.8 million (CDM Executive Board 2013). US\$ 0.3 million is paid to the United Nations Office for Project Services (UNOPS) for administration of the scheme. Loans can be granted for projects in countries with less than 10 registered CDM projects, in an LDC or in SIDS. Projects need to have a high probability of being registered and estimate to generate at least 7,500 CERs/year (LDCs) or 15,000 CERs/year (non-LDCs). Moreover, the use of an experienced CDM consultant without an economic interest in the project's CERs is necessary. Proof is to be provided that projects lack funding for CDM project development costs.

Differ (2012) sees a risk that LDCs will fail to benefit from the scheme, as there are many non-LDCs fulfilling the criterion of less than 10 registered projects, and loan criteria are strict. According to the UNFCCC, loans shall preferably be repaid in "one lump-sum installment scheduled 1 year after the verification process started". Furthermore, "if deemed necessary, the loan agreement shall include a loan guarantee clause (with guarantor) in order to optimise the loan repayment rate". Disbursement of the loan is only 10% upfront and the rest in installments up to a project's first issuance request. The way the payment

structure is set up incentivises using the cheapest possible consultant and third party validator, rather than the providers with the most relevant competence, for example, LDCs. This poses a risk to such projects.

By January 2014, the loan scheme was supporting 35 projects, of which 66% were located in LDCs (see Table 2 below). The majority of projects related to stoves and water purification.

**Table 2: LDC host countries for projects under the CDM loan scheme**

Country	Projects
Bangladesh, Tanzania	3
Malawi, Sudan, Uganda	2
Burkina Faso, Cambodia, Gambia, Laos, Madagascar, Mozambique, Myanmar, Nepal, Rwanda, Zambia	1
<b>Total</b>	<b>23</b>

Source: CDM Loan Scheme (2014)

### Regional CDM support centres

From 2011 onwards, the UNFCCC has set up five regional CDM collaboration centres (RCCs) in Western and Eastern Africa, Asia, Latin America and the Caribbean. Four RCC were operational by the end of 2013, and the last one is expected to be operational by the end of the first quarter of 2014. The RCCs are set up by the UNFCCC Secretariat and a local partner institution, with two Secretariat staff in Bonn as coordinators (CDM Executive Board 2013). RCCs are staffed with three to five experts, of which two are seconded by the UNFCCC Secretariat. The RCCs are to support existing projects and PoAs, contribute to the development of standardised baselines and develop new projects.

**Table 3: RCC parameters**

Location	Partner institution	Staff from partner
Lomé, Togo	West African Development Bank (BOAD)	2 senior, 1 admin
Kampala, Uganda	East African Development Bank (EADB)	1 senior, 1 admin
St George's, Grenada	Windward Islands Research and Education Foundation (WINDREF)	1 senior, 1 admin
Bogotá, Colombia	Corporación Andina de Fomento (CAF)	3 senior, 1 admin
Asia Pacific	NA	2 senior, 1 admin

Data source: CDM Executive Board (2013)

The overall budget of RCCs is close to US\$ 1 million in 2013. According to the CDM Executive Board (2013), the partnership approach has been highly successful in ensuring that UNFCCC staff can move rapidly into direct operations due to the physical infrastructure and local knowledge of partner institutions. However, the amount of time and effort in establishing the necessary legal and institutional frameworks was underestimated in the original project planning.

The impact of RCCs on CDM development has been reduced by the CER price crash taking place at the same time. Each RCC aims to move at least 12 projects/PoAs to registration or from registration to issuance. However, to date, moving of projects has been limited (see Table 4).

**Table 4: RCC support of CDM activities**

Activities (% of all activities in the region)	RCC Lomé		RCC Kampala		RCC St. George's	
Activities directly supported	46	23%	33	5%	10	16%
Activities moved forward	8	5%	2	1%	0	0%

Source: CDM Executive Board (2014)

**The activities of the RCCs in the context of work on standardised baselines and project leads are directly competing with private providers of such services both in those regions and beyond. In order to build capacity, RCCs should contract support from local service providers as far as possible and only engage in activities themselves where no local capacity exists.**

**Limitation of CDM for non-LDCs**

CERs generated in projects in non-LDCs registered after 2012 cannot be used in the EU Emissions Trading Scheme (ETS). The demand from the EU depends on whether it takes up a 20% or 30% emission reduction commitment in the 2013-2020 period. Total demand from the EU ETS can reach 1.7 billion tonnes carbon dioxide equivalent (t CO<sub>2</sub> eq) for the 20% case and 3.1 billion t for the 30% target (Castro and Michaelowa 2011), but this can be sourced from pre-2012 CERs and ERUs as well. So LDC CERs need to compete with these sources.

Given that 1.4 billion pre-2012 CERs and 0.9 billion Emission Reduction Units (ERUs) have been issued, there is a supply overhang, which is also reflected in the current low price level for CERs and ERUs. It will be very difficult, if not impossible, for projects in LDCs to produce CERs at costs lower than the current price level. The only earmarked demand is that governments of 12 EU member states can import up to 80 million CERs originating from LDCs or SIDS, but given that many of these governments are already close to their

2020 target levels, some of this demand may also not materialise. Still, Sweden and Finland have decided to continue their purchasing programmes, as well as Norway. The UK also will source CERs. Such government programmes target LDCs/Africa and are willing to pay a significantly higher price for CERs than the secondary CER market price. For example, the Swedish government pays €5-7/CER for newly generated projects in Africa/LDCs and around €3/CER for other projects. Some of these governments and the Swiss Climate Cent Foundation channel money through the World Bank Ci-DEV initiative, targeting emission reductions from distributed energy technology dissemination in LDCs, and at least partly under the CDM. But even under assumptions seen as relatively optimistic in the current market situation, Castro and Michaelowa (2011) find that preferential access for CERs from LDCs will be insufficient to overcome the barriers that have prevented CDM projects so far.

Proposals have been made to discount CERs from advanced developing countries, while continuing to grant full CERs to LDCs. Developing country-specific CDM abatement cost curves, Castro and Michaelowa (2010) find discounting has an impact on the competitiveness of individual CDM host countries. However, even with discounting, LDCs remain unimportant in terms of abatement potential if the financial, technical and institutional barriers for project investment in LDCs are not overcome. Discounting could become an important approach for ensuring contribution of new market mechanisms to global emission reduction.

## Lessons for the design of new market mechanisms currently negotiated under the UNFCCC

---

The UNFCCC's Durban Conference of Parties (COP) decided that two options for new market mechanisms should be pursued: a top-down "new market mechanism" (NMM) operating under authority of the COP<sup>2</sup>, and another bottom-up "framework for various approaches" (FVA) developed by countries "in accordance with their national circumstances".<sup>3</sup> While the Doha COP had the task of developing detailed rules for both mechanisms, the lacklustre development of climate policy during 2012 led to the issue being sidelined in the run-up to and during the COP. This was mainly due to two reasons:

- The unwillingness of the relevant countries to strengthen their emission targets, both under the Kyoto Protocol and the pledges under the Cancún Agreement
- The complete collapse of the CER price.

---

2 Para 83 of Decision 2/CP.17, referring to the Cancún decision on criteria for such mechanisms

3 Para 80 of Decision 2 CP.17

**With CER and ERU supply flooding the market, the appetite to create new supply sources has decreased massively.**

As a result, the Warsaw COP in 2013 did not take any decision on rules for NMM and FVA. Negotiation positions differed massively – from a moratorium on the NMM to a clarification on the key elements of the NMM rules. Regarding the FVA, even a compromise to set up an “information exchange platform” failed. Instead, the COP decided that governments could contribute to closing the pre-2020 ambition gap by the voluntary cancellation of CERs.

## NMM

The NMM is to be organised in a top-down fashion similar to the CDM. Thus, its rules can contain elements that safeguard the interests of LDCs. The set of criteria defined so far reads as follows:

- Voluntary participation
- Promotion of fair and equitable access for all Parties
- Complementing other means of support for Nationally Appropriate Mitigation Actions
- Stimulating mitigation across broad segments of the economy
- Environmental integrity
- Net decrease and/or avoidance of global greenhouse gas emissions
- Supplemental to domestic mitigation efforts
- Good governance and robust market functioning and regulation

While the stimulation of mitigation on a sectoral level may be difficult in an LDC context, sectors could be defined in a manner benefitting LDCs – for instance, including rural renewable energy provision, or household energy efficiency improvement. Such a definition would then allow applying the lessons from PoAs and upscale those to a level where specific policy instruments could be introduced that are sufficient to trigger replication of mitigation activities.

Differentiating the discounting of emission reductions according to country groups could become the instrument to ensure a contribution of the NMM to global emission reduction. The discount factors should be differentiated according to the development level of countries and their emissions – appropriate parameters will need to be negotiated.

## FVA

The negotiations have not clearly defined the purpose, scope and activities of the FVA as yet. Interpreted widely, they could be seen as an umbrella for market and non-market approaches. However, most observers see the FVA as a complement to the NMM and non-market mechanisms that will act in a bottom-up fashion. Many industrialised countries want to limit the role of the UNFCCC as far as possible, and tailor bilateral crediting schemes as per their interests. Criteria are thus much less defined than for the NMM:

- Real, permanent, additional and verified mitigation
- No double counting of effort
- Net decrease and/or avoidance of greenhouse gas emissions

Since most LDCs are not happy with the overall performance of the CDM to date, the development of the Japanese Joint Crediting Mechanism (JCM) since 2011 has been welcomed by them. However, initial lessons show that the JCM tries to promote the export of large-scale Japanese mitigation technologies, such as nuclear power and advanced steelmaking. Thus, its usefulness for LDCs might be limited given that these technologies are not appropriate in an LDC context. Three LDCs (Bangladesh, Ethiopia and Laos) have signed a MoU with Japan on the JCM to date.

Another component of the JCM is simplification of baseline and monitoring methodologies, by offering a spreadsheet with pre-defined parameters. Such an approach could remove a substantive barrier to mitigation project implementation. However, the buyer country might not have an interest to develop methodologies for technologies that are attractive in an LDC context, as large-scale technological solutions are preferred. This could make it more difficult to ensure the JCM's attractiveness for LDCs.

Transaction costs for host country governments under the FVA will increase given that the rules of each mechanism will be different and governments need to understand fully the differences. Given that bilateral approaches under the FVA will generate credit supply that will compete with credits from NMM and the Kyoto Mechanisms, in sum the FVA will be detrimental for LDCs. As a safeguard to prevent this, discount factors for the FVA could be set in a more stringent fashion than for the NMM.

Several developing countries are currently developing what could end up being FVAs, and submitting them to donors for support. This increases the likelihood that FVAs are aligned to their specific interests. However, the benefits from such an approach risk are being outweighed by the resulting fragmentation, potential overlaps between initiatives, and corruption risk.

## Conclusions for LDC negotiators

---

LDC representatives should ensure that the CDM is not ditched in favour of new, untested mechanisms. The CDM should coexist with any new mechanisms. The relative independence of the CDM Executive Board, the openness of the CDM for bottom-up initiatives, as well as the ability of the institutional structure to implement reforms rapidly, are key strengths of the CDM and should be retained in the context of new market mechanisms.

Therefore, LDC negotiators should ensure that NMMs use the governance structure of the CDM. For example, the CDM Executive Board should become the NMM Executive Board, and the CDM rules of submitting methodologies should translate to the NMM.

However, the NMM should go further than the CDM in standardising baseline and monitoring methodologies. The use of one single methodological approach for different sectors, project types and locations needs to be avoided, while more practical, robust and data-driven approaches need to be developed for specific project types based on actual projects. Standardised baselines should be mandatory once approved in order to prevent confusion and gaming by project developers. Proposed approaches need to be reviewed and road-tested prior to approval. Suppressed demand should be included in the form of default service levels as far as possible. LDCs should strive for no discount for credits from LDCs, while maximising discounts for the countries that have dominated the CDM in the past. Standardisation of the verification process should also be explored.

LDCs should be wary of the FVA, given that it is unlikely to generate benefits that could not be harnessed by the NMM or CDM and will probably focus on countries that can generate large amount of credits at low cost, while importing industrialised country mitigation technology. LDCs should at least ensure that application of the FVA in their country is led by host country criteria and not the commercial interest of the buyer country. A simple strategy would be that FVA rules should be as least as strict as NMM rules and that there should be thorough oversight by the COP. Acceptance of the FVA should be made contingent on a demand increase of credits. Also, discount factors should be higher for the FVA than for the NMM given the ability of countries to tailor the mechanism to their needs.

A necessary condition for any market mechanism to function, be it old or new, is sufficient demand for the credits. Thus LDC countries should press for a strengthening of Annex B country commitments under the “ratchet up” clause for the Kyoto Protocol’s second commitment period. Moreover, LDCs should support “graduation” of advanced developing countries to take up emission targets under the 2015 agreement. Then those countries would shift from being sources of credits competing with LDCs to being buyers of LDC credits.

While increasing the demand for credits through tougher targets is essential, supply side improvements will also be needed in order for LDCs to benefit more from the CDM, FVA and NMM. For this, it is not enough to provide, for instance, loans for CDM-specific project development costs. Given the substantial risks facing private investors in such countries, seed funding for companies implementing CDM projects and PoAs, and/or for the projects/PoAs themselves, will be needed. LDCs should therefore argue for targeted climate finance for underlying funding of CDM projects and PoAs. To the extent FVAs emerge that target the distribution of technologies benefiting the poor in LDCs, for example through subsidies for solar photo voltaic lights, solar home systems or clean cook stoves, underlying finance could also cover such providers and projects.

Finally, LDCs should press for a high adaptation fee (share of proceeds) on all market mechanisms, with projects in LDCs being exempt.

Thus, the overall issue linkages to be made would be as follows:

- Acceptance of the NMM should be made contingent on reforms in the CDM that improve LDC participation – for instance, default factors in baselines and further simplification of PoAs, and that the CDM Executive Board becomes responsible for the NMM.
- Acceptance of the FVA should be made contingent on strengthening of commitments by industrialised countries, ideally in the context of the Kyoto Protocol's second commitment period.
- The scale of contributions of the NMM and FVA to global reductions should be made contingent on advanced developing countries taking up commitments under the 2015 agreement. The stronger their commitments, the less the discount should be.

Given the technical nature of market mechanism negotiations, LDC negotiators should ensure that negotiations overcome the current impasse rapidly, so that CDM reforms and the responsibility of CDM Executive Board for NMM rules can be decided at COP 20 in Lima, Peru, in 2014. The Heads of State meeting organised by the UN Secretary-General in New York, in September 2014, should lay down principles for strengthening of industrialised country commitments as well as commitments of advanced developing countries under the 2015 agreement, which should then be brought into UNFCCC language at the Lima COP. The Paris COP in 2015 should then define target stringency for 2020, as well as the degree of overall discount for NMM/FVA and CDM credits post-2020.

---

## References

- Alexeew, J. *et al.* (2010). An analysis of the relationship between the additionality of CDM projects and their contribution to sustainable development. *International Environmental Agreements: Politics, Law and Economics*, 10, p. 233–248
- Arens, C. & Burian, M. (2012). *Integrating Africa's Least Developed Countries into the Global Carbon Market*. Wuppertal and Hamburg
- Boyd, E. *et al.* (2009). Reforming the CDM for sustainable development: Lessons learned and policy futures. *Environmental Science & Policy*, 12, p. 820–831
- Castro, P. & Michaelowa, A. (2010). The impact of CER discounting on the competitiveness of different CDM host countries. *Ecological Economics*, 70, p. 34–42
- Castro, P. & Michaelowa, A. (2011). Would preferential access measures be sufficient to overcome current barriers to CDM projects in least developed countries? *Climate and Development*, 3, p. 123–142
- CDM Executive Board (2013a). Status of CDM MAP 2013-2014 implementation, Information note, Cdm-EB74-AA-A01, Bonn
- CDM Executive Board (2013). Status of CDM regional collaboration centres initiative, Cdm-EB76-AA-A05, Bonn
- CDM Loan Scheme (2014). Project map, [www.cdmloanscheme.org](http://www.cdmloanscheme.org), accessed January 20, 2014
- Differ (2012). *The CDM loan scheme: Is it additional?*, Oslo, Norway, <http://www.differgroup.com/analysis/p/The-CDM-loan-scheme-Is-it-additional?ctl=Details&did=3&mid=6116>
- Headon, S. (2009). Whose sustainable development? Sustainable development under the Kyoto Protocol, the Coldplay Effect, and the CDM Gold Standard. *Colorado Journal of International Environmental Law and Policy*, 20, p. 127–156
- Lutken, S. (2011). *Indexing CDM distribution – levelling the playing field*. CD4CDM Working Paper No. 10, Roskilde
- Okubo, Y. & Michaelowa, A. (2010). Effectiveness of subsidies for the Clean Development Mechanism: past experiences with capacity building in Africa and LDCs. *Climate and Development*, 2, p. 30–49
- Olsen, K. (2007). The clean development mechanism's contribution to sustainable development: A review of the literature. *Climatic Change*, 84, p. 59–73
- Schneider, L. *et al.* (2012). *Standardized Baselines for the CDM – Are We on the Right Track?*, Policy Paper, Stockholm
- Sterk, Wolfgang; Arens, Christof; Hermwille, Lukas; Kreibich, Nicolas; Mersmann, Florian; Wehnert Timon (2013): Warsaw Groundhog Days, Wuppertal
- Sutter, C. & J.C. Parreño. (2007). Does the current Clean Development Mechanism (CDM) deliver its sustainable development claim? An analysis of officially registered CDM projects. *Climatic Change*, 84, p. 75–90
- TERI (2012). *Assessing the Impact of the Clean Development Mechanism on Sustainable Development and Technology Transfer*. The Energy and Resources Institute, New Delhi
- UNEP Riso Centre (2014). CDM Pipeline; PoA Pipeline, [www.cdmpipeline.org](http://www.cdmpipeline.org), versions of January 1, 2014
- UNFCCC (2012). Benefits of the Clean Development Mechanism, Bonn

## Appendix

**Table 5: LDC capacity building support and participation in the CDM**

Country	Active CDM projects	Established DNA	Website	Subsidies (m€)
Afghanistan	No			0.00
Angola	Yes	May 10	Yes	0.00
Bangladesh	Yes	June 04	No	1.00
Benin	No	February 05	No	0.92
Bhutan	Yes	May 03	No	0.15
Burkina Faso	No	June 06	No	0.49
Burundi	Yes	April 10	No	0.02
Cambodia	Yes	November 03	Yes	1.14
Central African Republic	No			0.00
Chad	No	March 10	No	0.00
Comoros	No	July 11	No	0.00
DR Congo	Yes	July 05	No	0.61
Djibouti	No	July 07	No	0.00
Equatorial Guinea	No	October 06	No	0.00
Eritrea	No	September 09	No	0.36
Ethiopia	Yes	March 06	No	0.36
Gambia	No	May 08	No	0.00
Guinea	No	March 06	No	0.02
Guinea-Bissau	No	February 10	No	0.00
Haiti	No	January 11	Yes	0.00
Kiribati	No			0.00
Laos	Yes	November 03	No	0.00
Lesotho	Yes	September 08	No	0.00
Liberia	Yes	July 05	No	0.00
Madagascar	Yes	December 03	No	0.56
Malawi	No	August 05	No	0.00
Mali	Yes	November 03	No	0.92
Mauritania	No	July 07	No	0.02
Mozambique	Yes	July 07	No	1.60
Myanmar	Yes	September 07	No	0.00
Nepal	Yes	November 03	No	0.12

Country	Active CDM projects	Established DNA	Website	Subsidies (m€)
Niger	Yes	June 04	No	0.05
Rwanda	Yes	December 05	No	0.02
Samoa	No			0.00
Sao Tome and Principe	No	August 12	No	0.00
Senegal	Yes	February 05	No	1.14
Sierra Leone	Yes	October 08	No	0.00
Solomon Islands	No	September 11	No	0.00
Sudan	Yes	July 06	No	0.00
Tanzania	Yes	July 05	No	1.60
Timor-Leste	No			0.00
Togo	No	May 08	No	0.07
Tuvalu	No			0.00
Uganda	Yes	September 05	No	1.21
Vanuatu	No			0.00
Yemen	Yes	November 03	Yes	0.22
Zambia	Yes	November 03	No	1.12

Sources: Last column Okubo and Michaelowa (2011), other data from UNFCCC

**Table 6: LDC participation in PoAs**

Country	PoA total	PoAs in validation	PoAs registered	CERs estimated pre-2020 (million)	Technologies
Bangladesh	7	3	4	6.6	1 Lighting, 1 Stoves, 1 Textiles, 1 Water purification, 1 Biogas from MSW, 1 Domestic manure, 1 Solar PV
Rwanda	6	3	3	2.0	3 Stoves, 1 Water purification
Senegal	5	3	2	2.4	3 Stoves, 1 each Lighting, Forestry
<i>Malawi</i>	5	3	2	2.3	<i>4 Stoves, 1 Lighting</i>
Nepal	5	4	1	1.3	3 Stoves, 1 each Hydro, Domestic manure (1 Stove)
Uganda	4	1	3	1.9	2 Stoves, 1 each Water purification, Landfill composting
Tanzania	4	3	1	1.4	1 each Stoves, Solar & wind & other, Lighting, Solar PV water disinfection
Ethiopia	3	1	2	1.5	3 Stoves
Zambia	2	0	2	1.6	2 Stoves
<i>Haiti</i>	2	2	0	0.6	<i>2 Stoves</i>
Madagascar	2	1	1	14.3	1 Stove
Togo	2	1	1	0.7	1 Stove
<i>Chad</i>	2	2	0	0.4	<i>1 Lighting</i>
<i>Burkina Faso</i>	1	1	0	0.2	<i>1 Stoves, 1 Biogas from MSW</i>
<i>Burundi</i>	1	1	0	1.8	<i>2 Stoves</i>
Sudan	1	1	0	0.3	1 Domestic manure
DR Congo	1	1	0	0.4	1 Stoves
<i>Yemen</i>	1	0	1	0.1	<i>1 Distribution efficiency</i>
<i>Vanuatu</i>	1	0	1	0.1	<i>1 Stoves</i>
<b>Total</b>	<b>56</b>	<b>32</b>	<b>24</b>	<b>39.9</b>	

Data source: UNEP Risoe Centre (2014). Countries in italics have not yet participated in the standard CDM.