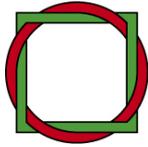


# JIKO POLICY BRIEF

No. 02/2015

## Financing Additional Emission Reductions What Can Be Learned from the CDM

Lukas Hermwille and Florian Mersmann



**Wuppertal Institute**  
for Climate, Environment  
and Energy

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# Summary

The CDM to date has been the most successful mechanism to support mitigation activities in developing countries. One of its core concepts is that activities must demonstrate their additionality, i.e. that they represent emission reductions beyond a given baseline scenario to ensure the environmental integrity of the Kyoto system.

Within the climate finance domain, the term 'additionality' has developed a fundamentally different meaning. Climate finance is to be additional to existing sources of (development) finance. Thus, additionality in this case does not directly apply to fundable activities, but to the finance donors. Both concepts have in common that additionality points to the seriousness of an effort, be it the level of funding in the latter, or the level of emission reductions in the former case.

Many have hoped that the CDM's additionality, if applied to the wider climate finance domain, can contribute to standardizing the funding criteria. In this paper, we therefore explore options of applying the CDM's to do just that. We highlight issues of environmental system integrity and efficient allocation of funding, and discuss potential limits of the CDM's additionality concept in its current form, if applied to climate finance in a system that does not have as well-defined borders as the zero-sum-game of tradable emission reductions under a capped environment which makes the clear attribution of emission reductions almost impossible. We propose some inroutes to adapting the current approach to additionality in this context, and pose a number of questions that can help to further discuss and refine the CDM's additionality concept to make it better applicable for a future, globally inclusive climate regime.

# 1 Introduction

Significantly higher ambition is needed to combat climate change and its already irreversible effects – current practice has simply not sufficed to reverse the climatic trend. This has consequences for the development of programmes and projects, but also for financial support: calling for a higher level of ambition in developing countries means that levels of funding need to shift to higher ambition levels as well.

In Copenhagen, developed countries agreed to provide USD 100 billion of climate finance annually from 2020 onwards. Not all of this money will come from public funds, and it is also dedicated to both mitigating climate change and adapting to its adverse effects. While at first sight the pledged amount appears to be an enormous sum, it quickly comes apparent that the available funds will be only a drop in the bucket of what is actually needed: The New Climate Economy Report (2014) estimates global investments in infrastructure in the world's urban, land-use and energy systems to amount to USD 6 trillion annually over the next 15 years. In order to “climate proof” these investments, i.e. choosing low-carbon alternatives wherever possible, per year an estimated additional USD 270 billion will be necessary (New Climate Economy 2014).

In other words, the amount of money available to support mitigation activities in developing countries and the amount that is needed to cover the cost of low-carbon infrastructure investments differ by an order of magnitude. Public climate finance will remain extremely scarce. It is therefore of utmost importance to allocate the available funding as efficiently as possible.

However, this efficiency can be interpreted in various ways. In a strict sense, one could argue that it is best to focus on those projects where reducing emissions is cheap, to purchase as many emission reductions as possible with the available money. Alternatively, one could prioritize those kinds of mitigation activities that promise to leverage large amounts of additional private money so as to maximize the total money available for low-carbon investments. A third option is to invest strategically in activities that promise to be actual game changers if fully developed. If it is possible to demonstrate the viability of certain more sustainable practices, they may become attractive in and off themselves and would not require support through public climate finance in the future. The idea of this last-mentioned approach would be to choose funded projects on the basis of their transformative potential, i.e. their ability to shift what currently is business-as-usual.

The CDM to date has been the most successful mechanism to support mitigation activities in developing countries. It has been particularly successful with respect to the first two aspects mentioned above. Through the CDM, a series of extremely low cost mitigation activities have been identified. Some of them, especially industrial gas projects, are so cheap that they rightly have been accused of windfall profits, and efforts have been made to find alternative ways to regulate these emissions more effectively outside the global carbon market. The CDM has also been extremely successful in leveraging private investments. The UNFCCC Secretariat estimated total investments to have reached USD 215 billion by June 2012. (UNFCCC 2012).

However, not all mitigation potentials are amenable to market-based mitigation instruments.

For example, CDM projects in the transport sector have hardly been put forward. The reason is that a large number of decentralized GHG sources are much more difficult to monitor than large point sources. Projects that focus on education or long-term shifts in urban infrastructure are equally difficult to fit into the form of a CDM project because it is often difficult to unequivocally establish a direct causal relationship between the project activity and the activity that causes the emissions.

Furthermore, the demand for CERs originates predominantly from the mitigation commitments of Annex I countries. For the current commitments, this source of demand is already saturated, and future commitments will most likely not reach levels that are nearly in the range of what is necessary to limit global warming to below 2°C.

Nevertheless, there are numerous lessons to be learned from the CDM that can inform and guide the development of an efficient and effective climate finance regime. In this policy brief we will focus on one particular aspect of the CDM: the additionality concept. CDM proponents must demonstrate that the project would not occur without the support of the mechanism. This provision is seen as central to the environmental integrity of the mechanism. It ensures that only those projects are credited that represent real emission reductions.

In section 2 we will give a brief review of the additionality concept contrasting the CDM approach with the often confused concept of “new and additional” climate finance, i.e. the demand for funding in the form of grants or loans that complement rather than substitute existing funding in the context of international development cooperation. In section 3 we will lay out the differences in the scope and purpose of the CDM vs. wider climate finance instruments and discuss whether or not these differences have implications for the applicability of the CDM’s additionality concept in the cli-

mate finance domain. Section 4 will discuss the limits of the additionality concept, paying particular attention to its implications on the objective transformative change that has been promulgated by various climate finance instruments such as the Green Climate Fund or the NAMA Facility (supported by Germany, the United Kingdom, Denmark, and the European Commission). Section 5 concludes.

It is important to note that this policy brief does not set out to give a final answer to the questions raised above. Instead it lays out the challenges, identify and specify the need for further research, and provide a structure for a continued debate.

## 2 Additionality – A Brief Review of the Concept

The term “additionality” is an ambiguous one, especially when it comes to climate finance. To avoid confusion, we will briefly review and contrast the varying concepts of additionality.

### 2.1 Additionality of Finance

The call for “new and additional” climate finance is rooted in basic provisions of the UNFCCC (Article 4.3). It has been made more concrete in the Copenhagen Accord in 2009, when developed countries committed to a fast-start financing period between 2010 and 2012, providing USD 30 billion to developing countries, and a long-term goal of jointly mobilising USD 100 billion annually from 2020 onwards. The funding provided was to be “new and additional” in so far as it was to exceed previous climate financing levels, and additional to existing development finance.

However, a clear-cut definition of climate finance additionality has never been achieved. The term has always been politically contested, and employed with varying degrees of stringency by different countries and country groupings under the climate regime.

One of the underlying problems that make the additionality term complicated to grasp is the lack of distinction between development and climate finance, as they share both scope and recipients. It is therefore often highly difficult to establish where development finance ends, and where climate finance begins.

There have been various options to find a definition of additionality of climate finance. At the

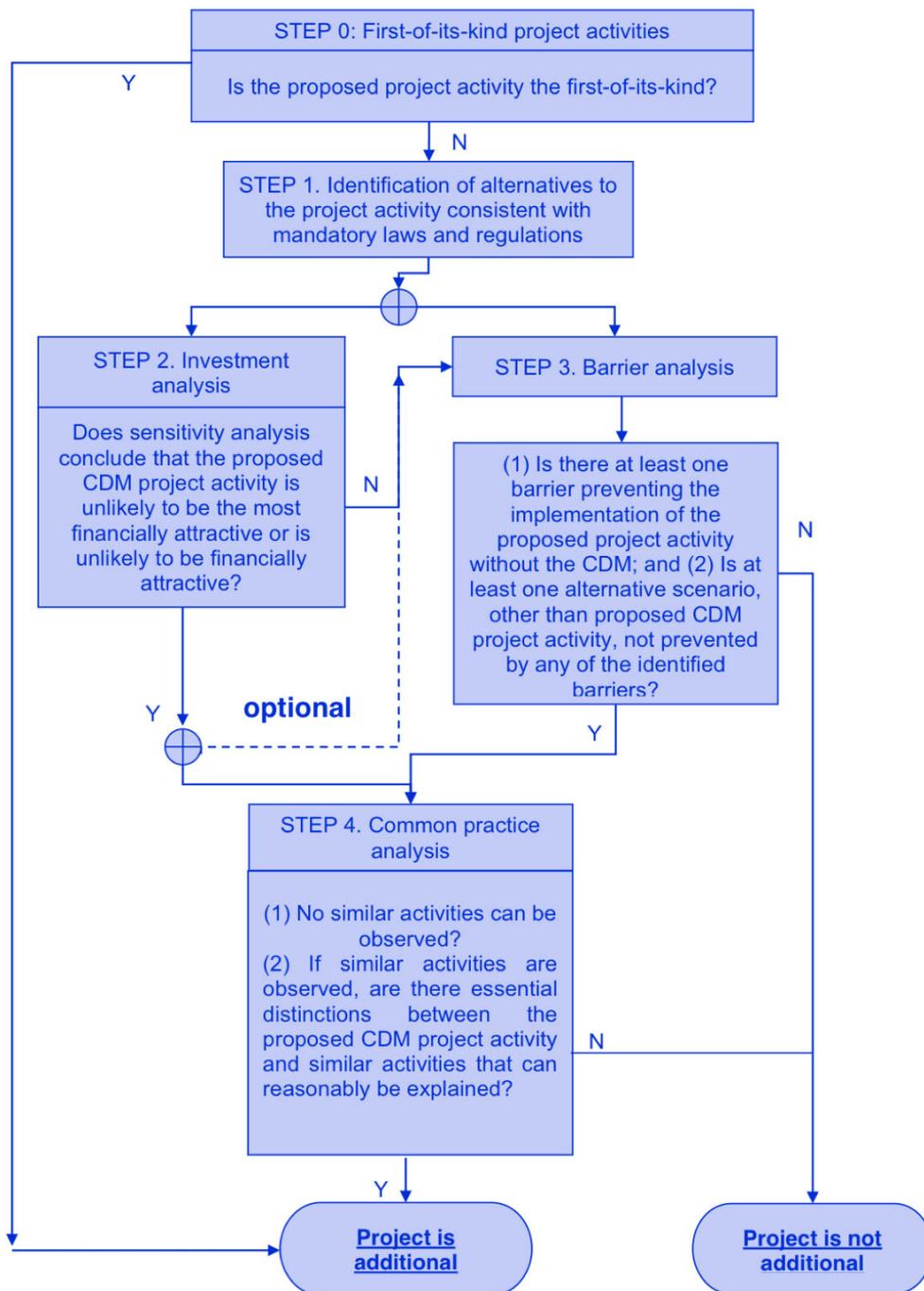
heart of these options is always an attempt to define a funding baseline against which the level of additional finance can be compared.

In the fast-start finance context, many developed countries have resorted to using the 2009 level of climate funding (as reported e.g. within the OECD-DAC Creditor Reporting System, CRS) as a baseline against which rising levels of finance can be measured. However, this does entail the risk that funding is diverted from existing finance instead of actually raising the foreign aid budget (Brown et al. 2010; Vieweg et al. 2012).

A compelling option would be to simply count any and all finance as additional that exceeds the internationally-agreed commitment of developed countries to provide 0.7% GNI as development finance. While this could at least partly solve the problem of funding overlaps between development and climate finance while also avoiding the danger of shifting funds from development in order to meet a climate finance target, many developed countries will object to such a definition, as most of them currently do not reach the committed level of development finance.

### 2.2 Additionality of Mitigation

Under the Kyoto Protocol, the additionality concept has been introduced in the context of the flexible mechanisms CDM and JI. Annex I countries, i.e. countries that have taken up binding quantified emission limitation and reduction obligations, may use credited emission



**Figure 1:** Flowchart of the additionality determination procedure as laid out in the 'Tool for the demonstration and assessment of additionality'. Source: CDM Executive Board 2012.

reductions for the purpose of meeting their obligations from projects that provide a reduction in emissions or an enhancement of removals by sinks, that is “additional to any that would otherwise occur” (UNFCCC 1997, Art. 6 §1(b) and Art. 12 §5(c)).

These requirements were elaborated on and operationalized in the Marrakech Accords. For

emission reductions under JI it is at the discretion of the host party of the project to verify the additionality of the credited activity. The rationale behind this decentralized approach is the following: any Emission Reduction Unit (ERU) issued to a project activity would reduce the amount of Assigned Amount Units (AAUs) of the country that is left to comply with its own

mitigation obligation. Under the assumption that parties will eventually make full use of their assigned amount, the issuance of ERUs therefore does not increase the overall emissions of Annex I countries. If AAUs are scarce and compliance is uncertain, host countries will perceive the issuance of ERUs as a significant economic risk. In this case, Shishlov et al. have argued, “[...] *additionality becomes more a matter of economic efficiency than environmental integrity*” (Shishlov, Bellasen & Leguet 2012, p. 1).

The case is different for additionality in the CDM. In contrast to the ERUs generated under JI, Certified Emission Reductions (CERs) from the CDM, originating from developing countries that are not subject to binding emission reduction obligations, do increase the amount of emissions that industrialized countries are allowed to emit under the restrictions of their mitigation commitments. CERs that do not reflect real emission reductions would inflate the emissions cap of industrialized countries and therefore threaten the environmental integrity not only of the CDM but of the entire Kyoto Protocol.

The additionality concept within the CDM is at the centre of determining whether or not a proposed project does, in fact, promise actual emission reductions. Building on the Marrakech Accords, the CDM Executive Board has elaborated an extensive regulatory framework for the determination of additionality. For individual projects, the ‘Tool for the demonstration and assessment of additionality’ provides a stepwise approach (CDM Executive Board 2012). According to this tool, a proposed CDM project can be considered additional if it is a) the first of its kind in a given host country, b) financially not viable or less attractive than more emission intensive alternatives AND the proposed project activity is not common practice in the country/region, or c) the project faces other barriers to implementation that may be overcome with the help of revenues from the sale of CERs AND

the proposed project activity is not common practice. Figure 1 illustrates this stepwise approach.

More recently, the CDM Executive Board has been tasked to develop more standardized approaches for the demonstration of additionality. With the introduction of the Standardized Baselines, it is now possible to develop a baseline scenario and derive a positive list of technologies, fuels or feedstocks that are deemed automatically additional with a standardized approach based on the performance of the various technologies that produce the output of the sector and their respective market penetration rate (CDM Executive Board 2011).

Despite these efforts, the additionality concept, the difficulties of determining additionality ex ante and particularly the possibility of project proponents to manipulate additionality testing have been a bone of contention for many CDM stakeholders (e.g. Schneider 2009). Determining additionality in the CDM inherently requires a hypothetical scenario of what would have happened in the absence of the project and this hypothetical scenario will always be open for manipulation, as it is impossible to prove.

## 2.3 Commonalities and Differences

The central difference between the two additionality concepts is the following: In the climate finance domain, additionality is related to donor countries’ political commitment to provide more financial resources. Measurement of additionality in this case is extremely problematic due to the fuzziness of the baseline against which additionality is assessed.

In the CDM, on the other hand, additionality is related to concrete GHG emissions at the project level. Assessing additionality is a technical necessity to maintain the mechanism’s environmental integrity. Assessment of additionality

ty again is difficult, but at least an operationalization was realized and it is now possible to determine reasonably clearly the baseline against which additionality is assessed even if problems of credibility of the baseline remain.

Both variations of the additionality concept have in common that *„In both cases, additionality establishes a measure of seriousness, an indicator of a real effort. The effectiveness of such efforts is measured against a counterfactual reference scenario or regulatory requirement. The counterfactual nature of the concept makes it impossible to ever prove additionality. The testing of additionality generally involves the establishment of a baseline against which reality is gauged.“* (Streck 2011, p. 158f).

The implications of this common core of the additionality concept will be discussed in section 3 below.

# 3 System Integrity vs. Efficient Allocation

As described above, for the CDM additionality is a central concept to ensure environmental integrity. Without provisions to ensure that projects are registered that represent real emission reductions is essential to maintain the balance of the “zero-sum-game” that the CDM is: certified emission reductions in developing countries entitle the owner of those certificates to emit one more tonne of CO<sub>2</sub> under the capped environment. Without additionality, the CDM would degrade into a cheap buyout and effectively deprive the Kyoto Protocol of any real ambition to reduce emissions.

This is different for the case of climate finance. The zero-sum-game of the CDM follows the Kyoto logic of a world divided in industrialized countries with binding mitigation obligations and developing countries without such obligations. This division, enshrined in the Convention’s annexes, has always been contentious. Many have argued that the United States did not ratify the Kyoto Protocol because developing countries, in particular China, were not obliged to reduce emissions.

For the climate agreement to be agreed by the end of 2015 in Paris, the parties to the Convention have agreed that it shall be applicable to all and each and every country specify “intended nationally determined contributions”. It can thus be expected that in the future all countries will have some form of mitigation commitment whatever the differences in the content and the rigidity of these commitments may be. If, however, developing countries have themselves commitments, any certified emission reduction that allows to increase emissions elsewhere has an implication for the GHG inventory of the

host country. A global climate treaty in which all countries take on some form of commitment erases the basis of the pure zero-sum-game that the CDM is based on.<sup>1</sup>

More importantly, many mitigation activities proposed by developing countries will be conditional on some form of technological and/or financial support. In other words, climate finance is directly bound to the various types of commitments developing countries propose. Since the commitments, or rather contributions, will be put forward in the context of international negotiations, it is hard to argue what part of the contribution is additional and what not. The act of Parties committing to the proposed contributions in the form of legal obligations is performative in that it defines these commitments as additional. In other words, by agreeing to commitments conditional to external support in the context of international negotiations, these commitments are defined as additional per the agreement. In practice this is further complicated by the fact that domestic mitigation targets are often expressed in terms of percentage points below a baseline. This leaves open the question, what parts of a mitigation action is additional and needs support and which part should be carried under the domestic target unconditionally.

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<sup>1</sup> There may remain room for a CDM-like crediting mechanism under the new agreement, if some countries take on sectoral commitments or commitments to introduce certain policies and measures only. In this case, those sectors that are not directly affected or indirectly by the respective policy and measure may serve as a potential source for certified emission reductions.

Nevertheless, at the operational level, the CDM's additionality concept or a slightly revised variety thereof could serve as a criterion to prioritize activities over others. As stated in the introduction, international public climate finance will remain scarce. In the climate finance domain, an understanding of additionality of actions may help to allocate these resources efficiently and thus maximize their effectiveness in terms of reducing emissions per funds available. How this could be implemented in practice remains to be explored.

# 4 The Limits of Additionality in Climate Finance

In this chapter, we will discuss some of the conceptual problems arising if the CDM's additionality concept is transposed to the wider climate finance domain. The issues are arranged in no particular order.

## 4.1 The Problem of Attribution of Emission Reductions

Developed countries that provide public funds in order to support mitigation activities in developing countries have a desire to clearly account for the amount of emissions that have been reduced. Typically, public funds have to be provided through annual public budgets. Legislators will hold the executing bureaucracies accountable for what has been achieved with the money provided in the last budget cycle before agreeing to the next budget.

Hence, there is strong demand for a quantitative evaluation of supported mitigation activities in developing countries. CDM projects provide a very clear cut ex-ante assessment of the expected impact in terms of emission reductions. However, if mitigation activities become more complex, various activities synergistically target similar mitigation options and/or international climate finance covers only part of the total investments, it becomes much more difficult to directly link emission reductions to funds provided by developed countries.

Consider the following case: In order to increase the energy efficiency of the building sector, a country introduces a set of activities to promote

energy efficiency retrofits of residential buildings:

- an information campaign;
- capacity building for architects, construction companies, and local craftsmen;
- consultancy services for home owners;
- special purpose low interest loans.

Now consider the case of a home owner who in the first place receives a leaflet of the information campaign and starts thinking about retrofitting his estate. He then makes an appointment at the local consultancy service and learns more about the special purpose loans and local craftsmen that have been trained accordingly. Finally, he applies for a low interest loan and contracts a specially-trained construction company to carry out the works.

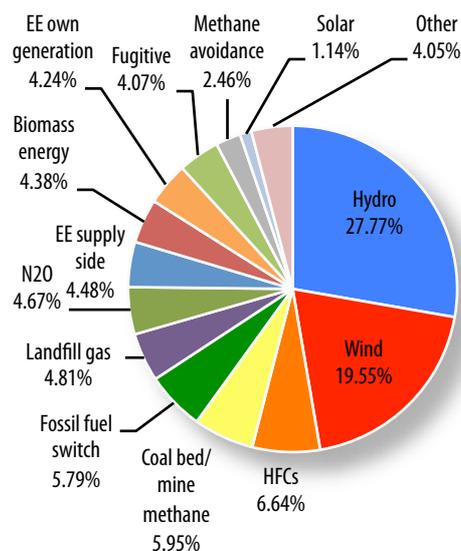
It is impossible to attribute the emission reductions resulting from the improved energy efficiency of the building to any one single activity. In the described case, each and every component was a necessary condition for achieving the emission reductions and none of the components is sufficient in itself to induce the activity. If all of the above activities are integrated into one single programme and funded by one source of finance, attributing the emission reductions achieved to every dollar spent on the programme may be feasible. This is, however, not the case if the various components stand separately and are funded through a variety of programmes and funding opportunities.

The CDM's additionality concept can aid in this dilemma to some extent. Through determining a business-as-usual scenario, it defines which activities are necessary and sufficient to realize the emission reduction. Such an approach may be appealing for individual projects, but may be hard to maintain if the scope of the targeted activities is expanded to entail economic sectors or even entire economies. It needs to be noted that determining additionality for entire sectors or even countries comes with a number of caveats (cf. Sterk and Wittneben 2005).

## 4.2 Efficiency vs. Effectiveness?

Proponents of the CDM's additionality concept argue that it is key to ensure climate finance is allocated in an efficient way (Hermwille, Wehnert and Sterk 2014). Indeed, the CDM has proven to be efficient in identifying low cost mitigation activities. However, this success builds on a relatively small number of different types of projects. Nearly half of the expected total Certified Emission Reductions generated under the CDM originate from hydro power or wind power projects. Other prolific project types include industrial gases (HFCs and N<sub>2</sub>O), avoidance of GHG emissions other than CO<sub>2</sub> (coal bed/ mine methane, landfill gas, methane avoidance, fugitive), fossil fuel switch, energy efficiency measures (see figure 2).

All of these mitigation options produce rather immediate results and do not require a fundamental restructuring of physical infrastructures or consumption patterns. CDM-like additionality demonstration may thus be viable for projects that have a similarly short 'payback period' of funding vs. achieved GHG mitigation.



**Figure 2:** Shares of total expected CERs by type of project. Source: UNEP DTU (as of February 2015).

It may be very difficult to apply the same concept to projects whose effects are expected to be much more long-term. More generally, it is doubtful whether activities aiming at structural changes in infrastructure and the broader economy can be meaningfully measured in terms of GHG emission reductions. The crux is that there is most likely a long time gap between the initial activity and the realization of any emission reductions. This time gap, again, increases uncertainty for setting baselines and makes it very difficult to clearly attribute emission reductions to individual money invested.

A focus on short-term efficiency, if applied too stringently, may impede mitigation activities that take effect only in the long term. But CDM-like additionality may be efficient for types of mitigation activities that show more immediate results. Thus, the additionality concept can have a limited, but nevertheless important role to play for the efficient allocation in these kinds of projects. For activities aiming at long term and complex impacts, the CDM's additionality concept, at least in its current form, in our view does not provide suitable indicators.

### 4.3 Additionality and Transformative Change

The issue of scale has been touched upon in the preceding sections. The CDM was designed as a mechanism that covers individual projects within a wider economic sector. It was hoped that through positive experiences and the transfer of technological know how individual projects would create positive spill-overs into the wider economy of the host country. Anyhow, no one expected the CDM to singlehandedly transform whole industrial sectors or even entire economies. Instead, various attempts have been made to increase the scale of the CDM including through the introduction of programmes of activities (PoAs) and standardized baselines (SBs). Ultimately, the New Market Mechanism that has been defined under UNFCCC also is the result of this exact desire.

Despite these developments, the CDM's individualistic and project-based approach contrasts with the requirement to fundamentally restructure physical infrastructures in both developing and developed countries; to develop sustainable economic systems. This require-

ment is also reflected in the UNFCCC's finance mechanism: For example, the Green Climate Fund has been given the mandate to promote a "paradigm shift" and has subsequently elaborated a criterion to determine the paradigm shift potential of proposed projects. It defines this paradigm shift as a shift to low-emission sustainable development pathways. (Green Climate Fund 2014; see also Hermwille, Obergassel & Arens 2015).

The paradigm shift criterion, if considered rigorously, in a way is incompatible with the additionality criterion of the CDM. While additionality demonstration requires the determination of a hypothetical business-as-usual scenario against which a proposed activity is assessed, the paradigm shift criterion requires to have a direct impact on what is business-as-usual. Funded activities must demonstrate how they contribute to changing the state-of-the-art.

This argument may be illustrated by the discussion of E+/E- policies in the CDM (see box below). Since the CDM's early days, it has been argued that the CDM could prevent countries from introducing climate friendly policies so as not to diminish their CDM potential. Climate

#### National Policies and the CDM – The Issue of E+/E- Policies

There has been a lengthy discussion whether or not (new) national policies should be taken into account in the development of the reference scenario of CDM projects. If a country introduces a policy to reduce GHG emissions (E- Policy) this potentially reduces the potential to generate CERs for a CDM project. It has been argued that the CDM would thus create a perverse incentive for countries not to introduce climate protection policies in order to protect their CDM potential. Similarly, countries could introduce (or refuse to abolish) policies that increase GHG emissions (E+ Policies; e.g. fossil fuel subsidies). On the other hand, not including E+/E- policies could mean significant over crediting for some projects and thus a threat to the environmental integrity of the CDM.

To avoid such perverse incentives, it is common practice in the CDM that E- policies do not need to be taken into account if the respective policy was introduced after the adoption of the CDM Modalities and Procedures (November 2001). For E+ policies the cut off date is the adoption of the Kyoto Protocol (December 1997).

For a recent discussion of the E+/E- policies issue see Spalding-Fecher (2013).

friendly policies can affect the viability of proposed CDM projects in two ways. First, the policies can have an effect on the baseline emission scenario against which emission reductions are calculated. If the policy reduces the baseline emissions, this reduces the amount of CERs that can be generated and sold. Second, a policy can have an effect on the relative prices of competing technologies (e.g. through subsidies) and hence change the conditions for the investment analysis conducted as part of the additionality demonstration.

This discussion illustrates the implications of the additionality concept. The implications become the more complex the more various policies interact. If the stated goal of international climate finance is to induce a fundamental shift of entire economic infrastructures, it becomes nearly impossible to analytically separate the effects of the different instruments. It is therefore hard to imagine how to apply the CDM's narrow additionality concept, if entire policies are to be funded instead of individual projects.

## 4.4 Issues of Practical Applicability

The tools for additionality demonstration that have been developed for the CDM may be difficult to be applied in practice. A central component is investment analysis (see section 2 above). However, if climate finance is employed to support the introduction of policies, it may be difficult to apply. Typically, when a policy is introduced, the cost of this policy is borne by the private sector (Okubo et al. 2011). Especially for policies that create indirect incentives (e.g. emissions trading) it is virtually impossible to calculate the investment cost ex-ante on an aggregate level.

Also, it is hardly ever the case that a policy serves a single purpose only. It is at the core of democratic systems to negotiate and compro-

mise over policies. The result is typically that policies are designed to satisfy a wider range of interests. In fact, this is usually a good thing as policies that are built on various motivations have a higher likelihood of being implemented and maintained over a long period. Integrating policies to serve climate mitigation as well as wider sustainability objectives such as water and resource management, air pollution, poverty alleviation, etc. is a promising strategy.

However, such an integration of climate protection and wider sustainable development co-benefits is to some extent at odds with a narrow interpretation of the additionality concept: one could argue that the more co-benefits motivate the introduction of a policy, the more likely it is that the policy would have been introduced without explicit climate finance, i.e. it is not additional. This may become problematic if barrier analysis is applied to demonstrate additionality of a proposed mitigation activity (Okubo et al. 2011).

# 5 Conclusions

This policy brief started out with a brief review of the additionality concept as applied in the domains of CDM versus wider climate finance. In the CDM, additionality is used to determine whether or not emission reductions claimed by a project would have occurred without the support of the mechanism. In climate finance, additionality typically refers to the funding that is provided. The term “new and additional” climate finance is used to make sure that developed countries do not simply re-label established official development aid.

After clarifying the concept we discussed implications of the CDM's additionality concept. Should it be applied also to wider climate finance? Can it contribute to allocating climate finance more efficiently? What are the implications for such an approach and what are its potential limitations?

In section 3 we started our analysis by discussing the ends the additionality concept is meant to serve. In the CDM world, additionality is core to ensure environmental integrity of the mechanism. Only if CERs represent real emission reductions, the zero-sum-game of the CDM plays out: CERs entitle the owner to emit extra CO<sub>2</sub>. If these CERs are, however, non-additional, the absolute amount of emission increases above the agreed level.

For wider climate finance though, there appears no such strict need for additionality. Additionality can help to make sure that scarce financial resources are allocated more efficiently, to make sure that the maximum amount of emission reduction is being achieved with the available funding.

Finally, we sketched out open questions with respect to the applicability of the additionality concept in the wider climate finance domain:

- Donor countries demand a high degree of accountability with regards to the funding provided. Can the additionality concept help to increase the transparency and enable such accountability? And to what extent?
- The CDM has been very successful in realizing low cost emission reductions. However, it was most prolific in a very limited number of different project types only. Would a stringent application of the CDM's additionality concept preclude important mitigation options, especially those that take effect only in the long term?
- International climate finance is increasingly expected to not only support scattered and selective projects and activities, but to induce a “paradigm shift” towards sustainable development. How can the additionality concept which crucially rests on the determination of a business-as-usual scenario be reconciled with the aspiration to ultimately alter what is business-as-usual?
- Last but not least, we sketch some of the practical problems if the techniques for additionality demonstration that have been developed under the CDM are applied to approaches that go beyond individual projects. How can an investment analysis be meaningfully executed if the cost of the introduction of a policy is distributed and born by the private sector? How can a barrier analysis be conducted if policies serve multiple purposes and integrate climate mitigation and wider sustainable development objectives?

It is beyond the scope of this policy brief to give definitive answers to all these questions. Instead, we aim to sketch out the various dimen-

sions of the issue and provide a structure for the future debate.

The questions laid out above demonstrate that it is impossible to apply the additionality concept immediately and unmodified to the wider climate finance domain. Significant room for further research remains. Three of the most salient research questions are the following:

- Within a portfolio of financially supported mitigation activities, for which types can a notion of additionality improve the efficiency of the allocation of funds?
- How can and should the tools of additionality demonstration be modified to accommodate the needs for mitigation activities that go beyond individual projects?
- The CDM comprises a rich toolbox full of robust methodologies to measure, report and verify emission reductions. Under an alternative comprehension of additionality, which of the methodologies may be helpful to improve the accountability of supported mitigation activities?

The CDM deserves merit for its success as the first and to date most successful mechanism to limit emissions on a global scale, and has broad potential to be further developed to account for future mitigation activities that do no longer constitute a zero-sum game. We firmly believe that its tools and methodologies can be used as a starting point to be adapted for the coming, globally inclusive climate regime. This paper provides a number of important questions on the limits, but also the potential of the CDM's additionality concept. We hope that it opens up room for researchers and practitioners to engage in a constructive debate on its future application.

# References

- Brown, J., Bird, N., & Schalatek, L. (2010). *Climate Finance Additionality: Emerging Definitions and their Implications* (No. 2). ODI. Available online at <http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/6032.pdf>.
- CDM Executive Board. (2011). *Guidelines for the Establishment of sector specific Standardized Baselines – Version 2*. UNFCCC. EB65, Annex 23.
- CDM Executive Board. (2012). *Tool for the demonstration and assessment of additionality*. UNFCCC. EB 70, Annex 8.
- Comstock, M.; Davis, S.; Wyns, T. (2012). *Criteria for evaluating supported NAMAs*. Washington, DC: CCAP - Center for Clean Air Policy.
- Green Climate Fund. (2014). Decision of the Board – Seventh Meeting of the Board 18-21 May 2014; Annex XIV: Initial Investment Framework. Document GCF/B.07/11.
- Hermwille, L., Wehnert, T., & Sterk, W. (2014). *Results-based Finance: Neue Wege in der Klimafinanzierung - Auswertung des Fachgesprächs am 18. Juni 2014, Berlin*. Berlin: Wuppertal Institute.
- Hermwille, L., Obergassel, W., & Arens, C. (2015). *Transformative Potential of the New Market Mechanism* (JIKO Policy Paper No. 01/2015). Wuppertal: Wuppertal Institute. Available online at [http://www.jiko-bmub.de/english/background\\_information/publications/doc/1486.php](http://www.jiko-bmub.de/english/background_information/publications/doc/1486.php).
- New Climate Economy. (2014). *Better Growth Better Climate - The New Climate Economy Report*. Washington: The Global Commission on the Economy and Climate.
- Okobo, Y., Hayashi, D., & Michaelowa, A. (2011). NAMA Crediting: How to Assess Offsets from and Additionality of Policy-based Mitigation Actions in Developing Countries. *Greenhouse Gas Measurement & Management*, (1), 37–46.
- Schneider, L. (2009). Assessing the additionality of CDM projects: practical experiences and lessons learned. *Climate Policy*, 9(3), 242–254. doi:10.3763/cpol.2008.0533.
- Shishlov, I., Bellassen, V., & Leguet, B. (2012). *Joint Implementation: A Frontier Mechanism within the Borders of an Emissions Cap* (Climate Report No. 33). Paris: CDC Climat. Available online at [http://www.cdclimat.com/IMG/pdf/12-03-06\\_climate\\_report\\_33\\_-\\_joint\\_implementation.pdf](http://www.cdclimat.com/IMG/pdf/12-03-06_climate_report_33_-_joint_implementation.pdf).
- Spalding-Fecher, R. (2013). *National Policies and the CDM Rules: Options for the Future*. Carbon Limits. Available online at <http://www.energimyndigheten.se/Global/Internationellt/Carbon%20Limits%20-%20National%20Policies%20and%20CDM.pdf>.
- Sterk, W., & Wittneben, B. (2005). *Addressing opportunities and challenges of a sectoral approach to the Clean Development Mechanism* (JIKO Policy Paper No. 1/2005). Wuppertal: Wuppertal Institute.
- Streck, C. (2011). Ensuring New Finance and real Emission Reduction: A Critical Review of the Additionality Concept. *Carbon and Climate Law Review*, 5(2), 158–168.
- UNEP DTU. (2015). CDM Pipeline – February 2015. Retrieved from <http://www.cdmpipeline.org/publications/CDMPipeline.xlsm> [accessed 2 March 2015].
- UNFCCC. (1997). *Kyoto Protocol to the United Nations Framework Convention on Climate Change*.

UNFCCC. (2002). *Report of the Conference of the Parties on its Seventh Session, Held at Marrakesh from 29 October to 10 November 2001*. Document FCCC/CP/2001/13/Add.2.

UNFCCC. (2012). *Benefits of the Clean Development Mechanism*. Bonn: UNFCCC.

Vieweg, M., Esch, A., Griebhaber, L., Fuller, F., Mersmann, F., Fallasch, F., & De Marez, L. (2012). *German Fast Start Finance: Lessons learned for long-term finance*. Available online at [http://climateanalytics.org/files/2012-german\\_fsf\\_study.pdf](http://climateanalytics.org/files/2012-german_fsf_study.pdf).

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