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From Public-Private Partnership to Market

The Clean Development Mechanism (CDM) as a New Form of Governance in Climate Protection

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Markus Lederer/Miriam Schröder

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From Public-Private Partnership to Market. The Clean Development Mechanism (CDM) as a New Form of Governance in Climate Protection

Gudrun Benecke/Lars Friberg/Markus Lederer/Miriam Schröder

Abstract

Tackling climate change is by now recognised as a policy challenge of utmost importance. The Kyoto Protocol is the most advanced multilateral effort to tackle climate change. One of the most interesting and innovative building blocks of the Kyoto Protocol climate regime is the Clean Development Mechanism (CDM). Since its inception this so-called flexible mechanism has been key in establishing a volatile and booming market for carbon emission reductions (CERs), which are the first internationally traded commodity created by an international environmental agreement. Within the process of market establishment and function, private actors such as companies, project verifiers, carbon funds and traders have become leading actors in the global carbon market. The market continues to be intimately policy dependent as demand derives from the stringency of emission allocations and future nation state commitments for greenhouse gas reductions. This article investigates the transformation of a market that has been initiated by public actors, kick-started by public-private partnerships (PPPs) and that has evolved into a market in which governments are withdrawing and private actors are increasingly taking up their governance function. It furthermore evaluates the status quo of the CDM and finishes with open questions for research.

Zusammenfassung

Die Bewältigung des Klimawandels ist heute eine der bedeutendsten politischen Herausforderungen. Das Kyoto-Protokoll ist der am weitesten fortgeschrittene Prozess der internationalen Staatengemeinschaft im Hinblick auf die Herausforderungen des Klimawandels. Einer der interessantesten und innovativsten Bausteine des Kyoto-Protokolls ist der Clean Development Mechanismus (CDM). Seit seiner Initiierung ist dieser so genannte flexible Mechanismus der Schlüssel zur Schaffung von volatilen und boomenden Märkten für Zertifikate für die Reduktion von Kohlenstoffemissionen (CERs). Diese Zertifikate, kurz CERs, sind die ersten international gehandelten Güter, die durch ein internationales Umweltabkommen geschaffen wurden. Während des Prozesses der Marktetablierung sind private Akteure wie Firmen, Projektverifizierer, Carbon Funds und Zertifikatshändler zu den führenden Akteuren des globalen Kohlenstoffmarktes aufgestiegen. Dennoch ist der Markt weiterhin stark von den politischen Rahmenbedingungen abhängig. Die Nachfrage wird durch die Festlegung von Emissionsreduktionen für Nationalstaaten und deren Emissionsallokationen geschaffen. Der vorliegende Artikel untersucht die Transformation des Markts, der zunächst von öffentlichen Akteuren initiiert, durch Public Private Partnerships (PPPs) angestoßen, sich zu einem Markt entwickelt, wo sich die Regierungen nach und nach zurückziehen und private Akteure immer stärker Governancefunktionen wahrnehmen. Weiterhin wird der Status quo des CDM evaluiert und auf verbleibende Forschungsfragen hingewiesen.

Contents

List of Abbreviations

AI	Annex I
CAN	Climate Action Network
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
COP/MOP	Conference of the Parties/Members of the Protocol
DNV	Det Norske Veritas
DOE	Designated Operational Entity
EB	Executive Board
EU ETS	EU Emissions Trading System
EU	European Union
EUA	EU Allowances
GEREF	Global Efficiency and Renewable Energy Fund
GHG	Greenhouse Gas
IET	International Emission Trading
IETA	International Emissions Trading Association
IO	international organization
IPCC	Intergovernmental Panel on Climate Change
UNFCCC	United Nations Framework Convention on Climate Change
NGO	Non-Governmental Organization
JI	Joint Implementation
LDC	Least Developed Countries
LULUCF	Land-use and Land-use-change and forestry
MNC	multinational corporation
NAI	Non-Annex I
NAP	National Allocation Plan
OECD	Organisaton for Economic Co-operation and Development
DNA	Designated National Authority
PCF	Prototype Carbon Fund
PPP	Public-Private Partnership
UN	United Nations

1. Introduction

Climate change is a hot topic in various ways. The scientific consensus as expressed by the Nobel Peace Laureate organisation International Panel on Climate Change in its 4th Assessment Report explicitly states that "warming of the climate system is unequivocal as is now evident from observations of increases of global average air and ocean temperature, widespread melting of snow and ice, and rising global average sea level" (IPCC 2007). As the debate on climate change moves from the scientific field to the realm of policy and economics, the question of how to address "the biggest long-term threat facing our world" (Blair 2007) is arguably the greatest public policy issue of our time. In this emerging policy discussion one of the prominent questions is cost, or what the most cost efficient ways to curb emissions are. Economists agree that climate change will be expensive, but ignoring it could be ruinous. A review of the economics of climate change, authored by the former World Bank Chief economist Sir Nicholas Stern, calls it "the greatest and widest-ranging market failure ever seen," but also identifies that one of the solutions is "to create carbon prices and markets, to accelerate innovation and deployment of low-carbon technologies" (Stern 2006). The most important market mechanism created within the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol is the Clean Development Mechanism (CDM).[1]

This article seeks to analyse the following aspects of the CDM:

- Is the CDM a new form of governance in climate protection?
- If yes, how did it develop and why?
- What were the conditions under which it evolved and what characteristics does it have today?
- Finally, what consequences regarding efficiency of the instrument and legitimacy of the implementing actors does the CDM as a possible new form of governance face?

While the Kyoto Protocol is clearly inadequate to reach the ultimate objective of the Framework Convention, avoiding dangerous climate change, it has already had an important impact. Most actors (state and non-state) now take climate politics seriously and are starting to take action.[2] Business, industry associations, lobby groups and NGOs have emerged that aim to influence

1 The United Nations Framework Convention on Climate Change (signed in Rio in 1992, and implemented in 24 March 1994) sets an overall framework for intergovernmental efforts to tackle the challenge posed by climate change. It recognizes that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases. The Convention enjoys near universal membership, with 189 countries having ratified it. The 1997 Kyoto Protocol shares the Convention's objective, principles and institutions, but significantly strengthens the Convention by committing 35 industrialised countries (Annex I Parties) to individual, legally-binding targets to limit or reduce their greenhouse gas emissions. Developing countries (non-Annex I Parties) do not have such a legal obligation to reduce their emissions in the first commitment period 2008-2012. After several years of political log rolling, the protocol was finally implemented on the 16th of February 2005. It is now (December 2007) ratified by 170 parties representing 61.6% of total GHG emissions.

2 In March 2007, the leaders of the European Union agreed to cut EU's GHG emissions by 20% from 1990 levels by the year of 2020, pledging to cut emissions further if other major emitters also take action.

policy making in this policy field. Forerunners such as the EU and its member states have developed policies trying to curb their emissions and from them policy innovations such as emissions trading for CO_2 and renewable energy policies are starting to diffuse to other countries. The steps taken so far, while being important first ones, are wholly insufficient, and it is clear that the majority of industrialised states with Kyoto targets (so called Annex I countries) will reach their modest reductions by 2012 only if there is a dramatic strengthening of efforts as well as a broad use of the Kyoto flexible mechanisms.[3] Therefore, the quest for the most effective and efficient emission reductions has begun. This has lead to both the broader use of new technologies as well as the development of the so-called flexible mechanisms of the Kyoto Protocol. It is these mechanisms which we will focus on in this paper.

In the Kyoto Protocol *three flexible mechanisms* were included. These consist of international emission trading (IET); the Joint Implementation (JI) project mechanism for former communist transition countries; and the Clean Development Mechanism (CDM) for emission reduction projects based in developing countries.[4] The main rationale behind these policy innovations was to allow Annex I countries cost effective climate change mitigation. The CDM is by far the most prominent of the flexible mechanisms, and we will thus focus our analysis on it. In 2006, 522 Mt CO2e of CDM credits where traded, with additional secondary trading of 40 Mt. Together these transactions came at an estimated value of €3.9 billion. Joint Implementation (JI) reached just 21 Mt, €95 million in 2006, whereas the IET has yet to be implemented (Point Carbon 2007). The Kyoto Protocol has created the first internationally traded commodity ever developed by a multilateral environmental agreement, certified emission reductions (CERs), and thus it seems to be of interest for policy as well as for academic debates how these CERs come about and what impact they have. The CDM as a market instrument is one of the most important building blocks in the developing carbon market, and thus we take it as our starting point. This is of particular interest as the governance of the mechanism has lately become a "hot topic" (Streck 2007).

First, we will provide a very short background of emissions trading, how the CDM works and why it came about (section two). Next we will examine the theoretical aspects of this development in environmental policy and argue that the CDM is indeed a new form of governance, although this cannot be said of the individual CDM projects (section three). In the following we will show that the CDM actually works more or less as originally conceptualized. We argue that it has been initiated by states and kick-started by Public Private Partnerships (PPPs) (section four), but that it is now evolving into a maturing market in which the aggregate of private actors engagement contributes to the public good of greenhouse gas reductions, albeit under

3 Despite being seen as the trail blazers on the issue of climate change, many of the 'old' EU 15 member states are struggling to meet their GHG reduction obligation under the EU burden sharing agreement to meet the 8% reduction by 2012 compared to the 1990 baseline, and will only do so with additional measures and through buying carbon credits such as the CDM (EEA 2006).

4 In the Kyoto Protocol the three flexible mechanisms are found in the following articles: Joint Implementation, article 6; Clean Development Mechanism, article 12; Emission Trading, article 17. The rules and modalities of the mechanisms were mainly negotiated in 2001 in Marrakech but have since been continuously further developed by the CDM Executive board and by the COP/MOP meetings.

the "shadow of hierarchy" of public actors that still have the constitutive rule-making power (section five). Following this, we will present a balance sheet of the pros and cons of the CDM and of the developing carbon market with the argument that overall the CDM can be judged to be a successful new form of governance (section six). The conclusion will elaborate on what this implies for research on governance in climate politics in general and for the debate about the CDM in particular. *In brief, our paper has two arguments: First, the CDM is a new form of governance. Second, the form of governance has been changing from a PPP to a volatile but nevertheless functioning market.*

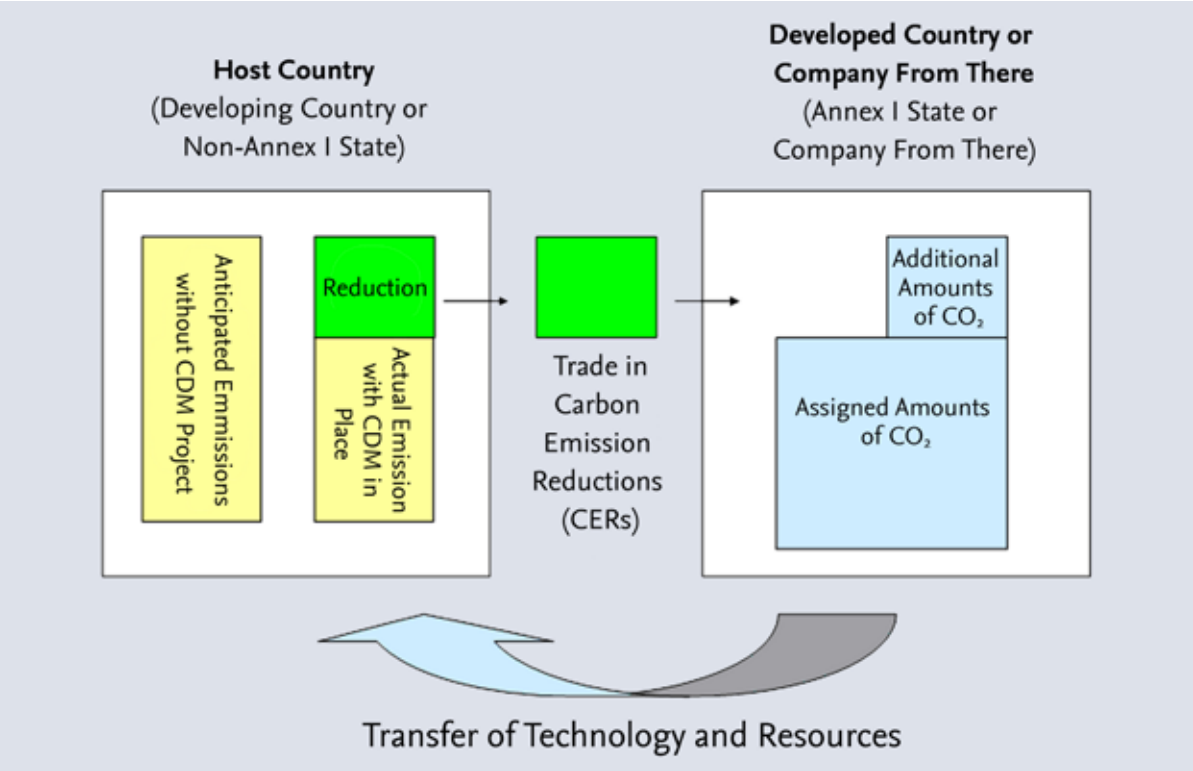
2. How Did the CDM Come About and How Does It Work?

In the late 1980s under the Regan administration in the United States there was a growing neo-liberal sentiment that saw inadequacies with the traditional command and control regulation and argued in favour of using market instruments to tackle policy problems. This notion was taken up in environmental policy making. For example, in the 1990 Clean Air Act such a market approach was taken to tackle SO_2 emissions causing acid rain, a previously unregulated problem in the US. Given the difference in abatement costs for the covered power plants, this proved to be a much more cost-efficient regulatory approach that was able to achieve greater emission reductions than traditional technical regulations (Stavins 1998). The idea of using a market approach for setting up efficient mechanisms was again included in the Montreal Protocol on Substances that deplete the Ozone Layer in 1987 and then later in the Kyoto Protocol in 1997.

The CDM in particular arose out of a Brazilian proposal for a Clean Development Fund at negotiations in the late 1990s. The United States changed this proposal into something quite different. It sought to establish a protocol that would have as much flexibility in achieving emission reductions as possible, and one with the possibility of international emissions trading to achieve cost-effective emission reductions. At that point the creation of emission markets was considered a controversial element and was opposed throughout the Kyoto negotiations by environmental NGOs and also initially by developing countries, who felt that industrialised countries should first put their own houses in order, and who feared the environmental integrity of the mechanism would be too hard to guarantee. Eventually, and largely on US insistence, CDM and the two other flexible mechanisms were written into the Kyoto Protocol. It is one of the great ironies of the climate regime that the concept of emissions trading later became the cornerstone of the EU policy to tackle climate change, despite the fact that the EU was initially quite sceptical about this approach, and that the US, who championed this approach, later decided to leave the Kyoto Protocol anyway. There are still critical views of the use of market mechanism in the climate regime (see also below), but as the concept has advanced into the mainstream, they are no longer as widely held (Lohmann 2006).

How does the CDM work? As already mentioned, the CDM is one of the flexible mechanisms set up by the Kyoto Protocol to reduce GHG emissions through investments in projects that reduce or avoid emissions in developing countries. Figure one shows how this works in detail.

Figure 1: The CDM Set-Up

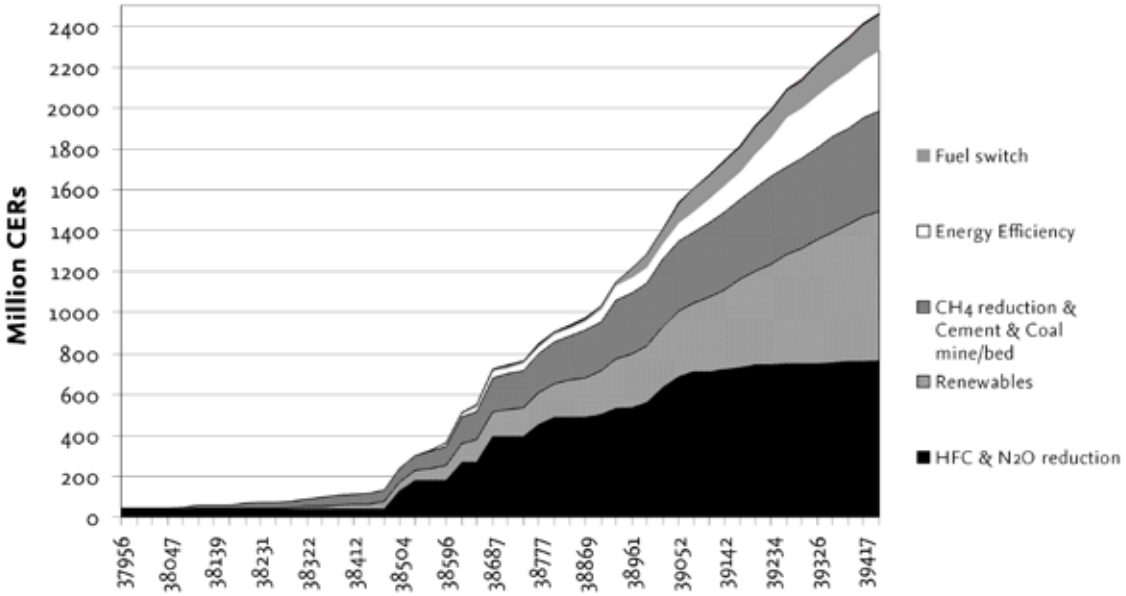


Source: Own Adoption

Each CDM project is set up by a project developer who receives CERs for the amount of GHG avoided. The demand for CERs comes from industrialized countries that can count these credits towards Kyoto compliance. The 12,000 industry installations covered by the EU emission trading system (EU ETS) can also use CERs to account for a part of their emission reduction compliance within this internal EU system for CO_2 reductions. Japanese firms buy CERs to meet their voluntary targets. The CDM has the dual goal of providing cost-efficient GHG emission reductions and local sustainable development benefits.

The CDM has grown very successfully in the recent years, and its immediate future also looks bright. If 85% of all projects entering the pipeline until the end of 2012 would be registered, and if the average issuance success would stay around the current 83%, the amount of CERs accumulated by the end of 2012 would be 3100 Million CERs (for details up to 2007, see figure 2).

Figure 2: Growth of Total Expected Accumulated 2012 CERs



Source: UNEP Risø Centre, March 2008

All major management decisions for the CDM as a whole are made by the Executive Board (EB), which is the highest authority and main regulatory body of the CDM and is compromised of six members from non-Annex I and four members from Annex I countries. The board issues CERs after a successfully completed registration and verification process. Worth noting is that of the 948 projects approved by March 2008, and with some 2000 more at different stages of validation in the pipeline, close to two thirds are renewable energy projects. However, of all CERs issued so far more than two thirds come from a small number of industrial gas destruction projects (HFCs, PFCs and N_2O) (Fenhann 2008). These projects earn huge numbers of CERs due to the great global warming potential of these gases compared to CO_2, but they have marginal sustainable development effects.[5] Nevertheless, the CDM is hailed as a success in creating emission reductions beyond expectations. Yet, going beyond the details, can it be classified as a new form of governance?

5 It should be noted that the market for CERs does not constitute the whole carbon market; there is also the market for emission certificates from the EU Emission Trading System and similar national or sub-national systems as well as a private market for voluntary emission reductions. The characteristics of these systems differ despite potential links between the different parts of the carbon markets, such as the use of CERs by EU industry to meet their EU ETS compliance. In this article, unless stated otherwise, when we discuss the carbon market we refer to the carbon market for CERs.

3. A New Form of Environmental Governance?

The following section will position the CDM as a policy innovation in current debates on governance. In order to qualify as a new form of governance the CDM has to have two characteristics. First, it must systematically involve non-state actors and second, it must rely on non-hierarchical forms of coordination (Risse/Lehmkuhl 2006).

Regarding the *involvement of non-state actors*, the governance debate acknowledged very early on that the relocation of authority from national entities to non-state actors was necessary to ensure the delivery of functions essential for human survival (Rosenau 1992). This notion has been taken up in recent debates on global environmental governance (Young 2001; Luterbacher/Sprinz 2001; Biermann/Dingwerth 2004) that all agree on a demand for policy instruments that go beyond the traditional state-centred approach in order to tackle emerging global environmental problems such as climate change.

The CDM is clearly such a policy innovation where the environmental governance mechanism depends upon the engagement of private actors to function. The increased involvement of non-state actors such as businesses and NGOs can be witnessed in the policy formulation and implementation cycle. This is characterised by a quality of involvement distinct from previous self-regulations or voluntary commitments. Business actors in particular have become much more involved at all levels of environmental governance, not necessarily due to their insistence to take on this role, but also due to the voluntary "abdication" of the state in line with ideological ideas of less or smaller government (Esty 2002; Levy/Newell 2005).

Going beyond the role of individual actors, as in the case of private businesses, the literature on public-private partnerships examines the various actors' constellation and their implications for governance (Reinicke 1998; Risse/Börzel 2005). New coalitions of various actors combining businesses, NGOs, international organisations and nation states in different constellations result from the general demand for more integrative solutions. Individually, these actors either lack resources and/or capacities to tackle the problem themselves, and consequently, cross-sectoral alliances allow for complementing resources and expertise to collaborate in order to attain effective policy making and implementation. This implies that new actors' constellations might even provide alternatives to traditional public policy with regard to ensuring the provision of public services such as healthy living conditions (Rosenau Vaillancourt 2000). In our case study below we examine the role of such PPPs in the early phase of the CDM. Our focus of analysis is on the changing role of public actors in setting and enforcing the constitutive and regulative rules of the CDM. It is evident that new actors are becoming involved, but are the emerging PPPs temporary arrangements to jumpstart the CDM policy process, or do they sustain themselves as viable long term structures?

More problematic is the question of whether *new modes of non-hierarchical coordination* are brought about by the CDM (see Benecke 2007). As the CDM is creating a market for CERs, the question arises as to whether a market can qualify as a form of governance. Governance in a

broad view includes all forms of social coordination in hierarchies, as well as in networks and markets (Williamson 1985; Powell 1990; Coase 1991). Governance defined as such subsumes all coordination modes that constitute social order. A market instrument such as the CDM is thus one of the possible types of regulation, besides command-and-control or fiscal measures, which a public regulator can use for achieving policy goals.

Stressing the use of the market instrument of emission trading to achieve the emission reduction targets of the Kyoto Protocol does not deny that to initiate the process requires the political set up of a market for the emission reduction certificates. The requirements to create the market thus differentiate the market for CERs from markets where tangible goods such as natural resources or commodities are traded, and which do not require political intervention to have any value. Politically created markets or permit markets are also found in other areas where the need for regulation of private activities occurs, e.g. quotas for fishing or licenses for the operation of mobile phone frequencies in order to manage a public good (Yandle 1999). The actors with an interest in this form of market mechanism (in our case the nation states who are parties to the Kyoto Protocol) had to agree upon the rules for CDM (The Marrakech Accords) before the demand for CERs, the seed for the emerging carbon market, could be met by suppliers.

Yet, in order to attain greater analytical value and selectivity, the application of a *narrow definition* is proposed (Ladwig et al. 2007; Göhler et al. 2006). Such a definition understands governance as governing through non-hierarchical mechanisms involving various actors whose actions and interaction mechanisms are intentional, and would thus exclude market actions without regulative interference. The application of such a narrow governance concept is confronted by the assumption that hybrid forms of governance depend on the state to balance asymmetric constellations and require the state to more or less directly regulate society. This positions the state as either the central, intentional actor or demands the existence of a shadow of hierarchy (Héritier 2003), which is controversial in regard to the transferability of this concept outside its originating context, i.e. the OECD world. The second assumption contained in a more narrow definition of governance as "the intentional delivery of collective goods and service to a certain community" (Risse/Lehmkuhl 2006) propagates the intentionality of public service delivery as a prerequisite to characterising new mechanisms as governance.

What does the adoption of this rather narrow governance concept imply for the CDM? Analytically speaking, *the CDM encompasses a regulatory framework and an operational framework*, and thus constitutes a multilevel mechanism. Regarding the regulatory structure, the CDM is comprised of the institutional set up, operational procedures of the CDM Executive Board (EB) as well as the basic "rules of the game", e.g. project procedures and methodologies set down by the Marrakech accords by nation states. On the whole, this governance structure thus employs a shadow of hierarchy since it is backed up by nation states acting through the UN and with the Conference of the Parties (COP) to the Kyoto Protocol as the ultimate decision making authority. The regulatory structure of the CDM can thus be described within a narrower governance framework.

If we, however, examine the operational framework, i.e. the CDM project cycle from developing a CDM project to selling CERs, different modes of transactions and interactions between the various CDM project actors, verifying bodies, and the CDM Executive Board make up the "steering mechanisms" of the CDM. Dependent on the actors' constellations, interactions can be differentiated as either profit seeking behaviour trying to maximise the carbon credits from a project, or as public-interest related concerns to uphold the environmental integrity of the system. In the former we cannot speak of governance but only of business. Thus, in a narrow concept of governance we distinguish between carbon business and the regulation of the carbon business.

In short, the CDM is a new form of governance on both accounts: in its systematic inclusion of new actors and in its incorporation of new forms of coordination. However, the latter aspect has to be qualified in the sense that individual CDM projects cannot necessarily be described as a form of governance, as they simply represent part of a market mechanism. Why this is of importance will become clear in sections 4 and 5 where we show that the logic of the market is becoming more and more dominant within the CDM as a whole.

4. From PPP…

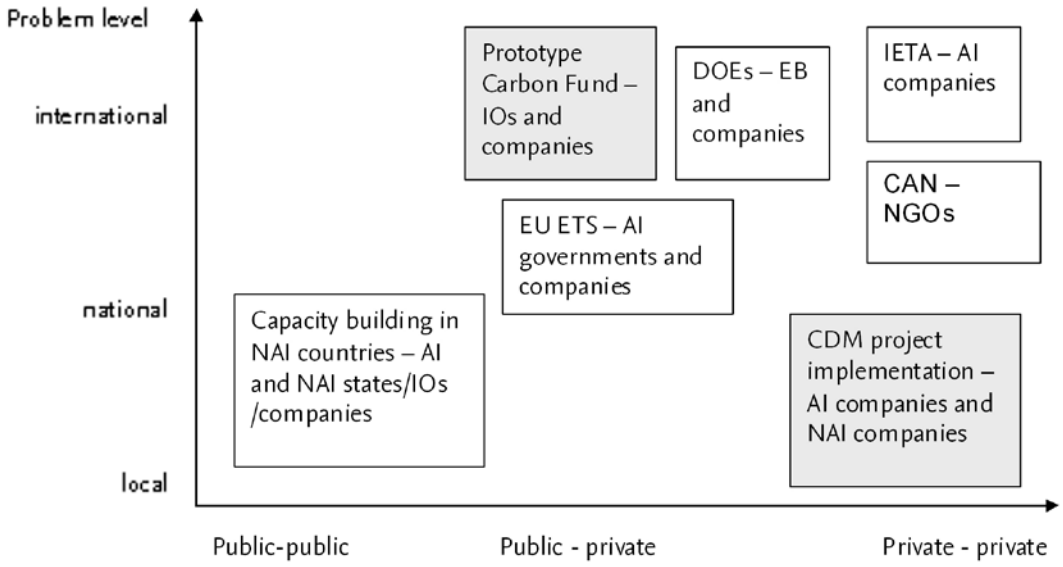
The following two sections analyse the transition of the CDM and the emerging carbon market from being dominated by government-initiated PPPs to becoming a market place on which public and private actors engage in normal business transactions and have even become competitors. Knill and Lehmkuhl provide two useful categories which can be applied to describe the position of the state in the initiation phase and the maintenance phase of the carbon market: in the first phase the state is active by intervening in the situation by intervention; in the second phase the situation is one of of "regulated self-regulation" with the overarching shadow of hierarchy (Knill/Lehmkuhl 2002).

Most of the partnerships in the field of CDM serve as capacity building and implementation networks for facilitating the development of necessary structures and institutions and for the implementation of projects. Nevertheless, these networks go beyond implementation if they use the case law mechanism set up by the Executive Board to propose new CDM methodologies or modify existing ones. Carbon market actors thus take a *dual role* in being the objects of the carbon market regulations, while at the same time being able to propose changes to the regulative rules of the market. Or, in some cases, private actors consult for developing country governments on how they should design their regulatory agency or "Designated National Authority" (DNA) – the same body that the consulting firm will later seek project approval from. Industrialised Annex I governments possess an even stronger dual role: they are buyers of CERs on the market, while simultaneously deciding upon the rules of the market as parties to the Kyoto Protocol. Only purely private partnerships that represent interests and arguments of a single group, e.g. the International Emission Trading Association (IETA) representing industry or the Climate Action Network (CAN) serving as an umbrella organisation for NGOs active in

climate change politics, can be said to be "negotiation networks" that have as their objective the negotiation of global norms and standards (Witte et al. 2002).

Partnerships in the CDM can be characterised as either public-public partnerships, such as capacity building measures that are initiated by e.g. Annex I countries in non-Annex I countries for the set up of administrative institutions for the CDM, as private-private partnerships between NGOs or between industries with common interests on the carbon market, or as public-private partnerships on the global level, such as carbon funds for private companies initiated by the World Bank or as public-private partnerships on the local level for the implementation of CDM projects (see figure 3).

Figure 3: Multilayered Problem – Diverse Set of Partnerships



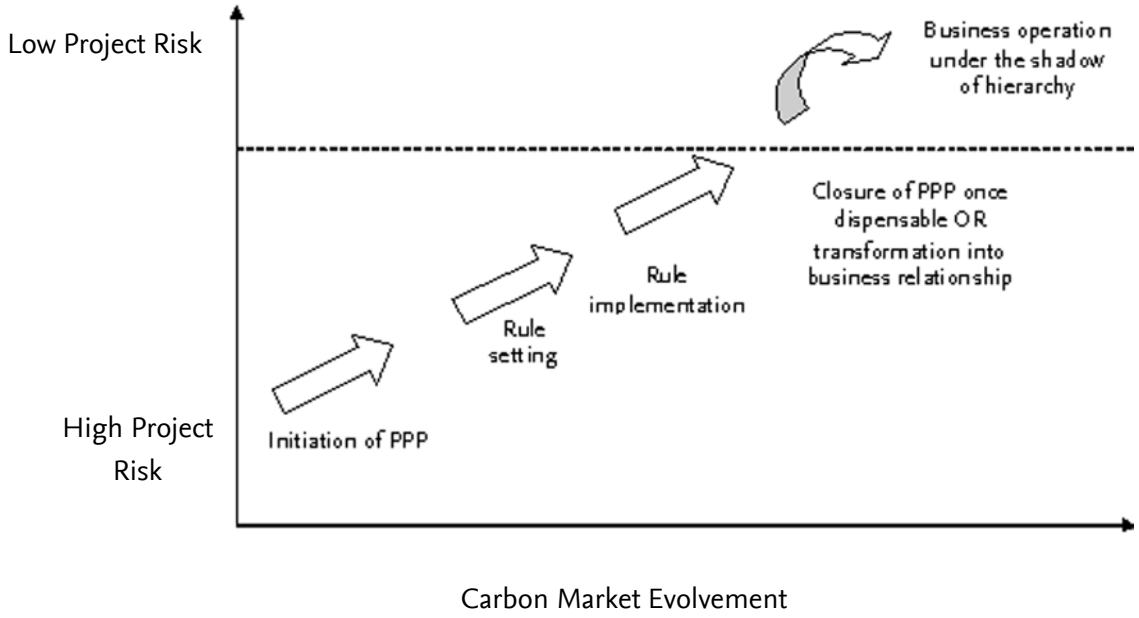
Legend: AI = Annex I; EB = Executive Board; NAI = Non-Annex I; IO = International Organisation; IETA = International Emissions Trading Association; DOE = Designated Operational Entity

Source: Own Adoption

The importance of PPPs to get the CDM and the carbon market off the ground is clear. In the beginning, inexperience in how to create and regulate a market for certified emission reductions and high technical and economic risks linked to the implementation of CDM projects made public and private actors act together in public-private partnerships (PPPs). In other words, transaction costs were too high as was the general uncertainty so that private actors were not ready to shoulder CDM projects on their own. With growing maturity of the market and many lessons learned by public and private actors alike, the PPP approach is becoming increasingly dispensable.

Just as in many other policy fields, PPPs are often formed as "policy experiments" (Rondinelli 1983) in which participants are motivated to acquire more knowledge about regulative and operational procedures without expecting monetary benefits. Once a market has matured to such an extent that project risks and costs become bearable for the private investor, the need to cooperate with public actors for risk elimination becomes less, but other areas of cooperation may continue such as information sharing (see figure 4).

Figure 4: Life Cycle of Cooperation from PPP to Business Operation



Source: Own Adoption

The following paragraph takes the Prototype Carbon Fund (PCF) as an example to illustrate the role of a PPP on the carbon market in kick-starting business activities. The PCF began as a learning experiment between the World Bank, nation states and several multinational corporations (MNCs) and served as the blueprint for the set up of several other public and private carbon Funds.[6] The PCF has been launched in cooperation with four European governments, Canada and Japan, and 17 private companies, bringing together 145 million US$ for the purchase of GHG emission reductions via CDM and JI projects (Streck 2002). The objectives for the PCF were to pioneer the flexible mechanisms, to disseminate the lessons learnt, and to foster the development of the carbon market by "crowding in" the private sector through a reduction of operational risks and transaction costs of project activities, while contributing to sustainable development and poverty reduction in host countries. Its members had time to learn from both their partners' and their own experiences with CDM projects, enabling them to become early

6 Carbon Funds initiated by the World Bank include the Community Development Carbon Fund, Bio Carbon Fund, Netherlands CDM Facility, Netherlands European Carbon Facility, Italian Carbon Fund, Danish Carbon Fund, Spanish Carbon Fund, and the Umbrella Carbon Fund.

movers when the carbon market became operational in 2005. For disseminating the lessons learnt from early CDM and JI projects, the PCF set up a website and launched the PCFPlus, a $1 million/year facility to provide capacity building and research. A good indicator for its success was the closure at the end of 2006 with 25 purchase agreements signed for the removal of over 30 million tons of carbon dioxide equivalent from the atmosphere (Carbon Finance Unit at the World Bank 2006).

The role of the World Bank in the management of carbon funds is however controversial. Researchers and practitioners criticize the Bank for overstretching its self-assigned role as a facilitator of the carbon market when it makes a substantial amount of money out of its commissions on projects (Vallette et al. 2004). Also one can argue that the World Bank is crowding out private investments profiting from its established network. Even more fundamentally, through its initial strong position in the market as well as in the regulatory field, the World Bank could be prone to influence CDM regulation in its own interest (regulatory capture). Critics, furthermore, find the role of the World Bank schizophrenic, as it facilitates the carbon market while simultaneously not being willing or able to mainstream climate change considerations into their energy projects or country strategies (Vallette et al. 2004; Baumert et al. 2005; Seymour 2006). On the positive side one can argue that the role of the World Bank has changed in the process: while its facilitation in the beginning focused on initiating CDM projects in any country of choice, the World Bank has again taken an open-door position with regards to so far neglected project types, e.g. launching the Bio Carbon Fund for Land-use and Land-use-change and forestry (LULUCF), and neglected regions like Africa.[7] This example shows that PPPs are needed to jump-start a high risk market but should eventually be replaced by private business operations as the risk of engagement decreases. However, at this point in time, PPPs on the carbon market are still needed for broadening the reach of the CDM to poorer, less developed regions such as Africa or for project types with higher risks in which private actors are not willing to invest without public back-up.

One of the most interesting phenomena about the CDM is that the *generation of private goods* (CERs production) by many – in the beginning through a PPP – is in its sum supposed to contribute to the provision of the public good (climate protection), while some club goods (market regulation, local environmental protection, job creation) are provided as intended side-products (see figure 5). The intention of providing the public good of climate protection has to be traced back to the inventors and rule-setters for the CDM, while the output of their intentional initiation of the CDM – the eventual carbon market – can hardly be described as having an intention by itself. Their intention and actions have nevertheless created the structure which in turn impacts the behaviour of market participants, some of which are identical with the market creators (Annex I governments).

7 Up to the end of 2006, the World Bank had included seven CDM projects in sub-Saharan Africa into its funds. For more details see Capoor et al (2006).

Figure 5: Types of Goods Provided by PPPs

Rivalry in consumption **Exclusion in consumption**	Rivalry in consumption	Non-rivalry in consumption
Exclusive in consumption	**Private goods** CERs	**Club goods** • Job creation • Local environmental improvements • Regulation structures/ carbon market • Capacity building for institutions
Non-exclusive in consumption	**Common goods**	**Public goods** • Cost-efficiency of GHG reduction • Climate protection

Source: Own Adoption

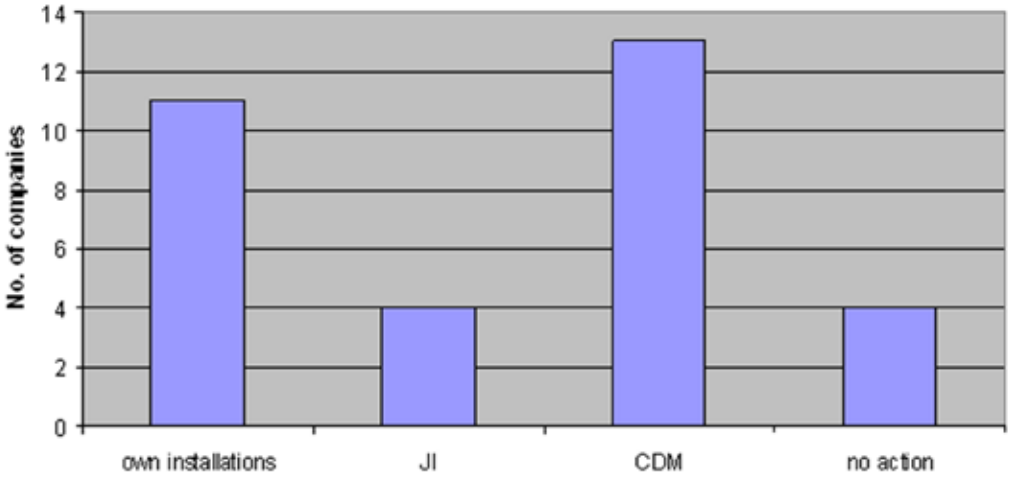
An indicator for the threshold between PPP and business operation is a situation in which private actors (e.g. carbon funds) acquire a good in competition with the PPP (e.g. World Bank carbon funds), indicating that the need for a PPP has diminished as risks and costs of the good have become bearable for private actors. As CDM projects are now set up less and less to generate club goods like capacity building or to stimulate the carbon market, but are instead primarily being initiated to generate CERs as a private good, it seems justified to speak of a functioning market for CERs generated through CDM partnerships.

5. …to Market?

Today, a functioning carbon market for CERs exists. This does not imply that there is no longer a role for regulation. Markets depend on someone setting and managing constitutive as well as regulative rules. That rules exist is no longer of interest, but rather those questions of who sets them, how, and why. As we stated above, the PPP initiated to kick-start the CDM for the provision of the public good of climate protection lay the foundation for the carbon market for CERs that turned into normal business operations with private goods (e.g. carbon fund return rate and CERs) as their main output (see again figure 4 for illustration). However, their activities taken in the aggregate should – and we believe they do – contribute to the provision of the public good of climate protection.

What characteristics define this emerging market? First, it is *actually used not only by public entities but more and more by private companies*. In a survey conducted by Benecke, Friberg, and Schröder in 2006,[8] one could see that almost all interviewed companies that had to reduce emissions were participating in the carbon market: out of the 15 European companies, 10 companies are investing in their own installations, four are interested in JI projects, one company is creating its own CDM project (in its refinery plant outside Europe) and 12 have chosen to become engaged in the carbon market as buyers of CERs (Certified Emission Reductions). Only one Austrian and two Swedish companies plan not to become active, as their "National Allocation Plan (NAP) allocation was sufficient," and thus they see no need for additional permits.

Figure 6: Compliance Strategies



Source: Own Adoption

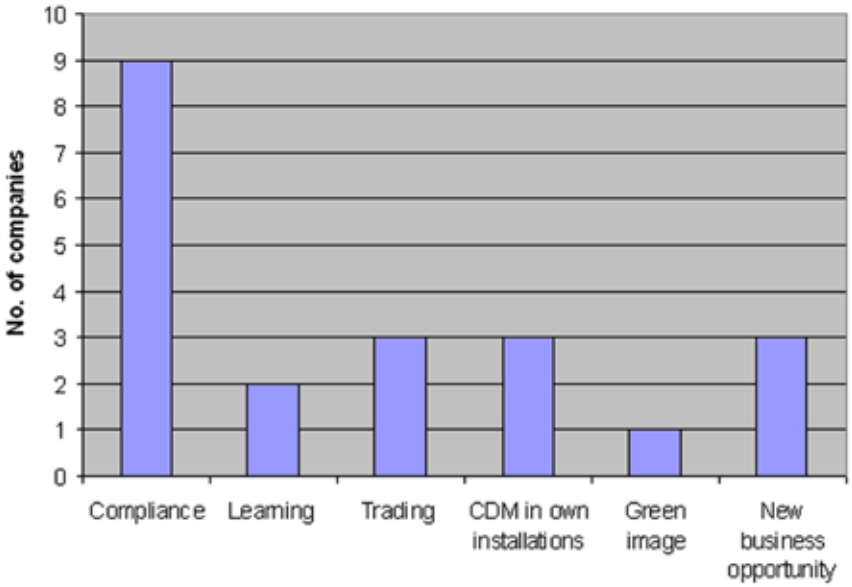
CDM stakeholders such as government bodies, NGOs and non-compliant private actors confirm that those engaged in the CDM are predominantly larger companies mainly in the power sector and the steel and chemicals industries with transnational outreach. Surprisingly missing so far are smaller and medium sized companies, as they are not affected by emission reduction obligations and/or are inexperienced with international operations. A first lesson thus is that if a company has to reduce its emissions, and CDM projects abroad provide more cost-efficient

8 The survey consists of telephone-based and personal interviews with 36 stakeholders within the CDM market. The selection of interviewees was based on their perceived importance to the market. For example, among companies with reduction obligations under the European Emission Trading System (EU ETS), the companies with the largest installations within their country's National Allocation Plan (NAP) were approached for an interview. The interviews were conducted during August-October 2006 either in person or via telephone using a semi-structured interview guideline. Japanese companies were included in the survey despite different framework conditions due to their relevance to the carbon market and in order to get a business perspective from a different angle. In favour of honest and frank answers the interviews were conducted under the Chatham House Rule, so no attribution to specific firms will be made in this text.

ways of reducing emissions than would reductions in home installations, at least large companies will use market mechanisms like the CDM to comply with their obligations.

Second, politics influence demand, *but prices influence supply*. CERs have thus developed into a tradable commodity. Besides the volume and price of CERs generated, companies do not seem to have a clear preference for project types, and almost half of the interviewed companies prefer a mixed project portfolio (in most cases via funds) in order to keep risks diversified. In short, there is a market where a CER is a CER is a CER. The only exceptions are those market niches creating CERs that are not accepted under the EU ETS (e.g. re-forestation CERs). The market is, however, still highly volatile and reacts to political events, not just economic fundamentals. This could be seen in 2006 following the release of the first verified emissions data: the price for EU ETS credits collapsed from over €30/ton to below €0,30/ton as the extent of over-allocations for the first EU ETS test period 2005-2007 became apparent. This clearly diminished the price companies were willing to pay for CERs for this time period, even if forward prices for CERs held up better. Another interesting result of the survey was that although all companies interviewed have obligations under the EU ETS, only 8 out of 12 companies gave "compliance with the EU ETS" as a major reason for their engagement in CDM.

Figure 7: Motivations for CDM



Source: Own Adoption

Some companies – interestingly only refineries – stated to have been active in CDM right from the beginning in order to accumulate knowledge and to learn from early activities. Interviews with other stakeholders confirm that apart from making profit and seizing opportunities to explore and access new markets, the possibility of learning experiences due to an anticipated continuation or extension of emission trading and the CDM are key motives for companies' CDM interest. Yet, one company also gave "attaining a green image" as a rationale, but this must not be considered a decisive factor, as NGOs rightly point out that "green image" rationales

supposedly do not play a predominant role, as this is too expensive compared to cheaper "green" PR alternatives. Therefore, the second lesson learned is that private businesses are acting strategically and are ready to shoulder up-front costs for learning or for exploring new business opportunities. Contrary to our preliminary expectations, the incentive of gaining a green image does not seem to play a role even if that seems to be the main driver in the unregulated, emerging market for voluntary carbon reductions such as offsets.

Third, the market is starting to *divide into a primary market* that is project-related with a long-term orientation *and into a secondary market* that relates to trading with options and futures on project-generated CERs. In 2006 transactions in the primary market totalled 522 Million tons (Mt) CO_2e, with an additional 40 Mt in the secondary market. Together these reductions where worth an estimated €3.9 billion (Point Carbon 2007). This secondary segment emerged in 2006 and is characterised by its short-term and fast nature, the small number of actors involved and thus a lack of liquidity. Interviewees describe both market segments as highly complex, technical and fluid, which would allow only specialised actors to engage in them. Over the last years market actors have gathered a growing expertise in financing and trading with CERs. This pertains to the emergence of new market actors, e.g. local banks, Designated Operational Entities (DOEs), and even leads to certain saturation in distinct segments, as well as new market instruments provided by banks and stock exchanges. The third lesson is thus possibly the most obvious one: whenever profits can be made and opportunities for arbitrage exists, financial actors try to profit.

Fourth, the market is *still unstable and only partially mature.* Characteristic features of the primary market, which most of the interviewees refer to, are its lack of stability due to a high number of entries. Generally speaking, the CDM is considered a pilot still working on a trial and error basis. It has shown that it works, but that it constitutes a niche rather than a mainstream market. A factor that contributes to certain instability apart from the infant state of the CDM is the emergence of the above-mentioned secondary market transactions that still lack price transparency. Stakeholders, to a large extent, agree on the position that the carbon market is somewhat uncertain since it is more policy dependent than any other market due to its enshrinement in the Kyoto Protocol. However, due to the uncertain political and pricing decisions after 2012, a growing insecurity amongst market participants is recognised. Factors that add to this uncertainty are fears of market distortions resulting from the EU burden sharing and NAP II decisions, as well as the shifting additionality criteria relating to the CDM projects. Particularly companies representing the buyer, i.e. demand, side in the carbon market agree on the characterisation of the CDM as a „jungle" even if it is more mature now than one year before (Point Carbon 2007). This is because the CDM provides opportunities for successful early movers to earn large profits but at large risks. One of the largest CDM project developer, EcoSecurities lost 47% of its share value in a single day in November 2007, wiping out all gains made since the public offering in October 2005 (Financial Times 2007). This crash was due to a 30% write down of projected CER volumes in the company project portfolio. The final lesson is thus that due to its high complexity, regulatory and legal issues are considered substantially more relevant than in other markets. Thus, there is a market, but politics rules over all.

6. A Successful Policy?

So far we have provided a theoretical analysis of the CDM as a new form of governance, and we have shown that the CDM changed from being primarily a PPP to being an immature but nevertheless functioning market. It now seems appropriate to evaluate the CDM and to examine its function in policy. What are the strengths and weaknesses of the CDM and can it be judged to be a successful policy tool?

The first and very important strength of the CDM is that it is fulfilling one of its primary goals, which is to provide *cost-efficient* emissions reductions. To clarify again: the CDM mechanism itself does not lead to global GHG reductions; it can only provide a cheaper way to reach those reduction targets that Annex I countries have agreed upon. The price for CERs ranged between €5 and €13/ton at the end of 2006 depending on the risk and maturity of the underlying project (Point Carbon 2007). As long as CERs – reductions derived from developing countries – are cheaper than EU Allowances (EUAs) – reductions derived from within Annex I countries – they are of interest for companies and countries alike.[9] This is the case even though they are accompanied by higher risks, ranging from project specific risk factors to currency risks, by rejection at some stage in the CDM registration process, and by CERs delivery. Nevertheless, CDM creates an additional supply of credits that add to the overall amount available to companies in the EU ETS system, lowering the cost of compliance. Thus, some European countries like the Netherlands and Spain find that the CDM lowers their total cost for Kyoto, allowing them to reduce the reduction efforts they need to impose on domestic sectors. The European Environment Agency has shown that without using the flexible mechanisms many of the old EU 15 member states could not reach their Kyoto reduction targets by 2012 (EEA 2006).

Second, from a market actor standpoint the biggest advantage of the carbon market is its high *flexibility*. As mentioned above, many of the companies interviewed regard engagement in CDM as an important way to hedge their carbon risk. By adding the CDM option to their compliance tool box they increase their flexibility. The flexibility aspect seems to be a more important motivator for some actors than the lower price on CERs compared to EUAs. This flexibility even extends over time as CDM creates a single shut off safety valve for European compliance companies into the second EU ETS period 2008-2012 as they can choose to use their CERs either in the present or in the second commitment period, an option not available for the EUAs in the pilot phase (until the end of 2007), as banking of EUAs between the first and second phase is not allowed. This increases companies' flexibility and reduces their exposure to EUA price fluctuation risk.

Third, the CDM has a potential role in *facilitating technology transfer and increasing foreign direct investments into developing countries*. Market participants stress that the technology has to be suitable to the local context, and that it is as much a matter of transferring and building up

9 The crash of the price for EUAs in May 2006 forced some project developers, e.g. those in India, to reconsider their price expectations as there was no longer a market for CERs costing above €20/ton.

human capital skills and management systems as a matter of transferring technology hardware. For example, 2006 saw a number of large barter deals where technology providers got CERs as payment in return for providing technology and competence to project hosts reducing HFC-23 or N_2O adipic acid. The CDM was also important in bringing in a substantial amount of capital in the overall carbon market.

Fourth, and from our perspective the most important aspect, is that the CDM is an *explorative form of governance*. It is explorative in various ways: i) it brings in new actors (for example American hedge funds in the secondary market); ii) it allows developing countries to first gain experiences and then to enhance local human capacity and institutions for managing and controlling GHG mitigation, which Streck (2007: 92) thus calls the CDM an "interface" between Annex I and Annex II countries; iii) it provides incentives for the development and deployment of new technologies and methodologies that might become important in the post-2012 climate regime such as wind energy, land fill methane recovery and energy efficiency.

Of course there are also serious *weaknesses* that have to be discussed. First, there are more *technical issues* that nevertheless have important *political implications.* For example, the burden to oversee the compliance with CDM rules is to a large extent placed on the shoulders of the Designated Operational Entities (DOEs). These private standardization agencies are hired by the project developer as external auditors of projects' compliance with CDM rules to see if the project is actually reducing emissions as claimed and that it is correctly accounting for these reductions according to the methodology. Host governments, buyers (Annex I governments and companies) and project developers all have an strong interest for CDM projects with low baselines and a maximum generation of CERs, and DOEs are together with the CDM EB set to uphold the integrity of the system. Thereby, the governance function of checking and enforcing rules is to a large extent outsourced to private companies who are only bound by their accreditation by the Executive Board and by their company's reputation. There is a pronounced risk that some DOEs might try to attract additional business by being too lenient or fast in their vetting of the projects. The governance function of controlling the operative rules of the CDM has thus been delegated by the Kyoto Protocol parties to DOEs, and there are calls even from the private sector that the Executive Board is simply not professional enough to guarantee good regulation. It acts as a UN committee and not as a market regulator (Streck 2007: 98). There is also a growing competition between host countries trying to attract CDM projects, and there is a clear difference between how thorough host countries Designated National Authorities (DNAs) are in their screening of projects. Thus, it is highly questionable if all actually fulfil the host countries' own criteria.

Second, in the survey of Benecke, Friberg, and Schröder (2006) market actors strongly complained about the *complicated and bureaucratic process of establishing CDM projects*. The lengthy process of registration, verification and approval is seen as too slow, arbitrary and developed without an understanding of how business works. Another complaint is that micromanagement of petty details, in particular by the Executive Board, creates a bottleneck ultimately slowing down the process. All this process friction drives up the transaction costs of doing CDM projects, and

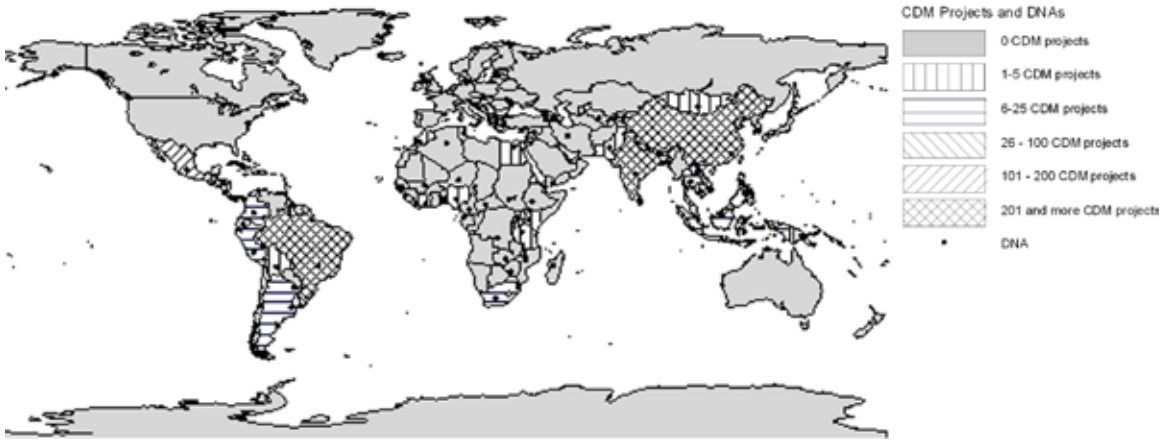
the complexity and time lag create a high threshold for new entrants. A similar complaint is that the methodology of financial additionality is seen as difficult and subjective in its strong application.[10] The involvement of bureaucracies is, however, no surprise, as it is through government actions that the market is set up in the first place. This of course does not excuse the first indications of corruption or the slow down of individual CDM projects through bad governance, but these problems of abuse will most likely not endanger the whole process.

More serious is the allegation that CDMs are not *contributing to sustainable development*. In particular NGOs criticize some CDM projects for failing to contribute to local environmental improvements (Lohmann 2006). In some instances the CDM has even created perverse incentives encouraging environmentally unfriendly behaviour. For example, the ozone depleting cooling agent hydrochlorofluorocarbon 22 (HCFC 22) should be phased out under the Montreal Protocol, but as the destruction of the by-product HFC 23 is so immensely profitable as CDM projects, several new factories have been built despite the fact that the gas should be phased out (EIA 2006). Even when such perversions are stopped, the larger questions are whether CDM can actually make a difference at all in its current form as a small, project-based mechanism, and whether it will be able to have a perceivable impact on the energy policy of countries which face very high investment needs to restructure their economics to become low carbon intensive. Of course it does not help that the demand for CERs is to a large part driven by EU ETS allocations, and policy makers here have so far failed to create a „short" market.

Another criticism of the CDM is the unequal *regional distribution of CDM projects* (shown in map 1 below). It is highly concentrated in a few, large, relatively well-developed countries, with only a handful of the 547 projects approved by February 2007 located in any of the least developed countries (LDCs) or in Sub-Saharan Africa. If the location of the CDM remains unequally geographically distributed, the political support for the mechanism will increasingly come into question, as was evident in the discussions, and as was taken up by the UN Secretary General Kofi Annan at the Nairobi COP/MOP in November 2006.

10 The environmental integrity of the CDM depends on the possibility of avoiding giving CERs to projects that would have happened anyway. Therefore all projects have to prove their *financial additionality*; projects should not be financed by official development aid or part of 'business as usual'. This has proven too problematic to prove in reality. For further discussion on the concept, see Greiner (2003).

Map 1: Geographical Distribution of CDM Projects



Source: Own Adoption from UNFCCC and UNEP Risø Centre Information, February 2007

This distribution pattern of course has to do with the fact that the CDM is a market instrument and thus follows the logic inherent to markets. As discussed above, the majority of the carbon market actors are profit driven; their investment decisions for CDM are guided by a quest for the highest return on invested capital at the lowest risk. Mirroring foreign direct investment patterns, they thus go where the best combination of market opportunities and stable, business friendly institutions are. This is why the CDM provides economically cost efficient GHG reductions; the more they take other motivations into account, the fear is, the less cost efficient the mechanism will be. The EU is loath to tamper with the rule book for the CDM in order to address this inequality, as it would increase the political uncertainty of the CDM. Trying to placate poor countries, the EU at the COP/MOP in Nairobi launched the Global Efficiency and Renewable Energy Fund (GEREF) that will invest up to 100 million Euro per year in clean technology in developing countries.

Finally, like all markets, the carbon market detests *uncertainty*. The fact that the future shape, form and very existence of a continued climate regime beyond the first commitment period of the Kyoto Protocol ending in 2012 is uncertain is a fundamental problem, even if some market participants are starting to develop projects for the post-2012 horizon. Linked to the issue of post-2012 uncertainty is the complaint that the time horizon of the CDM is too short in comparison to normal business investment cycles for companies considering retrofitting or new investments in low carbon technologies. The problem of uncertainty has been slightly diminished by the EU's commitment to reduce GHG by 20% (baseline 1990) by 2020 with promises to cut further if other major emitters do the same. This demand boost should be enough to keep the carbon market rolling. The question, however, is how long the EU will maintain a progressive line if other major emitters do not join it in the struggle against climate change?

The balance sheet presented above is mixed. Nevertheless, we plead for the glass being half full, as one can clearly see that the carbon market is in existence and is working efficiently. At the same time, it is an old truth that one cannot have one's cake and eat it too, or in our context, one cannot expect a market mechanism that works efficiently to guarantee equity. It is thus a problem for politics that there are hardly any CDMs in Sub-Sahara Africa, but not a problem for the market, and fortunately politics is involved in the discussion of the role of the World Bank in setting up new carbon funds as shown above. The central question is therefore rather, whether the CDM will leave any local footprints that lead into the direction of sustainable development. It is, however, too early to tell.

7. Conclusion

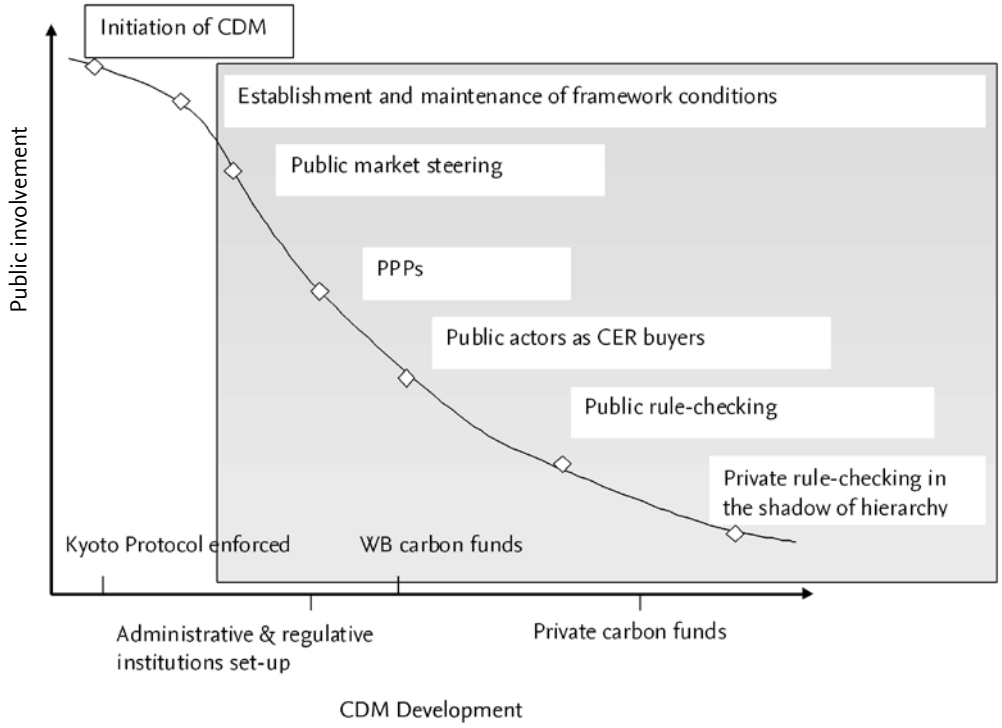
In the context of this article, we have discussed the conditions of emergence, motives of actors and actor constellations, and the evolution of the CDM in the framework of research on environmental governance. Conceptualising the CDM as governance in the light of political science debates and contrasting these attempts with arguments for characterizing the CDM as a market has revealed gaps for future research.

The CDM as a market based solution with its strong focus on cost efficiency and flexibility is attractive to businesses facing reduction compliance. Despite it being ten years after negotiations on the rules for the CDM began, it is still in the early days for the implementation phase of the CDM. Most commentators seem to agree that the CDM has proven itself as a *functioning mechanism for cost effective GHG reductions in developing countries*, though less so when it comes to deliver sustainable development to local communities. We have shown that during the evolution of the CDM towards a maturing market, the role, significance and relevance of public-private partnerships has been replaced by normal business activities. Only for niche markets, such as in African countries, or for niche products such as CDM projects with explicit benefits for sustainable development, are public-private partnerships still needed to support business operations. While business actors and a new range of private secondary market actors have come to dominate the CDM, public actors move towards adopting new roles and functions oriented towards ensuring the CDM's dual goals of cost efficient emission reduction and sustainable development.

The *governance function of governments* did not stop with initiating and jump-starting the CDM. While at first states were fundamental in setting out the constitutive rules of the game and thus creating a carbon market, the carbon market now functions according to its own set of market mechanisms albeit under the shadow of hierarchy. The following figure illustrates the changing role of public actors on the carbon market: while in the beginning their role was fundamental in initiating the CDM, setting up its framework conditions and steering it into the politically intended direction, now their role is decreasing with private actors increasingly acting as buyers and traders of CERs. While nation states as parties to the Kyoto Protocol are still responsible for the overall effectiveness of the CDM in terms of goal achievement, the control of compliance

with the regulative rules of CDM project implementation has been outsourced to private certification companies such as TüV Süd or DNV. Although we can observe Annex I countries also acting as CER buyers to meet their demand like any other business actor, we still need to acknowledge that the ultimate power to set and maintain the market framework conditions rests with the parties to the Kyoto Protocol, as long as the regime stays the centrepiece of governance efforts to provide the public good of climate protection.

Figure 8: Evolving Forms of the Carbon Market



Source: Own Adoption

Future prospects and developments of the policy innovation for climate change mitigation will depend heavily upon the post-2012 climate change regime. With the CDM, companies have a broader range of emission reduction options that lowers the price of reductions even if very few choose to use it. For the future, market actors seem to be in broad agreement that despite the problems highlighted, the continuation of the CDM as a cornerstone in a future climate regime is increasingly taken for granted, perhaps supplemented with "brothers or sisters of the CDM" that expand the scope or scale of the mechanism addressing whole sectors or programmes. When asked for practical details on how such a future flexible mechanism would work, market participants were still fairly vague on what they envision as the better solution. This absence of clear ideas among stakeholders is worrisome given the limited time scope for such ideas to evolve from "straw man" suggestions to fully fledged proposals ready to gain wider acceptance in time for the official post-2012 climate negotiations.

It will be of interest to see to what extent the regulation of CDMs will be s*tate-led by CDM host countries*. In some leading CDM host countries like China, the state maintains a strong regulatory role in the carbon market; in other areas such as in the UK, the government is actively encouraging a strong role for the financial markets, including rule making. The emergence of an unregulated voluntary market for carbon reductions is also a recent development that has substantially grown in the last year although still far from the size of the market for CERs. In the absence of an agreement on the future of the climate regime, many of the project developers are increasingly turning their attention towards this new market segment. As the pay back time for CDM projects up to 2012 is getting shorter and shorter, companies thus seem to think it makes sense to try to diversify.

Our research on the CDM as a new form of governance so far mainly focused on Annex I countries and on their business actors in the carbon market. As a needed complement, research should be conducted on the *roles of public and private actors on the emerging carbon markets in the non-Annex I countries*. As indicated in the previous paragraph, some observations of these parts of the carbon market already lead to the impression that CDM host countries differ widely concerning the role of the state in the carbon market. Thus a next step would be to examine the impacts of the CDM in developing countries. In this context, the success of this policy instrument with regard to delivering on its promises of global climate protection and on contributing to technology transfer and local sustainable development will depend on the extent to which policy diffusion in a broader sense has taken place. This means that attention needs to focus on the constitution and evolution of local carbon markets, the impacts on local environmental policies and institutions, and the effects on the attitudes and behaviour of local populations, as well as key stakeholders related to environmental issues in these countries. One positive effect of the CDM that is already detectable is that over the last few years there has been a substantial building of carbon know-how and management capacity in the principal CDM host countries, both among private market actors and in government. This occurred despite the fact that these countries do not have any commitments at this stage to reduce their emissions, and is probably an important precursor to further steps in the building of a global climate regime.

With regard to *theory-building*, future comparative research on the CDM should examine the effectiveness of this policy innovation in relation to other governing mechanisms that tackle global and local environmental problems. Ultimately, the CDM constitutes one policy option amongst other forms of governance in environmental politics, and its overall success depends not only on design and procedural issues at the international level but also on the interplay between local and international interests for its reception at the local levels.

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Governance has become a central theme in social science research. The Research Center (SFB) 700 *Governance in Areas of Limited Statehood* investigates governance in areas of limited statehood, i.e. developing countries, failing and failed states, as well as, in historical perspective, different types of colonies. How and under what conditions can governance deliver legitimate authority, security, and welfare, and what problems are likely to emerge? Operating since 2006 and financed by the German Research Foundation (DFG), the Research Center involves the Freie Universität Berlin, the University of Potsdam, the European University Institute, the Hertie School of Governance, the German Institute for International and Security Affairs (SWP), and the Social Science Research Center Berlin (WZB).

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