

## **From Public Private Partnership to market: The Clean Development Mechanism (CDM) as a new mode of governance in climate protection**

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### **I. INTRODUCTION**

**Climate change has become a hot topic and this in various ways.** First, the science is now beyond doubt. The recent 4<sup>th</sup> Assessment Report by the International Panel on Climate Change (IPCC) 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: 5). Second, economists agree that tackling climate change will be expensive, ignoring it will be ruinous. Exactly how expensive is still contested (Odling-Smee 2007) but the authoritative Stern review of the economics of climate change, authored by the former World Bank Chief economist Sir Nicholas Stern, concluded that doing nothing about climate change would mean a long-term loss in average world consumption of 5–20% per year, comparable to the economic impact of a world war or worse whereas stabilising greenhouse gas concentrations at roughly double pre-industrial levels would cost 1% of global gross domestic product (GDP) by the middle of this century (Stern 2006). Third, the big question on how to tackle climate change has become an issue of high politics, as it is fiercely debated in national, regional, and on the global political level. The question of how to address “the biggest long-term threat facing our world” (Blair 2007) is arguably the greatest policy issue of our time.

**What is then the state of play of climate change governance?** At the core of the international efforts stands the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol. While inadequate in reaching the ultimate goal, contrary to much public debate, the Kyoto Protocol has already had an important impact. Most actors (state and non-state) now take climate politics serious and are starting to take action. Business, industry associations, lobby groups and NGOs have emerged that aim to influence 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<sub>2</sub> and renewable energy feed in tariffs are starting to diffuse to other countries. Steps taken so far, while being important first ones, are insufficient and it is clear that the majority of industrialised states with Kyoto targets (so called Annex I countries) will reach their modest reductions until 2012 only if there is a dramatic strengthening of efforts as well as broad use of the Kyoto flexible mechanisms. Consequently, the quest for the most effective and efficient emission reductions has begun. While on the one hand, this has led to the use of new, climate-friendly technologies and on the other hand, so-called flexible

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mechanisms have been established in the framework of the Kyoto Protocol on which we will focus in the following. What are they and how do they work?

The Kyoto Protocol integrates **three flexible mechanisms** as policy innovations in order to meet the objective of mitigating climate change.<sup>2</sup> These consist of international emission trading (IET); ‘Joint Implementation’ (JI) a project mechanism for former communist transition countries; and the Clean Development Mechanism (CDM), which stands for projects whose reductions are based in developing countries. The CDM is by far the most prominent of the flexible mechanisms and we will thus only analyze it. In the CDM market 522 Mt CO<sub>2</sub>e reductions in 2006 were generated, with a secondary market adding 40 Mt. Together they are valued at €3.9 billion. Joint Implementation (JI) reached just 21 Mt, €95 million in 2006 – less than in 2005 whereas the IET is still not implemented at all (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 it thus seems to be of interest for policy as well as for academic debates how these CERs come about and what impact they have. Particularly the governance of the CDM has lately become a hot topic (Streck 2007). Due to the CDM’s importance in developing the global carbon market and hence its potential of providing a new mode of globally tackling climate change, we take it as our starting point.

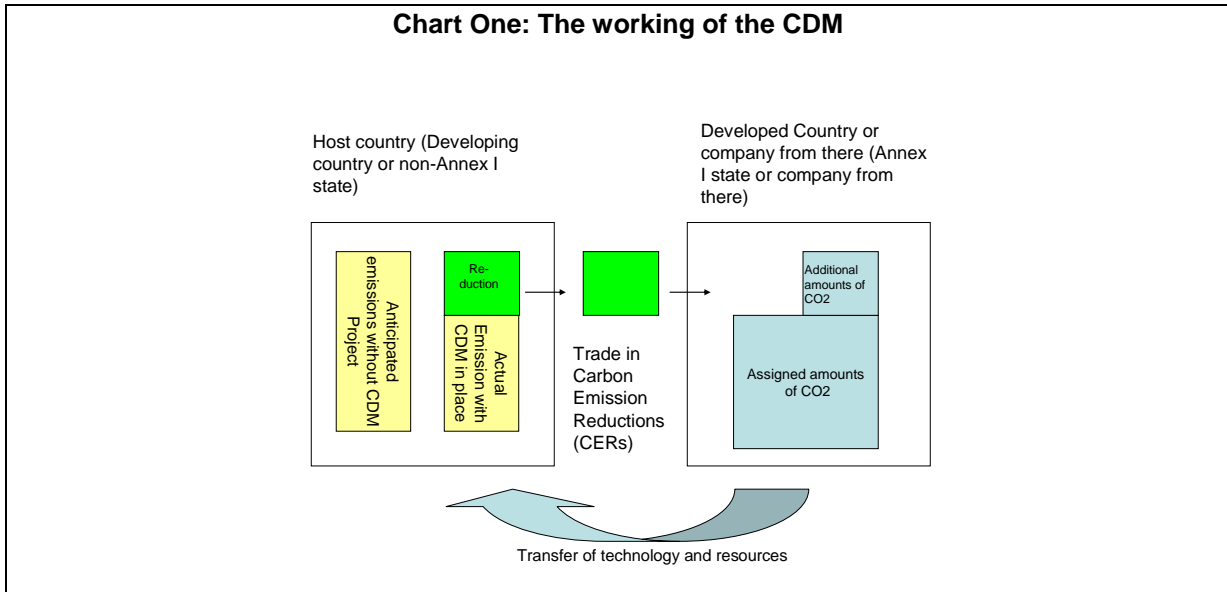
**Thus the question this paper raises is whether the CDM is a new form of governance in climate protection? If yes, how did it develop and why? What were the conditions under which it evolved and what characteristics does it have today? Finally, what consequences regarding efficiency of the instrument and legitimacy of the implementing actors does the CDM as a possible new form of governance have?** Before we tackle these questions, we first provide a very short background of how the CDM works and why it came about (section two). Next we examine the theoretical aspects of this development in environmental policy and argue that the CDM as a mechanism is indeed a new form of governance although this cannot be said of its individual elements, i.e. the CDM projects (section three). In the following we 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 PPPs but that it is now evolving into a maturing market, in which the aggregate of private actors engagement contribute to the public good of greenhouse gas reductions although under the “shadow of hierarchy” of public actors that still have the constitutive rule-making power (section four). Following, we conclude by presenting 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 mode of governance (section V). **In a nutshell our paper thus has two arguments: First, the CDM is a new form of governance. Second, the mode of governance has been changing from a PPP to a volatile but nevertheless functioning market.**

## II. HOW DID THE CDM COME ABOUT AND HOW DOES IT WORK?

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. Chart one shows how this works in detail.

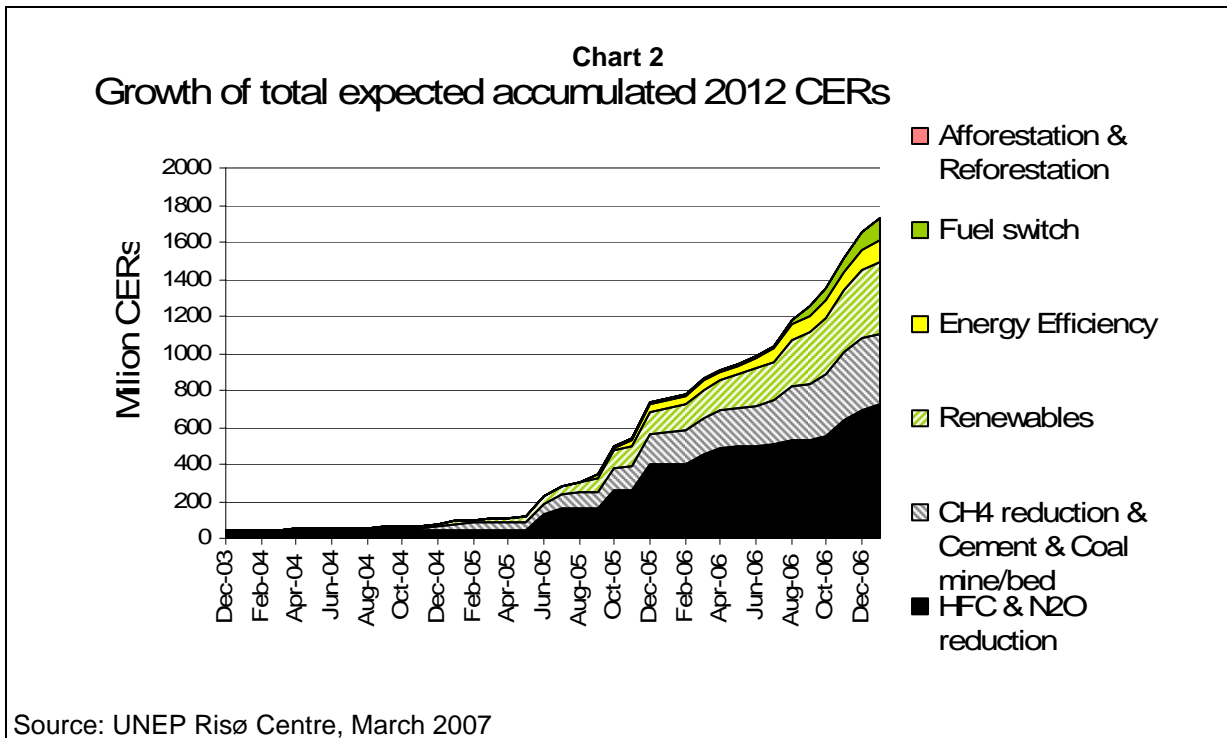
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<sup>2</sup> In the Kyoto Protocol the three flexible mechanisms are found in the following articles: Joint Implementation, article 6; Clean Development Mechanism, article 12; Emission Trading, article 17. The rules and modalities of the mechanisms were mainly negotiated in 2001 in Marrakech but have since continuously been further developed by the CDM Executive board and by the COP/MOP meetings.



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<sub>2</sub> 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 been growing 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 2006, see Chart 2).



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 com-

mised of six members from Non-Annex I and four members from Annex I countries. It approves projects and issues CERs after a successfully completed registration and verification process. Worth noting is that of the 547 projects approved by February 2007 and with some 1200 more at different stages of validation in the pipeline more than half are renewable energy projects.

In short, the CDM is successfully running but going beyond the details, can it be classified as a new form of governance?

### III. A NEW MODE 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 mode 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 and Lehmkuhl 2006).

Regarding, the **involvement of non-state** actors the governance debate very early on acknowledged that the relocation of authority from national entities to non-state actors is necessary to ensure the delivery of functions essential for human survival (Rosenau 1992). This notion has been taken up by recent debates on global environmental governance (Biermann and Dingwerth 2004; Luterbacher and Sprinz 2001; Young 2001) 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 clearly is such a policy innovation where the environmental governance mechanism is dependent on the engagement of private actors to function. The increased involvement of non-state actors such as business 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 and Newell 2005).

Going beyond the role of individual actors such as private business, literature on public private partnerships examine the various actors' constellation and their implications for governance (Reinicke 1998; Risse and Börzel 2005). New coalitions of various actors combining business, NGOs, international organisations and nation states in different constellations result from the general demand for more integrative solutions to for example environmental problems. Individually, these actors either lack resources and/or capacities to tackle the problem themselves, 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 and Vaillancourt 2000).

More problematic is the question whether **new forms of non-hierarchical coordination** are brought about by the CDM (see Benecke 2007). The **CDM encompasses a regulatory framework and an operational framework** and thus constitutes a multilevel mechanism. Regarding the regulatory structure, the CDM is constituted of an institutional set up, operational procedures of the CDM Executive Board (EB) as well as the basic "rules of the game", e.g. project procedures, methodologies set down by the Marrakech accords by states. Hence, this regulatory framework depicts modes of regulation, which can be described by classical steering theory. On the whole the regulatory structure integrates a 'shadow of hierarchy' (Risse & Lehmkuhl, 2006) 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, accountable decision making authority. The regulatory structure of the CDM can thus also be de-

scribed in the framework of a quite narrow understanding of “governance” (Goehler et al 2006). If we, however, look at the operational framework, i.e. the CDM project cycle from developing a project to selling CERs, we notice many different modes of transactions and interactions between the various CDM project actors, verifying bodies and the CDM Executive Board that make up the ‘steering mechanisms’ of the CDM. Dependent on the actors’ constellations, interactions can be differentiated as either rent seeking behaviour trying to maximise the carbon credits from a project or public-interests related concerns to uphold the environmental integrity of the system. Given the context of the governance debate (Risse & Boerzel, 2005), this observation raises some controversy on whether the CDM can indeed be conceptualised as a new mode of “governance” or whether it rather constitutes a new mode of globally applying a market mechanism for tackling climate change.

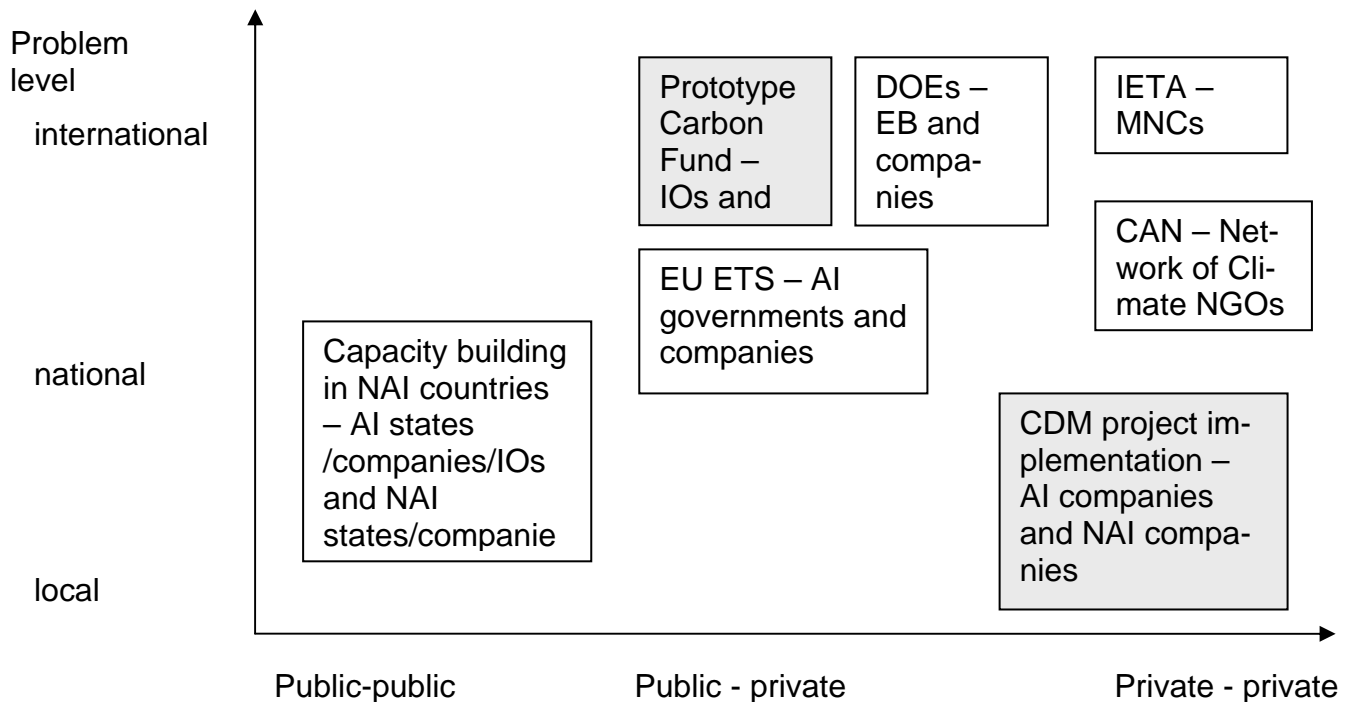
In a nutshell: The CDM is a new form of governance on both accounts, systematic inclusion of new actors and incorporating new forms of coordination. However, the latter aspect has to be qualified in the sense that individual CDM projects cannot necessarily be described as a form of governance as they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

#### **IV. FROM PPP TO MARKET**

Most of the partnerships in the field of CDM serve as capacity building and implementation networks 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 later will seek project approval from. Industrialised Annex I governments possess even a 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, Streck and Benner 2002: 66).

**Partnerships** in the CDM market 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 market, or as private-private partnerships between NGOs or between industries with common interests on the CDM market, or as public-private partnerships on the global level such as carbon funds for private companies initiated by the World Bank or on the local level for the implementation of CDM projects (see chart 3).

Chart 3: Multilayered problem – diverse set of partnerships

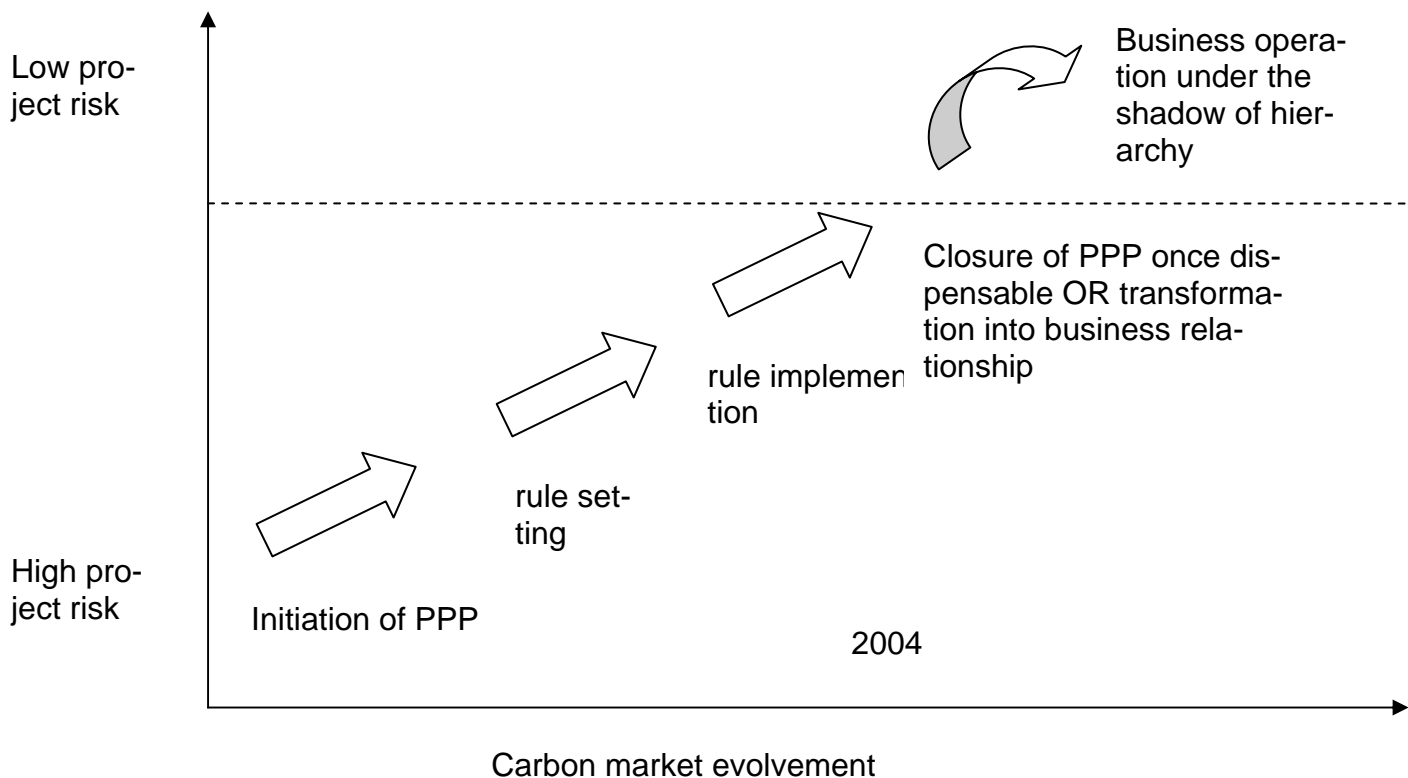


Legend: AI= Annex I; NAI= Non-Annex I; IO= International Organisation; MNCs= Multinational corporations; IETA = International Emissions Trading Association; DOE= Designated Operational Entity

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 as well as 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-learnt for public and private actors, the PPP approach is, however, increasingly becoming 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 chart 4).

Chart 4: Life cycle of cooperation from PPP to business operation



The following paragraph takes the **Prototype Carbon Fund (PCF)** as an example to illustrate the role of a PPP on the CDM market in kick-starting business activities. The PCF began as a learning experiment between the World Bank and several multinational corporations (MNCs) and served as the blueprint for the set up of several other public and private carbon funds.<sup>3</sup> The PCF has been launched in cooperation with four European governments, Canada and Japan, and 17 private companies participating, bringing together 145 million US\$ for the purchase of GHG emission reductions via CDM and JI projects (Streck 2002: 2). The objectives for the PCF was 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 plenty of time to learn from their and their partners’ experiences with CDM projects enabling them to become early movers when the carbon market became operational in 2004. 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 is 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: 13).

The role of the World Bank in the management of the 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 good deal of money out of its commissions on projects (Vallette, Wysham and Martinez 2004: 4). Also one can argue that the World Bank is crowding out private investments profiting from its established network and even more fundamentally through its initial strong position in the market as well as in the regulatory field it could be prone to influence CDM regulation in its own interest (regulatory

<sup>3</sup> 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.

capture). Critiques, furthermore, see irony in the role of the World Bank of being the facilitator of the carbon market while simultaneously not being willing or able to mainstream climate change considerations into their energy projects or country strategies (Baumert, Nakhooda and Sohn 2005: 5; Seymour 2006: 3; Vallette, Wysham and Martinez 2004: 3). 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 has focused on initiating CDM projects in any country of choice, the World Bank has again taken a door opener 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.<sup>4</sup> This example shows that PPPs are needed to kick-start a high risk market but eventually should be replaced by private business operations as the risk of engagement decreased. 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 high risks in which private actors are not willing to invest without public back-up.

**Today, a functioning CDM market exists.** This sentence does neither imply that the market does not depend on regulation nor that it should be regulated. Every market depends on somebody setting and managing its constitutive as well as its regulative rules. It is thus not of interest that rules exist but rather who sets them, how, and why. As we stated above the market for CERs created through CDMs started out as a PPP initiated for the provision of the public good of climate protection and we will show now that it turned into normal business operations with private goods (e.g. carbon fund return rate and CERs) as their output (see again chart 4 for illustration). However, the activities taken as a sum 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 dominated not only by public entities but more and more by private companies**. In a survey conducted by Benecke, Friberg, and Schröder in 2006 one could see that almost all interviewed companies that had to reduce emissions were participating in the CDM market. Second, politics influence demand, but **prices influence supply**. CERs thus have 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. forest plantation CERs. The market is, however, still highly volatile and reacts to political events and not just economic fundamentals. Third, the market is starting to **differentiate 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<sub>2</sub>e, with an additional 40 Mt, in the secondary market. Together these reductions are valued at €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.

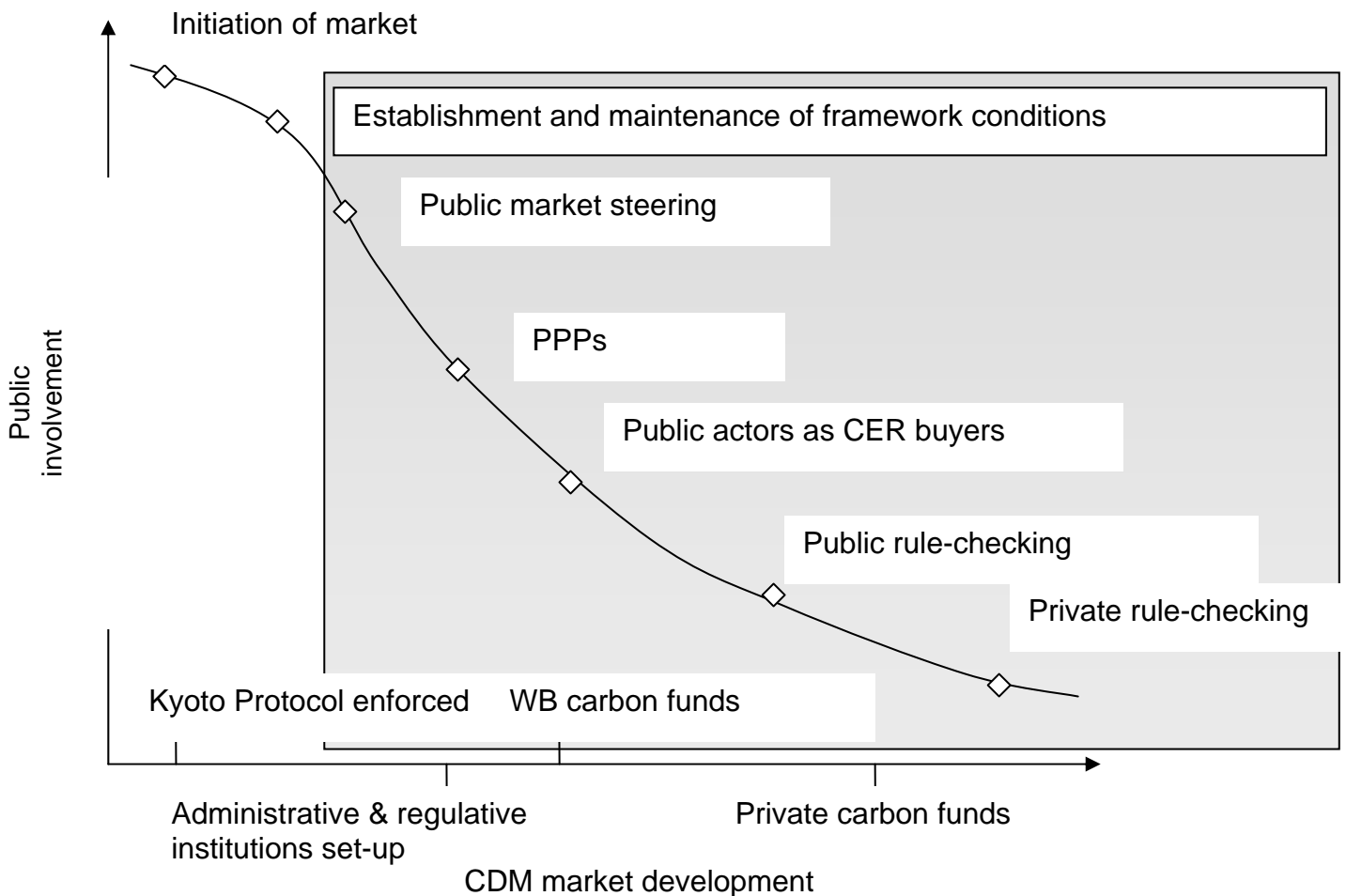
The **governance function of governments** did, however, not stop with initiating and kick-starting the CDM market. While states were at first fundamental in setting out the constitutive rules of the game and thus creating a carbon market, the carbon market now functions according to its own set of market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

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<sup>4</sup> Up to end 2006, the World Bank has taken up seven CDM projects in sub-saharan Africa into its funds. For more details see Capoor et al (2006).

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 to have become CER buyers as any other business actor, we still need to acknowledge that the ultimate power to set and maintain the market framework conditions rests with the members of the Kyoto Protocol as long as the regime stays the centrepiece of governance efforts to provide the public good of climate protection.

Chart 5: Evolving modes of the carbon market



## V. CONCLUSION: A SUCCESSFUL POLICY?

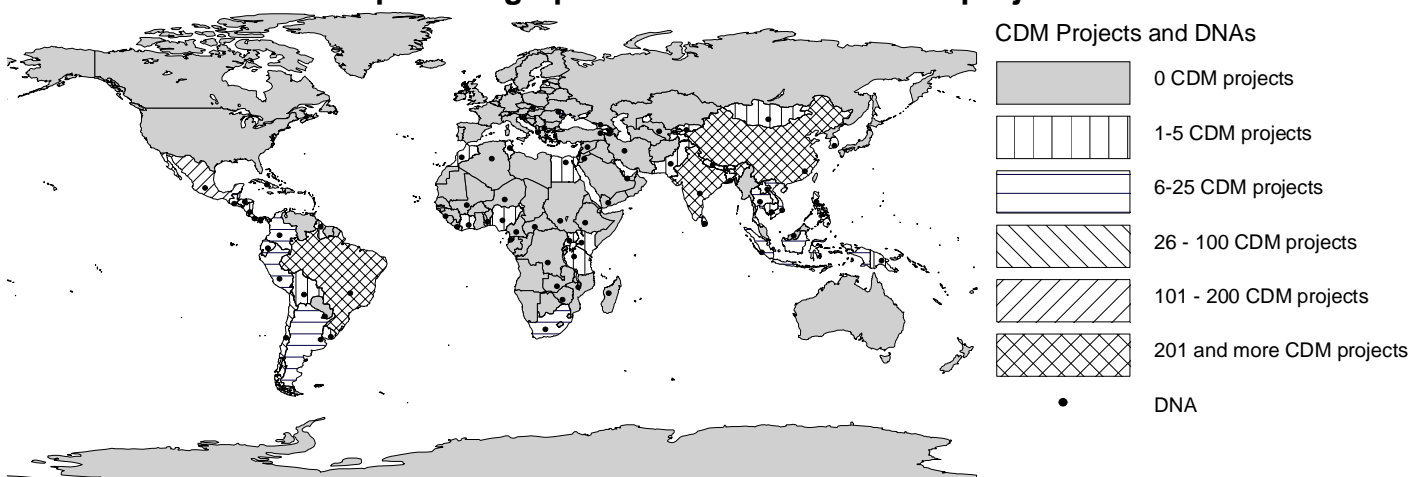
So far we have provided a theoretical analysis of the CDM as a new mode of governance and we have shown that the CDM changed from being primarily a PPP to being an immature but nevertheless functioning market. It now seems time to evaluate the CDM and to delve into policy. What are the strengths and 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 its primary goal, that is it provides a **cost efficient** way to reduce emissions. 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. Second, from a market actor standpoint the biggest advantage of the CDM market is its high **flexibility**. As mentioned above many of the interviewed companies 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. Third, the CDM has a potential role in **facilitating technology transfer and increasing foreign direct invest-**

**ments 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 human capital skills and management systems as transfer of technology hardware. Fourth, and from our perspective the most important aspect, is that the CDM market is a novel and **explorative mode of governance for international climate protection.** 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 gain first experiences and to enhance local human capacity and institutions for managing and controlling GHG mitigation; 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 some 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 put 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 a 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. 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. Second, in the survey of Benecke, Friberg, and Schröder (2006) market actors strongly complained about the **complicated and bureaucratic process of establishing CDMs.** The lengthy process of registration, verification and approval is seen as too slow, arbitrary and developed without an understanding of how business work. A similar complaint is that the methodology of financial additionality is seen as difficult and subjective in its application. 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 and 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.

**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 market logic. As discussed above, the majority of the CDM market actors are profit driven; their investments 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 business friendly, stable, 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/year in clean technology in developing countries.

Finally, like all markets, the CDM 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 a fundamental problem even if some market participants are starting to develop projects for the post 2012 horizon. Linked to 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 slightly been 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 CDM market rolling. The question, however, is how long the EU will maintain a progressive line if not others join it in the struggle against climate change?

**The above balance sheet is mixed.** At the same time it is an old truth that one cannot have the cake and eat it at the same time 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 for the market and fortunately politics is acting as the discussion of the role of the World Bank in setting up new carbon funds above showed. The big question therefore rather is whether the CDM will leave any local footprints that lead into the direction of sustainable development. This is, however, too early to tell.

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Paper presented at the Seminar series "Financial Markets and Environmental Governance",  
Thursday May 29, 2008 at the Oxford University Centre for the Environment

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