

Everyone loves a winner - expectations and realisations in the emerging CDM market

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Abstract

The Clean Development Mechanism (CDM), established in the 1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change, is a prominent example of the contemporary turn towards more pluralistic and participatory modes of environmental governance. It epitomises the trend away from top-down regulatory approaches towards softer steering instruments that mobilise civil society and business in new voluntary arrangements and public-private partnerships. Here we propose that the increased participation of public and private actors in the planning and implementation of CDM projects be conceptualised and analysed in terms of output and input legitimacy. Whereas input legitimacy builds upon a democratic imperative that guarantees that all social actors affected by a CDM project should be able to influence the project design through an open and transparent decision process, output legitimacy refers to the problem solving capacity and environmental effectiveness of CDM projects. The CDM is often portrayed as a policy mechanism that will secure both goals at the same time and thus fulfil its twin objectives: namely cost effective climate change mitigation and sustainable development. While the economic incentives of private actors are to ensure that money is channelled to low cost mitigation projects, local stakeholders guarantee that such projects meet the social and ecological needs of the host community. Hence, in mainstream policy rhetoric the normative and functional arguments for public participation in CDM project planning and implementation appear to be mutually reinforcing. In this paper we analyse how this rhetoric translates into practice through a study of three geographically dispersed projects. In contrast to the official win-win storyline, our comparative case-study indicates that there are clear trade-offs between input and output legitimacy in the CDM project cycle; trade-offs that have bearing both on the emerging carbon market, and the links between sustainability and participation in environmental governance.

Introduction

In February 2007 Hans Jürgen Stehr suggested that the Clean Development Mechanism (CDM) represents a glimpse of the future when it comes to the global response to climate change. As the new chair of the CDM Executive Board (EB), Stehr proudly declared that “the mechanism’s success in stimulating investments in development projects that reduce greenhouse gas emissions is a model for other financial and market-based initiatives” (UNFCCC press release 070216). This statement falls well in line with the official policy rhetoric surrounding the emerging CDM market. Since its inception at the third conference of the parties to the United Nations Framework Convention on Climate Change (UNFCCC) in Kyoto in 1997, the CDM has been represented as a successful North/South bargain and an innovative tool that will both increase the problem-solving capacity and the democratic legitimacy of the international climate regime. Resting upon the neo-classical market logic that emissions should be reduced where costs are low, the mechanism is said to deliver cost-effective emission reductions to the industrialised world while at the same time channelling clean technology and sustainable finance to developing countries (Streck 2004, UNEP 2004).

Central to the fulfilment of these twin objectives is a broad involvement of private actors in the design and implementation of CDM projects. Although governments hold the responsibility for the negotiated emission reduction targets the projects ultimately aim to

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meet, the CDM project cycle relies heavily upon the participation of a diverse set of actors including profit-seeking companies, third-party auditors, science advisors, international NGOs as well as local communities affected by the project activities. This delegation of power and responsibility from the public to the private sector is generally thought to secure both the output of cost-effective and sustainable emission reduction credits, and the legitimacy of the project activities. Hence, in mainstream policy rhetoric, the means and ends of the CDM appear to be mutually reinforcing.

In this paper we employ the concepts of input and output legitimacy to problematise and challenge this win-win rationale. In line with Bäckstrand (2006), input legitimacy is in this context interpreted as a democratic imperative that guarantees all social actors affected by CDM projects influence over the project design and implementation through a transparent and accountable decision process. These procedural accounts of legitimacy represent partial elements of democracy that may, according to a growing literature, vitalise the green public sphere and hence contribute to a democratisation of governance arrangements beyond the state (Bernstein 2005a, Dryzek 2000, Eckersly 2004). Output legitimacy, on the other hand, refers to the problem solving capacity of CDM projects and the extent to which they lead to desired environmental and development outcomes (Bäckstrand 2006). We begin our analysis by introducing the role of legitimacy in governance for sustainable development and specifying how input and output legitimacy can be conceptualised and analysed in relation to the CDM. In the second section of the paper we apply these concepts to the emerging carbon market and the experiences of a newly registered hydroelectric project in Chile, a Chinese cement project in the CDM pipeline, and, finally, a land use change and forestry project in Mexico that currently is selling offset credits on the voluntary market. Although the experiences of these three projects are far from generalisable, we approach them as examples that have bearing on the mechanisms as such as well as the emerging carbon market

Our study suggests that the multiple expectations tied to the CDM complicate the notion of legitimacy in the global carbon market. While the institutional framework built around the CDM seems to effectively secure the output of cost-efficient emission reduction credits, the institutional procedures appear less conducive to small-scale participatory projects aiming for sustainable development benefits at the local level. Hence, in contrast to the official win-win rhetoric, we argue that the design and implementation of CDM projects involve central trade-offs that challenge the notion that means and ends are mutually reinforcing. These trade-offs currently seem to favour the expectations of powerful Northern interests (namely cost effectiveness and additionality) at the expense of those directly affected by the project activities. Legitimacy in the emerging CDM market thus ties into tensions between the concerns and objectives of the many actors involved, and their respective leverage in the CDM project cycle.

Legitimacy in governance for sustainable development

While some would argue that global environmental politics is an exceptionally accessible and participatory realm of global governance for state and non-state actors alike (Bernstein 2005b: 140), others have pointed at the lack of legitimate environmental action on the global level. The perceived legitimacy gap has both an input and output dimension (see Scharpf 1997). On the input side, the lack of legitimacy is commonly tied to the limited transparency and accountability of global governance arrangements. Although citizens are indirectly connected to global environmental action via national parliaments and governments, the making of international agreements and institutions by nation-states is often seen, in the words of Dryzek

(2000: 116), as “a thinly democratic affair”. On the output side, the legitimacy gap is connected to the lack of substantive outcomes. Despite the almost exponential growth of multilateral environmental agreements during the past three decades, many have noted that environmental multilateralism remains weak and unable to provide effective solutions to global environmental degradation (Elliott 2004).

In this light, the rise of network-based and multi-stakeholder governance arrangements such as the CDM has been interpreted as a positive trend that may increase both the democratic nature and effectiveness of international governance structures (Börzel & Risse 2002, Haas 2004). By involving multiple private actors in the performance of central governance functions, these new modes of governance may facilitate public scrutiny of international agreements and thus make regulatory bodies accountable for their actions and omissions (Arts 2006, Lafferty 2004, Scholte 2004). According to proponents of deliberative democracy, such scrutiny will foster an inclusive dialogue that may vitalise and empower the public sphere and thus build more legitimate political authority (Dryzek 2000, Smith 2003). The calls for procedural (input) legitimacy in global environmental affairs are also commonly tied to the quest for more enforceable and effective environmental action. Since the UN Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, a broad involvement of private actors, especially those on the margin, has, at least in official policy rhetoric, been considered a necessary condition for successful governance for sustainable development. As stated in Chapter 23 of Agenda 21 “(o)ne of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making” (UN 1992). Hence, the celebration of public-private partnerships at the World Summit for Sustainable Development (WSSD) in Johannesburg in 2002 was closely tied to the expectation that these multi-stakeholder arrangements will translate multilateral commitments into concrete action and hence reduce the implementation gap in global environmental governance (Bäckstrand 2006, Joyner 2005). While the neo-liberal argument in favour of public-private partnerships is that private actors are better suited to regulate their affairs (Börzel & Risse 2002), deliberative democrats have proposed that participatory and deliberative governance practices will bring about more ‘ecologically rational’ solutions to complex and inherently uncertain environmental problems (Smith 2003: 61, Baber & Bartlett 2005).

Although there appears to be an emerging consensus that decentralised networks of institutions and actors are better suited to deal with complex policy environments such as climate change than hierarchical processes of governmental steering (Haas 2004), there are good reasons to critically examine whether the new modes of governance meet the high expectations of more legitimate environmental governance. From the perspective of input legitimacy, there is firstly the question of transparency and accountability. As noted by Scholte (2004: 217), it is “impossible to hold governors to account if their governance is invisible to constituents. If regulatory operations are to be subject to effective public scrutiny, then they must be open to public view”. Hence, transparency seems pivotal for accountability. However, it is indeed one thing to make information available to the public domain, and another thing to make it understandable to affected actors and hence democratically meaningful. The opportunities stakeholders have to monitor and seek correction of mistakes in global governance represent another important aspect of input legitimacy (Scholte 2004: 220). In contrast to the national context where the citizenry can hold decision-makers accountable for their mistakes through elections, there are few formal mechanisms through which civil society can ask for corrective actions from global governance agencies. As noted by Bäckstrand (2006: 295), this aspect of accountability is particularly challenging in

networked governance where the sites of governance are multiple and power is diffused among different actors.

When it comes to participation, input legitimacy is also closely tied to *who* participates, *when* and *how* (White 1996). As highlighted by Bernstein (2005b), the definition of communities affected by global environmental governance, and the degree of shared norms required to achieve legitimacy in global decision processes, are difficult questions subject to considerable debate (see for instance Eckersly 2004). Since there is no clearly defined demos in global environmental governance, there are no pre-given rules guiding who has authority over whom, and who is accountable to whom (Hajer & Wagenaar 2003: 9). Resolving the issue of representation in stakeholder deliberations is therefore both complex and key to input legitimacy in multi-stakeholder partnerships. It is also central to consider when in the policy process stakeholder deliberations occur and if they meet the deliberative requirements of unconstrained and uncoerced communication. Critics have suggested that public-private partnerships such as the CDM represent neoliberal solutions in disguise that manifest corporate power in world politics and hence enhance rather than reduce the problems of democratic legitimacy (Börzel & Risse 2002: 17, Lohman 2006). In order to ensure that participation is not reduced into a mere act of legitimation of prevailing power structures, White (1996: 6) points out that the ‘rhetoric of participation’ needs to be translated into meaningful practices that can challenge patterns of dominance. In contrast to ‘downstream’ public engagement that, in the words of Wilsdon & Willis (2004: 40), often is no more “ than a process box that civil servants and scientists have to tick when drawing up a policy”, meaningful participation opens up the debate and allows the public to engage in ‘upstream questions’ of fundamental importance for the policy design and implementation.

Finally, on the output side, the effectiveness argument for multi-stakeholder governance arrangements requires further scrutiny. Do partnership agreements reduce the implementation gap in global environmental governance and deliver desired environmental and development outcomes? And does a broad participation of non-state actors necessarily bring about more ecologically and socially grounded decisions? Since sustainable development is such a contested concept, including a range of, often competing, visions and expectations, an objective analysis of output legitimacy in sustainable development partnerships is an inherently difficult enterprise. With reference to the CDM, such an analysis is further complicated by the decision at COP 7 to make the interpretation of sustainable projects subject to host country judgement (see decision). However, as pointed out by Bäckstrand (2006: 295), a second dimension of output legitimacy is the degree to which the partnership network has established institutional mechanisms for evaluating and reaching desired outcomes. A feasible analytical approach to output legitimacy is consequently to examine the extent to which the agreement has problem-solving capacity built into its institutional design. In the following sections of this paper we embark on an analysis of the CDM using the notions of output and input legitimacy proposed above.

Input and output legitimacy in the CDM

The CDM is a market-based and multi-stakeholder policy instrument that was introduced at the third conference of the parties (COP 3) to the UNFCCC in Kyoto in 1997, in order to bridge industrialised countries’ fear of costly GHG mitigation targets and developing countries’ call for technology transfer and development aid (Grubb et al. 1999, Matsuo 2003, Repetto 2001). The mechanism was proposed by the COP chair Roal Estrada as a last minute compromise between the full blown trading scheme suggested by US negotiators to increase

the flexibility of the Kyoto Protocol's emission reduction targets, and the Clean Development Fund proposed by Brazil in order to channel financial resources for climate mitigation projects and sustainable development to countries in the South. Hence, article 12 of the Kyoto Protocol states that the objective of the CDM is to promote projects in the developing world that assist industrialised countries in meeting their emission reduction targets, while at the same time promoting sustainable development in the host country. During the negotiations, concerns were raised that such projects would undermine the environmental integrity of the protocol. As a consequence, the final treaty text also states that emission reductions resulting from CDM projects must be real, measurable and additional to any that would have occurred in the absence of the project activities (see UNFCCC 1997, Article 12).

Output legitimacy as additionality, cost-efficiency and sustainable development

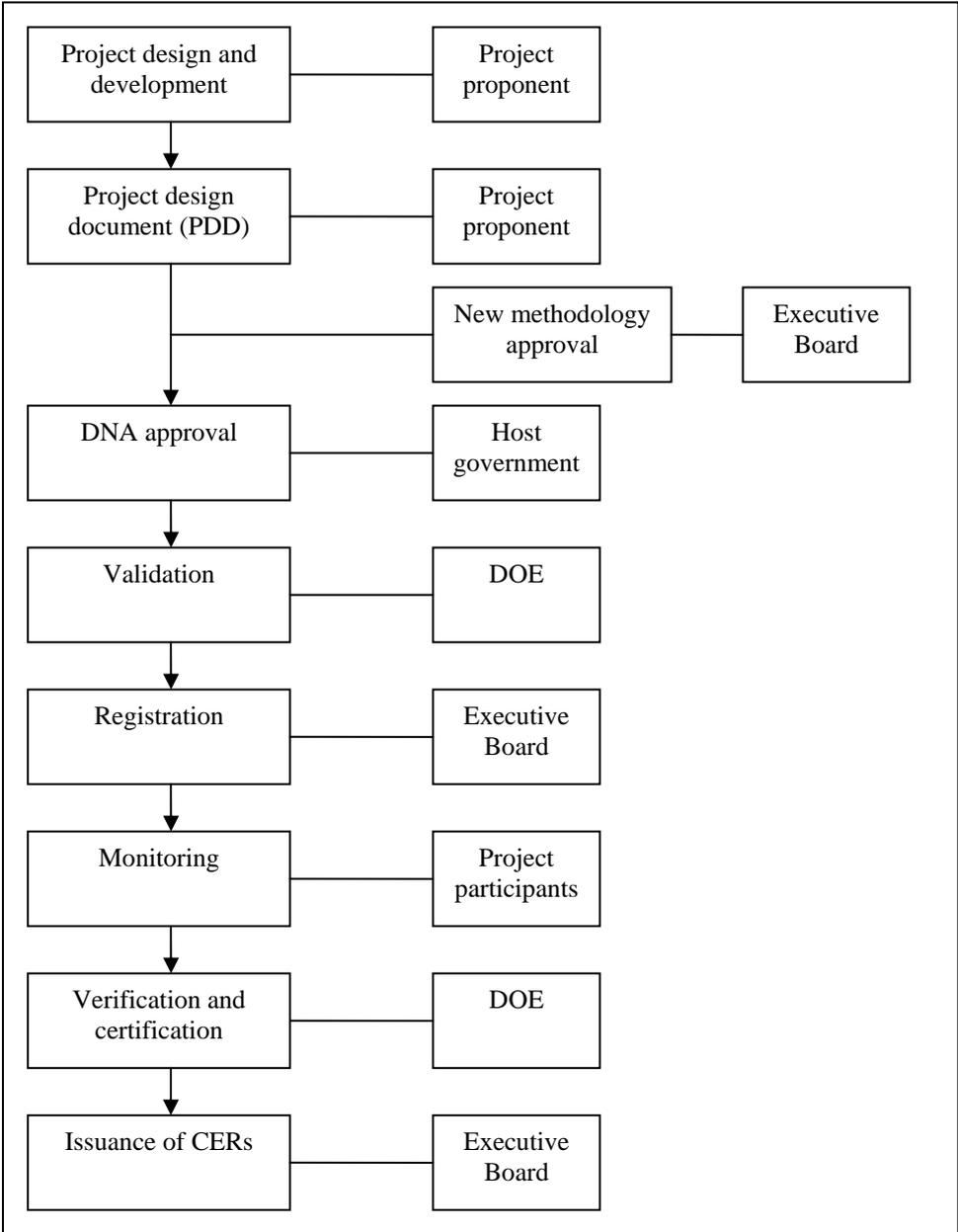
Since COP 3 in Kyoto, much effort has been put into the building of an effective institutional framework that will guarantee the output legitimacy of CDM projects. To that end, the conference of the parties established an administrative and supervisory body in 2001 – the Executive Board – that is responsible for the approval and registration of CDM projects and for the official issuance of tradable credits, so-called certified emission reductions (CERs). To manage these functions the EB has in turn created a number of methodology panels that provide guidelines for determining project baseline emissions and monitoring plans, and a CDM accreditation panel that gives advice to the EB regarding the accreditation of third party verifiers of CDM projects, so-called Designated Operational Entities (DOEs) (for overview, see UNDP 2006). The EB and its scientific advisory panels jointly supervise the design and implementation of CDM projects according to an eight step project cycle agreed upon at COP 7 in Marrakesh in 2001 (see Fig 1).

The first step of the CDM project cycle, *project design and development*, takes place within a developing country upon the initiative of a project proponent. After having undertaken the necessary feasibility studies, project proponents seek approval from the host country's Designated National Authority (DNA) by submitting information on the proposed project in a standardised project design document (PDD). The PDD should provide a detailed description of the project, including the baseline scenario against which emission reductions are measured, the project's quantification methodology, monitoring plan, and estimated environmental impacts (UNDP 2006:35). If the proposed baseline and monitoring methodologies are not already in use in other CDM projects, the project proponent needs approval by one of the EB's methodology panels before approaching the host country DNA. The next step in the project cycle, *project validation*, is an assessment undertaken by the DOE. The assessment is based on the PDD and aims to, first and foremost, establish whether the project's baseline methodology and monitoring plan satisfy the EB's requirements for real, measurable and additional emission reductions. Project additionality has proven to be the most difficult requirement to fulfil since it implies proving that the suggested technology, energy efficiency scheme or forestation programme would not have gained ground without the proposed project activity. Although the EB has developed a standardised additionality tool that aims to simplify this counter-factual burden of proof for project developers, Cosbey et al. (2006: 63) note that the complexities and high costs associated with additionality assessment are likely to have discouraged project proponents and limited the number of projects entering the CDM pipeline.

In the validation phase of the project cycle, the DOE is also expected to assess the project's contribution to sustainable development. However, the criteria for assessing sustainable

development benefits vary between different project settings. The lack of international standards for what constitutes a sustainable CDM project is the result of a long standing critique from developing countries that such standards would compromise the sovereignty of the host country. Hence, the Marrakesh Accords stipulate that it is up to each host country DNA to interpret sustainable development according to their own national circumstances and development priorities (UNDP 2006: 124). Interestingly enough, the lack of institutionalised criteria for sustainable CDM projects has resulted in the emergence of a number of voluntary standards in recent years (e.g. the Gold Standard and the Climate, Community and Biodiversity Project Design Standards). These standards include requirements for sustainable project activities, and have been developed outside the multilateral negotiation process in cooperation between private actors.

Figure 1 The eight-step CDM project cycle



Following successful project validation, the DOE submits the PDD and a validation report to the CDM Executive Board for project approval and *registration*. Hereafter project participants are responsible for project implementation and *monitoring*, guided by the obligatory monitoring plan approved during registration. After being in operation for a period of time, the project undergoes a *verification* process, giving a DOE the responsibility to make an assessment of the quantity of actual emission reductions based on documentation, project operations, and potentially, on-site inspections and interviews. The ensuing *certification* process begins with the verification report being submitted to the EB, including a certification of the amount of emission reductions produced by the project. On the basis of the report, the EB issues CERs, thus concluding the CDM project cycle.

Despite the multiple expectations built into the CDM by the negotiating parties in Kyoto, the institutional framework put in place to supervise the eight-step project cycle has over time come to focus almost exclusively on securing measurable and additional CERs. Under the guidance of the EB's methodology panels and the DOE, output legitimacy is first and foremost assessed in terms of the CDM project's contributions to greenhouse gas mitigation. Although the limited institutional attention to the sustainable development dimensions of the CDM is best explained by the Marrakesh decision to leave such considerations to the host country, it is also partly due to the market logic of the mechanism. As highlighted in a recent assessment by the UNDP (2006:127), social and environmental benefits are, unlike emission reductions, unpriced on the global carbon market and therefore tend to be given a low weight in the decision process when left to the market forces (cf. Olsen 2006). Due to the public-private character of CDM, private firms are today often proponents of individual CDM projects or investors that subcontract with project proponents to implement CDM projects in different developing countries. Private sector entities are also regularly involved in the CDM project cycle as consultants that help to identify and design CDM projects, or as brokers that specialise in the trading of CERs gained from specific project activities. Although this private sector delegation has resulted in a number of voluntary standards for sustainable CDM projects, the market logic of the CDM first and foremost rests upon the profit seeking interest of private firms (Bäckstrand & Lövbrand 2007, cf. Streck 2004). Hence, the market forces have become the means by which the cost-effectiveness objective of the CDM is guaranteed. How does the democratic imperative central to input legitimacy affect this premise?

Input legitimacy as transparency, accountability and participation

In accordance with the UNFCCC assertion that all developed and developing countries shall "promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process, including that of non-governmental organizations" (UNFCCC 1992, article 4), the CDM project cycle offers various opportunities for stakeholder participation. The Marrakesh Accords contain several provisions for making CDM documents publicly available and for involving stakeholders in the project process. However, in practice, participatory processes can take many guises and provide different opportunities for actual influence (Few, Brown & Tompkins 2006, Cornwall 2002). Within the CDM project cycle, the most common type of participation, as reflected in the institutional framework, is consultation. While the project cycle includes a number of opportunities for public involvement, it is symptomatic that they takes place 'downstream' when the design of the project already is decided upon.

According to the CDM rules, project participants, DOEs, the EB and the UNFCCC secretariat are required to ensure that CDM documentation is publicly available, with the exception of

some confidentiality clauses (see decision 17/CP.7). Nevertheless, the treaty text has been criticised for not being elaborate enough on central issues such as *how* and *when* documents should be made publicly available. An important line of criticism concerns the lack of concrete provisions to make sure that relevant project information is easily accessible and reaches stakeholders in a culturally appropriate way (Baumert & Petkova 2000, Eddy & Wisner 2002). For instance, the translation of documents into local languages is not required. However, in the latest version of the PDD guidelines it is specified that “project participants shall describe a project activity in a manner which allows the local stakeholders to understand the project activity” (PDD Guidelines, version 04). Moreover, the means of communication are not specified. Experiences thus far show that most CDM project information is communicated over the internet. The internet is indeed a superior means of communication to reach a large number of people in a cost-effective way. However, it may not be the most appropriate way to reach local stakeholders most directly impacted by the CDM projects, especially in LDCs where internet access is the exception rather than the rule.

The question of when participation takes place is another important indicator of the quality of the participatory process. Being part of the project design and development ‘upstream’ is a very different type of involvement than being asked to comment on a pre-defined project (cf. Petkova et al 2002). The central, and mandatory, access point for *local* stakeholders to provide input into the CDM project cycle is the preparation of the PDD. Although requirements for stakeholder consultations are defined by the host country government, project developers are required to state in the PDD how the participation and input of local stakeholders have been taken into consideration (Marrakesh Accords, Decision 17/CP.7, appendix B). Another potential access point is found at the verification stage, when the DOE may conduct interviews with local stakeholders. It remains unspecified, however, how these interviews should be conducted (Eddy 2002). The central access point for *international* stakeholders is found at the validation stage where parties, stakeholders and UNFCCC accredited NGOs, following the release of the PDD, have 30 days to provide comments on the validation requirements. Finally, beyond the project cycle of individual projects, technical reports commissioned by the EB are open for public comments for eight weeks prior to finalization.

While the CDM offers several entry points for stakeholders to provide input to the process, question projects, and potentially seek redress, it seems as though the CDM provisions for information access still are too vague to be an effective instrument for participation and accountability. It may also be argued that contributing with comments on a CDM project requires an amount of technical expertise that goes beyond what can be acquired through a project presentation during a one-day consultation seminar. Experiences thus far show that NGO comments have been surprisingly few, likely due to lack of personnel with the necessary technical knowledge (Michaelowa 2005). The Climate Action Network (CAN) has therefore suggested that “making publicly available” should include capacity building (Eddy & Wisner 2002: 205). Moreover, only few stakeholders have access to judicial remedy opportunities and only in the shape of review processes. The CDM rules provide for three types of reviews; registration of a CDM project, the issuance of CERs and re-accreditation of DOEs. The stakeholders who can initiate reviews are either Kyoto Protocol parties involved in the CDM project in question, or, with regard to issuance of CERs and re-accreditation of DOEs, at least three EB members. For other stakeholders, the sole opportunity for seeking redress of some kind rests on the rule permitting a verifying DOE to seek input from local stakeholders in an on-site inspection of the project. Naturally, this opportunity hinges on the conduct of the DOE.

This leads us to the important question of *who* actually gains a voice in the CDM project cycle. Although there are provisions for public access to information, it is problematic that they are vague in terms of timing and means of communication. This clearly affects the potential of the participatory aspect of the CDM process to be a mechanism for public input into CDM projects. There are also limitations in access to actual decision-making; consultation processes offer, at best, an opportunity for dialogue but do not guarantee influence. Hence, in its current design, the CDM stakeholder participation provisions seem to represent a step backwards from current projects standards within international institutions (Eddy 2002, cf. Baumert & Petkova 2000). These flaws indicate that the opinions of those stakeholders most affected by CDM projects and those most interested in local sustainable development benefits are likely to become marginalised in favour of other, more resourceful actors, primarily concerned with achieving cost-effective emissions reductions. In this regard the current CDM process does not seem to hold potential to “challenge patterns of dominance” (White 1996: 6).

Translating expectations into practice – examples from Chile, China and Mexico

In this section of the paper we examine how the tensions between input and output legitimacy in the CDM project cycle have played out in three carbon projects. These projects represent three types of activities – hydro, cement, and land use change and forestry – that to different degrees have managed to attract project investors and successfully complete the CDM project cycle. As indicated by the most recent update of the UNEP-Risø CDM pipeline (URC 2007), hydroelectric projects currently represent the second to largest project category on the market in terms of number of projects. Out of the 645 projects registered by May 2007, 112 were in the hydroelectric sector with another 280 in the pipeline. In the cement sector, only 14 projects had been registered during the same time period and 16 projects were found in the pipeline. The land use change and forestry sector had the lowest success rate during this time period. To date only one land use change and forestry project has been registered by the CDM EB, and not more than six reforestation projects are found in the pipeline (URC 2007).

However, the pipeline of prospective projects currently expands at an unprecedented rate. By the end of April 2007, it consisted of 1 885 projects, a number that includes the 645 registered projects as well as 19 projects that were withdrawn or rejected. While the total number was no more than 60 in 2004, almost 900 new projects were added during 2005 and 2006 respectively. And during the first four months of 2007 alone, 471 new PDDs were sent to DOEs for validation (URC 2007). This exceptional growth rate correlates with the developments of the market for CER contracts, see Table 1. It also coincides with the inception of the first trading period (2005–2007) of the European Union’s emissions trading scheme for carbon dioxide (the EU ETS) that has established a foundation of private investors, for whom CERs represent a tangible and priceable good. The fact that more than half, or 58 %, of the transacted volume of CER contracts in 2006 went to private entities can be interpreted as a sign of the market’s increasing degree of maturity (Point Carbon 2007:17). While government agencies and intergovernmental funds dominated the CDM market during its inception prior to 2005, state actors only purchased 8 % of credit contracts in 2006 (Point Carbon 2007:17).

Table 1. The size of the CDM market in 2005-2007 (Point Carbon, 2007:6)

	2005	2006	2007
	<i>Final figures</i>	<i>Final figures</i>	<i>Forecast</i>

	Volume [Mt CO ₂ e]	Value [million EUR]	Volume [Mt CO ₂ e]	Value [million EUR]	Volume [Mt CO ₂ e]	Value [million EUR]
Primary	397	1 985	523	3 349	456	3 260
Secondary	4	50	40	571	96	1 061
Total	401	2 035	563	3 920	552	4 321

La Higuera, Chile

The *La Higuera Hydroelectric Project*, is a unilateral project located in the Tinguirica river basin in Chile's VI region. Since 1995, development of power generation projects in Chile has been left entirely to the private sector. Thus, the project was formed in May 2004 as a joint venture between Pacific Hydro Limited (PHL) and Statkraft Norfund Power Invest AS (SNPI) (PDD version 02: 1). The project consists of a run-of-river hydroelectric power plant which will displace fossil-based electricity, resulting in an estimated annual CO₂ emission reduction of 477 586 tonnes (CDM – Executive Board 2005, DNV 2002). The project received host country approval in March 2005 and was one of the first Chilean projects to become registered within the CDM framework. Construction commenced in 2006 and the plant is expected to become connected to the Chilean grid by January 2008 (Brown 2007, personal communication, DNV 2006).

According to project developers, for the La Higuera project the prospects of earning carbon credits within the CDM framework was what made the project stack up financially and thus materialise (Brown 2007, personal communication). A number of factors seem to have influenced what was perceived by the project developers as a smooth and effective host country approval process. First, the hydroelectric plant is an important investment and a strategic project considering Chile's dependency on imported natural gas from Argentina (CDM – Executive Board 2005: 2-3, Brown 2007, personal communication). In line with the view of the CDM as a non-traditional export commodity, large foreign investors such as Pacific Hydro, are considered an important asset for the economic development of Chile (Conca 2007, personal communication). Secondly, the project is located in an area where harmful environmental impact can be minimised, due to the region's limited biodiversity and sparse population (Brown 2007, personal communication). Nevertheless, large hydro projects have been widely criticised for running counter to the CDM's goal of promoting sustainable development. The World Bank/IUCN-sponsored World Commission of Dams (WCD) has showed that such projects often have substantial negative social and environmental effects and that they regularly underperform. Furthermore, it is claimed that many large hydro projects are business-as-usual projects (Haya, McCully & Pearson 2002). Although the La Higuera project fulfils WCD guidelines, it may be argued that the project's sustainable development benefits are treated as an add-on rather than a goal on a par with emission reductions.

This view is somewhat confirmed in the IISD's large comparative study of CDM projects from a sustainable development perspective where La Higuera receives a score of 24 points out of 100 for its sustainable development benefits (the highest score of any project was 58 points) (Cosbey et al. 2006). The score is reasonable good in a comparative Chilean perspective, but it is noteworthy that the project is judged to bring no substantive social benefits at all. It is not far-fetched to draw the conclusion that the imbalance between investor profits and social benefits can be explained partly by who was included in the project process and how. There was indeed a consultation process within the framework of an environmental impact study (EIS). During the process, information on the project was disseminated in

Spanish through various means and there were opportunities for local stakeholders to convey their opinions (Conama 2004, Lisboa 2007, personal communication). Overall, the process shows local support of the project. Nevertheless, although the process allows for a certain amount of revisions, the overall design of the project was already set and the EIS completed by the time the consultation process took place. It is also questionable to what extent a one-day seminar is enough to grasp the whole project concept and its implications. In short, it was a 'downstream' public engagement rather than an engagement in 'upstream questions' (cf. Wilsdon & Willis 2004: 40). This problem is reinforced by the lack of redress procedures. Thus, critics would argue that the process illustrates unequal power relations between project developers/investors and other stakeholders in terms of knowledge and agenda-setting privilege.

A project such as La Higuera, which displaces fossil-based electricity clearly contributes to GHG emission reductions and thus complies with one of the CDM's goals. It also has some additional sustainable development benefits, the CDM's other goal, including employment generation, reduction of the need for fuel imports and reduction of polluting emissions (Cosbey et al. 2006: 48). The SD benefits, however, are clearly not as significant as the emission reductions, which is understandable considering the economic rationale of the project investors. This finding points to the inherent, although not inevitable, tension between the CDM's two primary objectives. The tension is also clearly related to the characteristics of the project process. The assumption that more participation by affected groups will generate more effective collective problem solving might very well hold. Part of the problem is that the goals of various stakeholders differ and that all actors do not have the same space and leverage within the project process.

Huasheng Tianya, China

The Huasheng Tianya Cement Company is one of thousands of independent cement manufacturers in China: on an aggregated scale the world's most influential cement-producing nation by far, responsible for some forty percent of the global production volume (Harder 2003). Domestically, however, the sector is highly fragmented and faces considerable economic, technological and environmental challenges, including high greenhouse gas emissions (Nordqvist et al. 2005). The *Huasheng Tianya Waste Heat Recovery project* is located on Hainan Island, a province in the southern part of the People's Republic of China. The enterprise operates a single production line, in which a rotary kiln (in operation since May 2005) manufactures cement clinker at a capacity of up to 5 000 tonnes per day. The credit-earning project activity relies on retrofitted waste heat recovery technology that allows for on-site electricity production, dimensioned at 6.5 MW. According to the project baseline, the electricity produced will partly displace the entity's use of fossil-fuel generated grid power, thereby mitigating 38 400 tonnes of CO₂e annually. The project's crediting period is ten years as of June 1st, 2007.

In the Huasheng Tianya project, only indigenous technology is used, but its wider application within China's cement sector is still scant. The project developer anticipates that the cement company may become a source of inspiration for technology diffusion within the sector, at least locally. In this way, the project is expected to contribute to a more sustainable development also on a larger scale than merely in and of itself. The original initiative for the project, dated May 2005, is ascribed to the government-controlled Tianjin Cement Design and Research Institute. Provincial authority approval for CDM application followed already in June, and construction was commenced in October of the same year. Consultations with

selected stakeholders, i.e. public agencies, banks and consultants, were held twice: in July 2005 and February 2006. The credit buyer, a Swedish carbon credit trader, became involved only in the latter half of 2006, and has not taken part in the project design process. Neither, to any significant extent, have local community stakeholders.

Project lead times have been short, and it constitutes an interesting case for a closer study of legitimacy. In describing stakeholder involvement during the project's preparatory phase, there is a marked difference between the early Project Design Document (PDD), which was published for public comments in August 2006, and the final version, dated February 2007. The change was effectuated after receipt during the public commenting period of the following observation: "...the Stakeholder Section [of the PDD] seems not to comply with the spirit of the CDM Program in not even giving the local residents a chance to learn about the project and ask questions about the implications for them" (DNV 2007:13). Whereas the PDD from August 2006 states that "[a]s there are [...] no residents around the project sites, it is unnecessary and impossible for the project entity to solicit opinions from the local community", the version from February 2007 reads instead that "[t]he project entity also interviews its staffs and the residents around the site of the project site to collect opinions about the project activity, and the questionnaires have been provided to [the Designated Operational Entity (DOE)] for final validation." It seems reasonable to assume that this rather remarkable change in attitude towards the meaningfulness of citizen deliberation is connected to the critique expressed in the comment above. According to the DOE's validation report (DNV 2007:15) though, the questionnaires "for consultation of the cement plant staff and the residents around the site of the project", referred to in the latter PDD, had been collected already during the project's early inception period, from May to June 2005. Thus, most probably, the rewrite signifies a wholly cosmetic modification, which shows, however, the extent of the power that the commonly received policy rhetoric about the CDM's mutually reinforcing twin objectives wields over its actors. Presuming that the original formulation in the former PDD expressed the project developer's and entity's more unreflective and honest opinion about the relevance to output legitimacy of deliberative involvement of local communities, the real and tangible trade-off between the two is evident. The DOE, in its validation report, lets the matter pass without much comment, and the project has been forwarded to the EB with a request for registration.

Scolec Té, Mexico

In contrast to the two former projects, the *Scolec Té* project in the Mexican state of Chiapas has not yet entered the CDM market. *Scolec Té* is one of the first land-use and forestry projects to be registered in the UNFCCC's pilot programme for Activities Implemented Jointly (AIJ). The AIJ programme was incepted at COP 2 in Berlin in 1995 in order to explore the opportunities associated with a future international trade in carbon credits. The *Scolec Té* project began as a feasibility study two years later upon the initiative of a group of scientists from the federal research institution El Colegio de la Frontera Sur (ECOSUR) in Chiapas and the Edinburgh Centre for Carbon Management in the UK. The study aimed to determine the carbon sequestration potential in the region's agro-forestry systems and was carried out in close cooperation with members from a local coffee producer cooperative (Nelson & Jong 2003). In 1997 *Scolec Té* was registered under the United States AIJ initiative. As reported on the UNFCCC website, this AIJ project seeks to promote carbon sequestration and sustainable farming practices by providing local farmers with technical assistance and financial incentives to shift from agriculture to agroforestry, convert pastures to plantations, restore degraded forest, and improve natural forest management. The carbon benefits generated by these

activities are expected to range from a minimum of 15 000 tC up to 330 000 tC during the 30 year project period. In addition, the project also aims to improve the social and economic welfare of the nine Mayan communities involved, while at the same time preserving the region's rich biodiversity (see www.unfccc.int/kyoto_mechanisms/ajj).

Since 1997, a local trust fund called Fondo Bioclimatico has brokered carbon credits from Scolel Té on the voluntary carbon market. The main buyers have to date been the International Automobile Federation that has purchased some 5500 tC per year from the project (Corbera 2005), and the UK Carbon Neutral Company (originally known as Future Forests) that sells carbon offsets to businesses, governments and individuals (see www.carbonneutral.com). Although the project has grown over time and come to include an increasing number of farmers, it has so far not entered the CDM pipeline. In year 2002 the international auditing company SGS – accredited as DOE by the EB – was invited to assess whether Scolel Té would meet the CDM eligibility criteria. The report noted that the project's small-scale and diverse land use practices are likely to generate enough social and environmental 'co-benefits' to meet the sustainable development criteria of the Mexican DNA. However, the number of farmers and land use activities involved in the project at the same time severely complicates compliance with the carbon monitoring and verification procedures included in the CDM project cycle (Phillips et al. 2002). Hence, to date the transaction costs associated with project development and implementation have outweighed the economic benefits of the expected CERs generated by the project's agro-forestry activities (de Jong 2007, personal communication).

This tension between the social and ecological diversity of the project activities on the one hand, and the methodological rigour of the CDM eligibility criteria on the other, points to an important trade-off between input and output legitimacy in the emerging CDM market. As noted by Cosbey et al. (2005:80), small scale and participatory land use change and forestry projects, implemented by low income communities, have difficulties to compete on a market guided by economic incentives. The high upfront costs associated with CDM project development, and the relatively slow and low rates of return from forestry investments, tend to favour larger projects that can benefit from the economies scale. This finding partly explains the low number of land use change and forestry projects in the CDM pipeline. Furthermore, projects such as Scolel Té, that have involved local farmers in the decision process and aimed for non-carbon related development activities such as women's welfare and the promotion of fruit trees, incur high costs per invested EUR and are thus less likely to meet the economic interests of potential buyers.

Faced with these economic realities, the Scolel Té project has changed over time. As pointed out by Nelson and de Jong (2003: 26), what initially was promoted as a community development project has in recent years turned into a carbon bank with which farmers can contract to deposit carbon and withdraw payments. In the process of making the project commercially viable, economic concerns have been put ahead of social and environmental benefits and much of the decision making power and responsibility has shifted from the individual farmers to the Fondo Bioclimatico and the technical professionals that administrate and monitor the carbon sequestered by the project activities. Hence, although Scolel Té has not yet entered the CDM market, carbon outputs seem to have become more important than shared control over the process (Nelson & de Jong 2003).

Discussion and conclusions

The CDM is an interesting example of the contemporary rise of network-like governance arrangements in the environmental domain. It involves a multiplicity of public and private actors, and balances between governmental steering and business self-regulation, global institutions and local project practices. In this study we have explored the legitimacy of this new form of climate governance. Although launched as a great win-win compromise that will benefit all actors, our analysis points to important tensions between the range of expectations tied to the emerging CDM market.

On the output side, we see central trade-offs between the mechanism's two main objectives; cost-effective emission reductions and sustainable development in the host country. Building upon the economic incentives of project investors, the CDM has been designed to channel financial resources to low-cost projects that offer maximum emission reductions per investment. While this market logic is expected to reduce the overall costs of global climate change mitigation efforts, it also directs attention away from small-scale community based projects with additional social and environmental benefits. In market terms, participatory projects with diverse activities incur high transaction costs making them less economically viable to investors. Such projects are also less suited to comply with the complex methodological framework developed to ensure real, measurable and additional CDM projects. While established to guarantee the 'climate integrity' of the mechanism, these requirements seem to favour streamlined projects and resourceful project developers at the expense of projects implemented by low income communities at low rates of return. This tendency is reflected in our three case studies (see table 2). While the relatively large Chilean hydro project and the smaller Chinese cement project, both without significant sustainable development benefits, underwent rather quick and streamlined processes from their inception to the request for registration, the Mexican forestry project with a strong emphasis on community participation and sustainable development has been judged too complex to fit within the CDM framework.

Table 2. Overview of three carbon projects

Project	La Higuera	Huasheng Tianya	Scolet Té
Category	Renewable energy production: hydro power	Energy efficiency: industrial waste heat recovery (cement)	Land use change and forestry
Host country	Chile	China	Mexico
Volume	~480 kt CO ₂ e p.a.	~38 kt CO ₂ e p.a.	~1.8–40 kt CO ₂ e p.a.
Inception year	2004	2005	1997
Phase reached in CDM project cycle, May 2007	Registered	Validated, registration requested	Not sent for validation
Size of affected local community	Small	Small	Moderate
Cost effectiveness	✓	✓	
Basis for additionality	Displacement of fossil-fuel based electricity production	Displacement of fossil-fuel based electricity production	New agroforestry practices
Claimed benefits to local sustainability	Work generation, improved infrastructure	Reduced pollution, work generation, potential to diffuse modern technology	Fruit tree plantations, capacity building, gender equality, improved livelihood

Local community involvement	Moderate	Negligible	High
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We argue that the low standards for input legitimacy in the CDM project cycle, partly explains this limited attention to local sustainable development benefits in the emerging carbon market. Since the institutional framework set up to guide the design and implementation of CDM projects currently approaches stakeholder involvement as an add on activity that takes place ‘downstream’ after central decisions have been made, the concerns and views of local communities will automatically be less influential over the project design and development than those of Northern investors. Although the project cycle includes several access points for local stakeholders, we argue that the vague rules for information sharing and the technical complexity of the project documents are likely to hamper an active involvement of those directly affected by the project activities. As indicated by the Scolel Té case, locally anchored and participatory projects are severely disadvantaged in the emerging CDM market. This finding supports critical claims that the carbon market marginalizes “non-corporate, non-state and non-expert contributions toward climate stability” (Lohmann 2006: 204). The minimum standards for local stakeholder participation in the CDM project cycle points to an institutional bias that challenges the mechanism’s original win-win rationale.

When the multilateral rules for public involvement are based on minimum performance standards, we note that the input of local stakeholders lies in the hands of host governments and DOEs. In the DNA project approval process, the host government can play a significant role by acknowledging the link between stakeholder participation and local sustainable development benefits (cf. Michaelowa 2005). Nevertheless, evidence thus far suggests that the host country approval process has favoured projects with large quantities of CERs (Cosbey et al. 2005), or, as in the case of the Huasheng Tianya project, small projects that are straightforward in terms of technology and ability to demonstrate additionality (i.e. cheap). There are to date few examples of projects being rejected on sustainable development grounds (UNDP 2006). In the project validation phase, DOEs can also ensure that local participation is substantive in the design of the PDD and that project documentation reflects what did indeed takes place on the ground (Eddy & Wiser 2002). However, as indicated by our Chinese case there is no guarantee that DOEs take such concerns into consideration. Hence, the involvement of private actors in central governance functions raises questions about accountability in the CDM project process. The proliferation of private actors in the CDM market has not only resulted in a diffusion of political authority. The responsibility for corrective actions is also dispersed, making it unclear how decision-makers can be held account for their mistakes and omissions.

While the limited institutional attention to input legitimacy in the CDM project cycle has left affected actors with few formal mechanisms through which they can ask for corrective actions, we note that the CDM still is under development. Even though there to date are few signs that this multi-stakeholder partnership will close the legitimacy gap in global environmental governance, it is not too late to include forceful incentives for public engagement and sustainable development in the institutional framework of the CDM. In contrast to assertions that the mechanism by default is captured by corporate interests and constrained by the ‘free market’ ideology (Lohmann 2005, Lipchutz 2003), we see opportunities for institutional change and improvement. While the many actors who have a stake in CDM projects will play a central role in this process, we note that the issue of legitimacy, to a large extent, lies in the eyes of the beholder. Hence, in order to turn the CDM

into a real winner, the feasibility of the mechanism's win-win ambition requires further scrutiny and debate.

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