



Analysis

From CDM to REDD+ – What do we know for setting up effective and legitimate carbon governance?

Markus Lederer*

Faculty of Economics and Social Sciences, University of Potsdam, August-Bebel-Str. 89, 14482 Potsdam, Germany

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ABSTRACT

This article compares two carbon governance instruments – the Clean Development Mechanism (CDM) and Reducing Emissions from Deforestation and Degradation (REDD+) – to assess lessons from the former for the latter regarding effectiveness and legitimacy of such instruments. The article argues that the CDM has a relatively high degree of output-oriented legitimacy resulting in effectiveness and some input-oriented legitimacy, with few discernible tradeoffs between them. In contrasting this to REDD+, the hypotheses are advanced that (i) output-oriented legitimacy/effectiveness can again be achieved but that (ii) a higher degree of input-oriented legitimacy is necessary for REDD+ and thus also a certain trade-off between the two forms of legitimacy can be expected. This is shown through comparing the technologies and methodologies, economic rationales, political support, regulatory structures, and environmental impacts of both instruments.

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1. Introduction

The idea of developing a mechanism labelled “Reducing Emissions from Deforestation and Degradation” (REDD+) in developing countries is high on the political agenda of climate politics and various pilot projects as well as readiness activities are currently underway (for a good overview of recent developments, see [Hamilton et al., 2010](#); [Minang and Murphy, 2010](#)). Payments for ecosystem services are already well established as a governance tool, in particular in Latin America ([Engel et al., 2008](#); [Fisher et al., 2009](#); [Norgaard, 2010](#)). What is new with REDD+ is that payments will be made on a massive scale in potentially almost every tropical forest country and will be made available on a long-term basis with very stringent monitoring and verification. The services delivered (primarily saved carbon) might at a later stage be sold through a market as offsets for countries with emission reduction targets (for a good overview, see the contributions in [Angelsen, 2009](#)). Due to political pressure from some developing countries, there is, furthermore, a consensus that REDD+ should not only compensate for avoided deforestation and degradation but should also incentivize sustainable forest management and enhancement of forest carbon stocks (this explains the plus in “REDD+”).

The basic idea is to set up economic incentives so that local, national, and international actors have greater interest in protecting a forest (including its carbon stock) than in cutting it down ([Eliasch, 2008](#)). REDD+ would in the eyes of many not only contribute

significantly to the aim of reducing CO₂ emissions in the atmosphere but also to reducing the mismanagement of tropical forests. But what is the likelihood of establishing an effective and legitimate instrument of carbon governance that can also guarantee accountability (as outlined by [Biermann and Gupta, 2011](#)—this issue in the introduction to this special issue)?

The following discussion will take up this question by comparing the development of REDD+ with another carbon governance instrument, the Clean Development Mechanism (CDM). The CDM was institutionalized under the United Nations Framework Convention on Climate Change and prominently set-up in the Kyoto Protocol. It has two objectives: First, to provide a cost-effective mechanism for the developed world to offset greenhouse gas emissions, and second, to contribute to sustainable development by transferring new low carbon technologies to developing countries that host CDM projects. It therefore provides the only formal link between developed and developing countries in the Kyoto process ([Grubb et al., 1999](#)).

There are two reasons to be sceptical about the CDM being a successful forerunner to REDD: First, forestry has already been included in the CDM but so far in a rather unsuccessful manner. Only afforestation and reforestation (rather than avoided deforestation and degradation) projects are eligible, and they make up less than one percent of the CDM project pipeline due to high costs and administrative problems ([Thomas et al., 2009](#)). Second, the CDM has been successful in emerging economies where low-cost emission reduction opportunities in sectors like power generation, industrial gases, and in the waste sector could be initiated ([Carbon Trust, 2009, 10](#)). Least developed countries do not have these kinds of industries and thus have been bypassed by the CDM to a large extent. Regarding REDD+, however, it is evident that least developed countries in the

* Tel.: +49 331 977 3531; fax: +49 331 977 3429.
E-mail address: lederer@uni-potsdam.de.

tropics (e.g. Democratic Republic of Congo or Laos) will also be included. Where emerging economies like Brazil or Indonesia will participate, it will be in those parts of the country that are the least developed and where the central state has least influence (e.g. Kalimantan or Aceh in Indonesia or Amazonia in Brazil). Can we, nevertheless, still learn anything from the CDM or should we not rather only focus on experiences from international forest policy, forest certification schemes or the development of global institutions like the Global Environmental Facility (for the latter, see the contribution in this issue of [Rosendal and Andresen, 2011-this issue](#))?

I argue here that the CDM indeed provides valuable lessons for REDD+. Earth system governance faces various challenges ([Biermann et al., 2010](#), see also [Biermann and Gupta, 2011-this issue](#)) and the CDM as a policy instrument has found some functional solutions on a global scale within a very short time frame, and under a high degree of uncertainty. The discussion on REDD+ resembles to a large extent the one on the CDM ten years ago, where new solutions are proposed and lots of actors jump on the bandwagon without knowing where they are exactly headed. We also witness similar actor constellations with CDM and REDD+, where various industrialized countries push for a carbon governance mechanism with the support of some members of the G-77, with civil society being split. But not only the actors, also the economic arguments or those focusing on environmental benefits resemble the ones 10 years ago. There are thus many parallels between the substance as well as the process of development of both schemes. Thus, although the CDM does not provide a blueprint for REDD+, valuable lessons can be derived in particular regarding effectiveness and legitimacy. I proceed by first outlining how legitimacy and effectiveness of carbon governance instruments can be understood ([Section 2](#)). The main part of the article ([Section 3](#)) then compares the CDM and REDD+, through analyzing the parallel dynamic development of technologies and methodologies, the similar economic rationality, the potentially different political situations, and the environmental impact of each. The conclusion summarizes the main results.

2. Legitimacy and Effectiveness of Carbon Governance

Effectiveness of carbon governance instruments can be evaluated using the classical output, outcome and impact dimensions (for a detailed discussion, see [Lederer, 2010](#)). On a very general level, it is thus not enough if a policy instrument is just applied (output dimension), it must also work efficiently, reach the majority of self-set targets, and induce compliance from the most important actors (outcome dimension). If the policy instrument also contributes to solving the original problem, which is very often hard to prove, it has an impact. Very often the impacts are unintended effects, which can be positive or negative in relation to the initial objective of the instruments. Such an understanding of effectiveness is based on what Fritz Scharpf termed output-oriented legitimacy differentiating it from input-oriented legitimacy ([Scharpf, 1999](#)). Output-oriented legitimacy is thus a “substantive ideal” that must be able to contribute to problem-solving ([Lövbrand et al., 2009, 75](#)). Yet one always has to ask for whom an instrument is effective and thus who perceives it to be legitimate, as it matters whether members or non-members of an institution perceive the rules or instruments as legitimate ([Biermann and Gupta, 2011-this issue](#); [Schouten and Glasbergen, 2011-this issue](#)).

Legitimacy refers to the belief that a rule should be obeyed rather than being followed only due to coercion or pure self-interest ([Hurd, 1999, 381](#)). It thus has to do with the acceptance of rules by a community ([Bernstein, 2005](#)) and a normative as well as an empirical dimension can be differentiated ([Buchanan and Keohane, 2006](#)). In the following discussion only the empirical (sociological) aspect is referred to, as otherwise independent criteria would have to be established against which acceptance of rules would have to be assessed.

Input-oriented legitimacy is assumed to exist when stakeholders are included in the decision-making process of a policy and thus accept the use of the instrument more or less independent of the outcome. Ideally this is done on as large a scale as possible, although this is hard to achieve in practice ([Glicksen, 2000](#)). One particular form of input-oriented legitimacy is throughput or procedural legitimacy, which focuses less on the input per se than on having the right procedures like participation, open access, transparency, and accountability (on the role of deliberation, see [Dryzek, 2011-this volume](#)).

There is a lively debate whether input-oriented legitimacy and effectiveness depend on each other or whether there are trade-offs between the two ([Bäckstrand, 2006](#)). For most observers a decoupling of one from the other cannot exist, as the solution to a problem would not be perceived as legitimate if the process of getting there did not take into account the interests of its stakeholders in some form or another and vice versa ([Lövbrand et al., 2009](#); [Underhill and Zhang, 2008](#)). But in the end the question is more an empirical and less a theoretical one ([Beisheim and Dingwerth, 2008](#)). Similarly, it is an open empirical question what role non-state actors play in providing international legitimacy, as simple consent of the relevant states is no longer perceived to be enough ([Steffek, 2006](#)), and civil society actors are seen as relevant agents that can potentially provide the necessary acceptance ([Haas, 2004](#)). It is evident that questions of legitimacy and potential trade-offs, for example, between input- and output-oriented legitimacy, are of particular importance when new environmental markets are being set-up, as there is a high likelihood that some groups receive significant benefits while others are disenfranchised ([Corbera et al., 2007](#)).

3. Comparing the CDM and REDD+

3.1. Dynamics of Technological and Methodological Development

Regarding the CDM, there are now over a hundred methodologies that do not only make carbon a comparable product but also try to establish that individual CDM projects are additional, meaning that the calculated emission reductions would not have taken place without the project. Various studies show, however, that a certain percentage of CDM projects are simply not additional, given that they would have happened anyway ([Michaelowa and Purohit, 2007](#); [Schneider, 2007](#)). There also seems to be a certain trade-off between environmental integrity and the quick and cost-effective delivery of certified emission reductions (CERs) ([Lövbrand et al., 2009](#); [Olsen, 2007](#)). Some authors conclude that the mechanism should, therefore, be abandoned as regulatory reform will not solve the underlying dilemma (see, in particular [Lohmann, 2009](#)).

Regarding CDM's contribution to sustainability, it is, however, questionable whether a comparison with international standards is appropriate, as empirical studies that compare projects with national “best practices”, e.g. in the field of successfully setting up renewable energy projects in Brazil, come to a much more positive conclusion ([Americano, 2008](#); [Friberg, 2009](#); for a more detailed discussion of the positive developments, see [Lederer, 2010](#)). Furthermore, there is an important dynamic underway here, as more projects than anticipated work as planned and the overall output of projects (see [Section 3.2](#) for details) is highly impressive. Thus, within a very short time frame – the first CDM project was registered in 2004 – there has been tremendous interest in developing technical solutions and new methodologies ([Carbon Trust, 2009](#)).

We witness a similar trend for REDD+, as there is a growing consensus that solutions are now available to solve some of the major technological and methodological issues surrounding it, although this does not imply that they will be adequately used. Three aspects are of particular importance (for a detailed overview, see [Angelsen, 2008](#); [Havemann, 2009](#)).

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