

The Journal of Environment & Development

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The Journal of Environment Development 2009; 18; 346

DOI: 10.1177/1070496509347085

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The Journal of Environment & Development
18(4) 346–370

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Abstract

Judged by the sheer number of clean development mechanism (CDM) projects registered and in the pipeline, India undoubtedly can be seen as a success story as far as the functioning of the local carbon market is concerned. However, questions are repeatedly raised about the efficient working of the CDM, its distributional quality, its effectiveness in meeting broader societal goals, its impacts on sustainable development, to name but a few. This calls for a careful scrutiny and understanding of how exactly carbon governance works in the specific case of India. As demonstrated in the article, India presents a case of market-dominated carbon governance taking place under a weak shadow of hierarchy and with little civil society involvement. This article derives at the overall conclusion that the specific trajectories characterizing the local Indian carbon market point toward globally diverging carbon governance.

Keywords

carbon governance, India, CDM, climate change

Five years have passed since the inception of the clean development mechanism (CDM) and debates about the future of this international climate policy instrument in the post-2012 scenario have commenced. Hence, it is high time to take stock of the CDM and to consider the context of local carbon markets such as India to embark on practical reforms. This matters to further conceptual understandings of governance in non-Organisation for Economic Co-operation and Development (non-OECD) countries and to add to debates on convergence or divergence of carbon governance.

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As local contexts are characterized by specific features, the CDM reveals distinct facets in different local contexts. The main focus of this article tackles the realities of the local carbon market and the carbon governance in the context of India: What type of carbon governance is emerging, and how is carbon governance in India characterized?

The central argument of this article suggests that Indian carbon governance emphasizes market facilitation and is guided by the objectives to promote and enhance India's welfare and prosperity. This article gives justice to the proposition that carbon governance diverges globally (Fuhr & Lederer, 2009).

In the light of governance debates, the added value of analyzing locally specific carbon governance is to identify emerging functional equivalents to state-focused provision of climate protection in India. This article is organized as follows: First of all, these new modes of governance are analyzed in terms of new actors' constellations and interactions, and their implications on the effectiveness and legitimacy of Indian carbon governance are assessed. After arguing the need for policy innovations such as the CDM in India, the local carbon market will be described. Following from that, a detailed, actor-centered analysis of carbon governance arrangements in terms of stakeholder characteristics, interests, and values is conducted. This opens the floor for discussing the central modes of interaction, which takes selected issue areas as examples. On these grounds, conclusions are drawn concerning the efficiency and legitimacy of Indian carbon governance. The final section discusses the extent to which the CDM is embedded in the local context and suggests future projections as well as reform needs. All in all, this analytical case study of the Indian carbon market demonstrates that carbon governance, unlike expected, is diverging globally.

Challenges to Environmental Governance in India

This section argues that today's challenges to environmental governance in India create the demand for new modes of governance like the CDM.

Climate change problems in developing and emerging economies such as India have to date not been adequately addressed (Gupta, 1997) for the following two reasons. First, climate change has so far not been a major item on policy agendas. In addition, not only policy makers but also business actors, civil society and local people are insufficiently aware of climate-change causes and effects. Second, environmental issues in general gain little attention due to the failure of policy implementation. This means that not necessarily the absence of regulations or policies but the inability to put these into practice characterizes the weak political standing of environmental politics.

Also the history of environmental politics in India reflected in the unsatisfactory state of policy implementation contributed to the need for new modes of governing the environment—which might be provided by the CDM. Environmental protection in India emerged as a policy issue in the 1960s and was clearly secondhand to development and growth imperatives. Despite a substantial number of national environmental legislation, the implementation, which is under the responsibilities of federal states, reveals rather dismal records. Implementation gaps, institutional inefficiencies, and state-level differences are publicly documented in the state-of-the-environment reports

and state-specific studies on environmental sustainability (Ministry of Environment and Forests [MoEF], 2001).

However, for the past years, the Indian Government has put efforts into enhancing the status of environmental and climate issues on the policy agenda. As regards climate politics, India has to date initiated a number of policies and measures that concern the mitigation of and adaptation to climate change (Srinivasan, 2006). In summary, despite increasing efforts to enhance the status of environmental and climate issues, this policy field is still characterized by governance failure in as far as policy implementation is concerned.

On the international level, India signed the United Nations Framework Convention on Climate Change (UNFCCC) on June 10, 1992, ratifying it on November 1, 2003. Acceding to the Kyoto Protocol on August 26, 2002, India hosted the COP8 in October 2002 in Delhi. The "Delhi Declaration on Climate Change and Sustainable Development" provided a well-received impetus to global discussions on adaptation. India submitted its 1st Communication to the UNFCCC in 2004 and joined the Asia-Pacific Partnership on Clean Development and Climate in 2005. Indian scientists play a key role in international programs and organizations. Project activities under the framework of the Global Environmental Facility (GEF) as well as Activities Implemented Jointly (AIJ) contributed to extensive experience of implementing climate-friendly measures. The Indian Government has recognized the imminence to mainstream climate change among stakeholders and sectors and hence recently established two high-level multistakeholder committees. The National Committee to Assess the Impacts of Climate Change headed by the scientific advisor to the prime minister constitutes a scientific and advisory body. In contrast, the Prime Minister's Council on Climate Change (June 2007) is supposed to deliver strategic guidance and to mainstream climate change in the course of key intervention priorities.

Summarizing motivations, one can say that India's position on climate protection at national as well as international levels is dominated by underlying business interests. India's ambivalent stance is reflected in the multilevel governance context in its ambiguous interrelations with international regulators and negotiators as well as in the domestic power game between Ministries of Environment & Forests and External Affairs.

Established in the international context of climate change negotiations under the Kyoto Protocol, the CDM constitutes a new mode of governance to achieve climate-policy objectives. However, as the Indian Government regards the CDM as income-generating device, its policy-stimulating potential is debatable. To take stock of the CDM in India, the following questions organize the analysis of Indian carbon governance:

- 1 Does the CDM constitute a new mode governing environment and climate politics in India?

This article demonstrates that the CDM does provide a new mode of governance: A range of actors across sectors and state levels are involved both as market participants as well as governing this climate-change instrument through various modes of interaction.

- 2 How is the governance of the Indian carbon market characterized?
Empirical examples give rise to the identification of two features characterizing the Indian carbon market. First, nonstate actors involved also behave like profit-oriented business actors. Second, the mix of steering mechanisms facilitates the carbon market, and the overall orientation of carbon governance is directed toward Indian welfare and prosperity objectives.
- 3 What conclusions can be drawn regarding normative assessments of the Indian carbon market governance?
On the whole, the CDM contributes to raising awareness about climate change and environmental impacts of business activities and to pushing climate change onto higher political agendas. Yet the efficiency and legitimacy of the Indian carbon market are ambiguously discussed and provide scope for suggested reform initiatives.

Characteristics of the Indian Carbon Market

This section provides a short overview of the Indian carbon market and indicates certain characteristics and India-specific governance features.

Generally speaking, India accounts for 3% of global greenhouse gas emissions (Asian Development Bank [ADB]/Global Environmental Facility/United Nations Development Programme [UNDP], 1998) and was involved in the development of the CDM early on hosting three projects in the AIJ pilot phase. Up to date, India has developed the highest number of methodologies for CDM projects.

India currently hosts a total of 1,158 CDM projects, which take up 26.5% of the CDM project market share worldwide (Fenhann, 2007; Figure 1). However, the prospective revenue of certified emission reductions (CERs) in terms of kCERs generated by the CDM projects are expected to amount to 447,158 kCERs in 2012, averaging 15.5% of the kCERs in 2012 globally (Figure 2).

In the Asian context, India currently hosts about 35% of the CDM projects, which will generate only 19% of the expected accumulated CERs in 2012.

Out of a total number of 1,158 Indian CDM projects, 379 CDM projects are registered with the CDM Executive Board (EB), whereas the majority of the 735 projects are at validation stage, 44 projects requesting registration. The Indian CDM projects currently generate 94,019 kCERs of the total 596,743 kCERs worldwide and are expected to contribute to 447,158 kCERs in 2012 out of a total expected 2,876,911 kCERs worldwide. Remarkably, these statistics describe that the current CDM CER revenue outweighs the amount of CERs expected to be generated by the CDM projects that are still at validation stage.

In the following, the four most characteristic features of the Indian CDM scenario are briefly sketched. First, exactly 40% of the CDM projects rejected worldwide originate from India (32 CDM projects out of 87 in absolute numbers). This has given rise to concerns and discourses about the quality of Indian CDM projects and CERs as well as about the effectiveness of the Indian Designated National Authority (DNA).

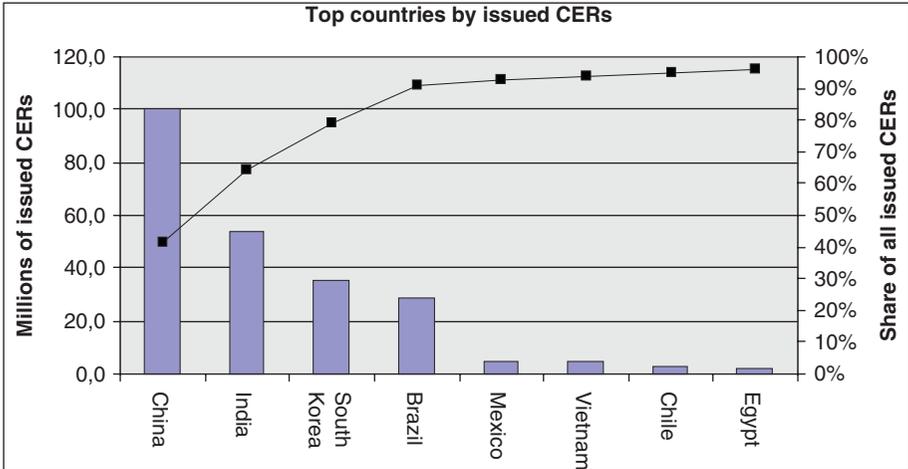


Figure 1. CDM CERs

Note: CDM = clean development mechanism; CERs = certified emission reductions.
 Source: Fenhann, 2007

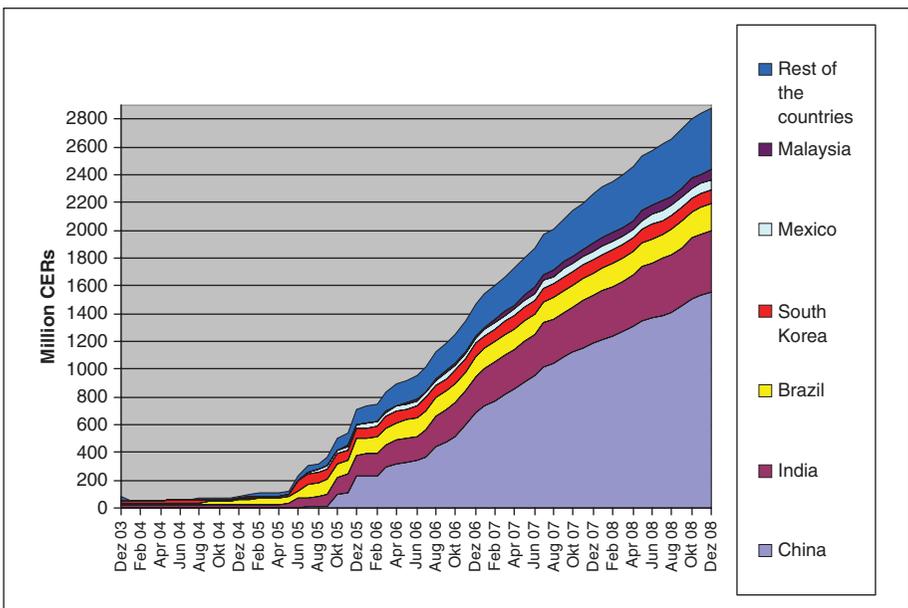


Figure 2. CDM 2012 CERs

Note: CDM = clean development mechanism; CERs = certified emission reductions.

A second aspect worthwhile mentioning relates to the fact that about 176 registered CDM projects, which account for 46%, have a credit buyer. The fact that only one half of CDM projects are hence characterized as bilateral CDM projects, that is, have a

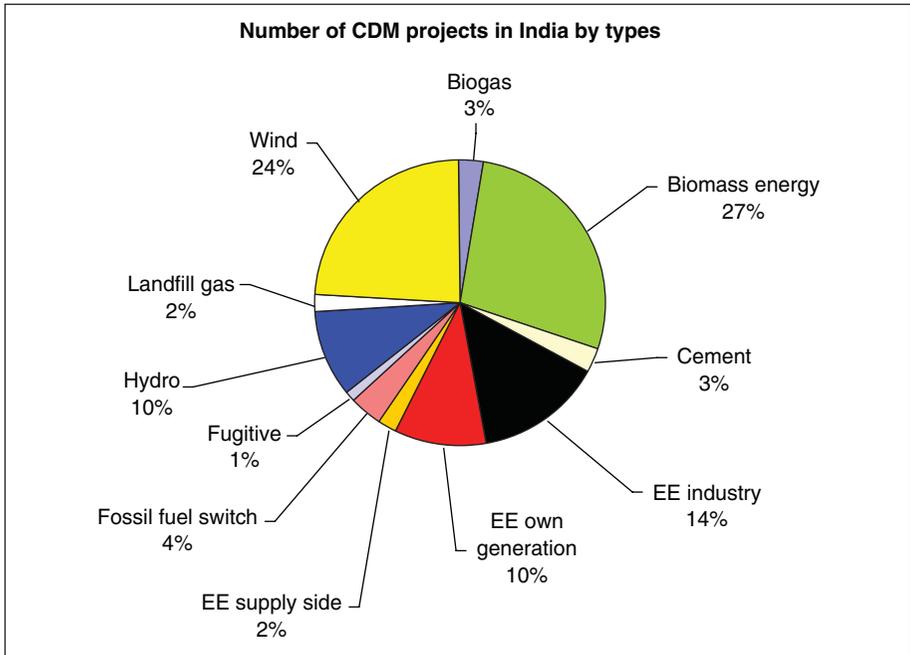


Figure 3. CDM projects in India

Note: CDM = clean development mechanism; EE = energy efficiency.

Source: Adapted from Fenhann, 2007

signed letter of approval with industrialized countries, is subject to critical debates. These controversies relate to issues of foregone technology transfer and insufficient foreign investment, which is criticized even in bilateral project activities.

Third, out of the total 1,243 CDM projects (discounting those rejected and withdrawn), most of the CDM activities take place in the biomass energy sector that shares 26.4% of the total 328 CDM projects (Figure 3). This is followed by project activities in the wind sector (23.2%), by activities related to energy-efficiency measures in industries (13.4%), and by projects in the hydro sector (9.4%). CDM projects that are controversially discussed are, for example, HFC (Hydro Fluor Carbon) projects that only take up a share of 0.6%.

In conclusion, out of the total 1,243 CDM projects, the majority of 773 projects or 62% take place in the renewable energy sector. This picture displays a bias toward renewable energy and is reflected at the global level. Internationally, India holds a share of 28.1% of the total 2,747 CDM projects in the renewable energy sector. One puzzling observation refers to the lack of forestry projects that despite the huge potential have hardly been taken up. Summarizing the forestry debate, this is mainly due to regulatory complexities and obstacles especially at the international but also at the local levels. In addition, uncertainties with regard to forest ownership and the lack of

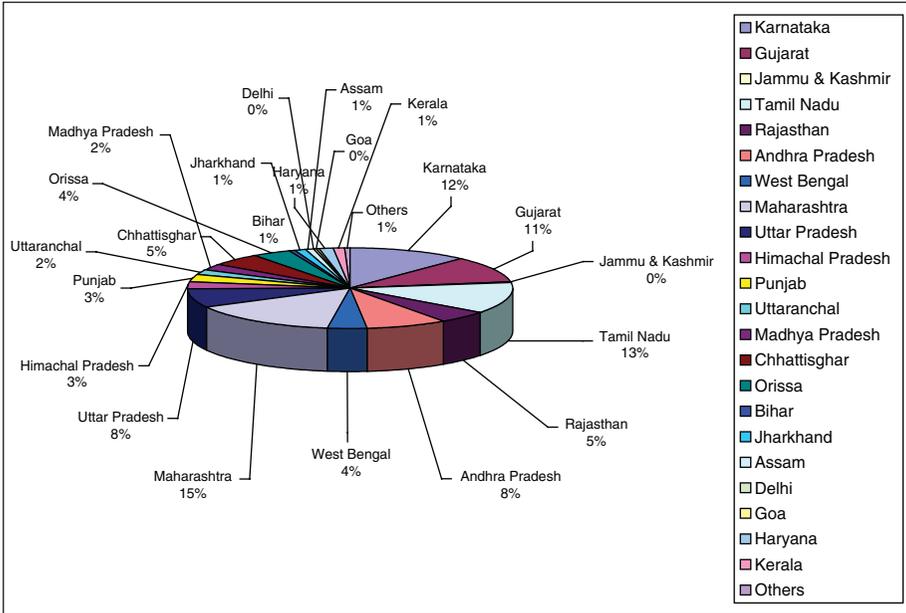


Figure 4. Distribution of renewable energy CDM projects in India

Note: CDM = clean development mechanism.

Source: Adapted from Fenhann, 2007

data as well as awareness are mentioned as reasons for the lack of forestry projects in India (Basu, 2009).

Lastly, India reflects the internationally unequal spatial distribution of CDM projects at the domestic level. Even though to date nearly all Indian states host CDM projects, project numbers and CER amounts vary starkly. Taking the renewable energy sector as an example, which holds nearly two thirds of registered CDM projects, the skewed regional distribution emerges as depicted in Figure 4.

Analyzing Figure 4, a first observation is that some states are not host to any CDM projects in the renewable energy sector at all. All in all, 29 out of the 35 Indian federal states benefit from CDM project investment. Second, within the group of states hosting CDM projects, about half of the states take up a significant share of more than 10 CDM projects. States with the highest number of renewable energy CDM projects are Maharashtra (184 projects), Tamil Nadu (158 projects), and Karnataka (147 projects). To explain these spatial variations, CDM project distribution is correlated with the income level and aspects like resources, industrial growth and governance type. This suggests that generally speaking the richer the state, the more CDM projects it attracts. Already, this observation throws doubt on the contribution of the CDM to national sustainable development and the distributional equality of national welfare aspects.

Summarizing the characteristic features of the Indian local carbon market, the most astounding fact is that from its inception until today a great share of CDM projects has been implemented on a unilateral basis. However, a slightly increasing market interest is noticed, which stems from foreign investors. Explanations for the lack of bilateral CDM activities are wide-ranged and mostly refer to the entrepreneurial spirit of Indian private investors. They feel that higher CER prices can be demanded at a later stage and hence reject price-conservative buyer initiatives. In addition, early successful capacity-building efforts of international donor agencies as well as consultancies and the DNA had positive effects on the proactiveness of Indian project developers.

Another critical debate spins around the matter of Indian CDM project quality. On one hand, opinions about the Indian CDM market are quite favorable with regard to the fact that the majority of projects are initiated in the renewable energy sector. The perception of a good business climate and legal enforceability also contributes to the pace in which the Indian CDM market grows. On the other hand, Indian CDM projects have come under criticism. First, this critique relates to the difficulty to prove the additionality of the projects. Second, CDM projects are blamed on the grounds that records do not always meet international standards (Alex & Wiekert, 2006).

In sum, the Indian carbon market can be characterized as a mature market. Project activities are expanding into niche areas, such as rural electrification or the public sector, and hence attract and integrate new actors, such as public utilities and national financial institutions. The Indian carbon market is considered a new segment of the service industry. In this sense, the so-called sweatshop character that amounts to the exponentially increasing project applications or “Project Design Document (PDD) assembly line production” has become a prominent feature.

Constituents of the Indian Carbon Market: Actors—Interests—Values

After the brief characterization of the Indian CDM market, this section will examine local carbon governance. The purpose is to identify and characterize the stakeholders who participate in governing the CDM.

As will be shown, the main constituents of the Indian carbon market are private actors among which project developers and consultancies are the most prominent stakeholders. Even though civil society actors participate in the Indian carbon market, their engagement is surprisingly limited and often resembles business activities. Finally, the state represented by the Indian DNA governs the local carbon market following the objective to accommodate business interests with the concern for national prosperity and welfare.

Public Actors—The National CDM Authority (NCDMA)

The central argument holds that the state adopts a distinctive role as carbon market facilitator. The Indian Government—via the NCDMA—seeks to enable and to

promote private sector activities in the broadest manner possible. The state's main interest is to ensure the smooth functioning as well as the expansion of the carbon market in India. The dissemination of carbon market activities is oriented toward enhancing national prosperity. The central values underlying the Indian state's interests and activities are to guarantee national welfare objectives and at the same time to retain the international reputation as investor friendly, integer and open country.

The NCDMA was set up in f 2003 by the MoEF as the nodal host ministry to CDM engagement. Based on interim CDM project approval criteria of 2002, India had previously endorsed CDM projects through an ad hoc committee. Established under Section 3 of the 1986 Environmental Protection Act, the NCDMA constitutes an inter-ministerial committee. The decision to institutionalize the NCDMA under the auspices of this ministry was taken by the Government of India. The MoEF is considered the appropriate institutional affiliation due to existing capabilities as well as appropriate authority over environmental and pollution-related issues. Initially, the main roles of the NCDMA referred to the approval and the documentation of CDM projects.

The structure of the Indian DNA corresponds to a two-unit model (Michaelowa & Hayashi, 2007). The Indian DNA, as ad hoc interministerial committee, is constituted of representatives from six different ministries (Environment, Foreign Affairs, Finance, Industry, Power, and New and Renewable Energy Sources) and one member of the Planning Commission. As the composition of the committee changes on a regular basis, the familiarity and knowledge of respective members about the CDM and associated issues also varies.

Key regulatory functions such as to designate the head of the NCDMA are adopted by the MoEF. Currently responsible for the coordination of the NCDMA is Mr. R. K. Sethi as member secretary. Concretely, the NCDMA's regulatory functions are CDM project evaluation and approval, recommendation of additional measures, financial reviews, and ensuring that sustainable development is prioritized. The greatest concern of the authority pertains to the sustainability aspect. Lately, the focus has shifted toward stricter examination of the projects even though the examination of additionality and baselines is explicitly considered the task of Designated Operational Entities (DOEs). The members of the NCDMA decide in monthly meetings on project approval and are responsible for project evaluation. The CDM approval procedure is scheduled to last 60 days and so far no fees are charged for this service. The Indian Government's CDM approval criteria as ensured by the NCDMA relate to sustainable development, licenses and stakeholder consultation, financial and technological feasibility, and risk analysis.

Legal provisions for CDM investment are the same as the requirements for foreign direct investment (FDI) in the respective sectors. Initially, the National Strategy Study on the CDM in India (The Energy Resources Institute [TERI], 2005) identified no scope for the CDM to fall under any Indian taxation regime. Today, income tax is charged, which treats CERs as revenue.

Regarding the CDM revenue, in the early stages no specific and uniform regulation and no national taxation on CER income existed. This implied that the state (i.e., the DNA) officially does not claim ownership of CERs. Some federal states such as

Karnataka (TERI, 2005) had previously introduced additional taxes (Alex & Wiekert, 2006) of up to 70% of CER income, but the proposals were withdrawn. Just recently, however, the Central Electricity Regulatory Commissions (CERC) made the decision to introduce obligatory CER sharing nationwide.

Promotional activities are also carried out by the DNA to disseminate information to project developers. For example, a database with links and contacts was established, and relevant technical and statistical data is maintained (NCDMA, 2006). Promotional functions with regard to encouraging CDM activities and engagement are also adopted by other government departments and units. In addition to these roles and responsibilities, the NCDMA also consults and interacts with public and private stakeholders and takes up environment and sustainable development-related issues from the central government. Lastly, it makes recommendations on guidelines and principles for CDM host-country approval, which is ultimately decided by the central government.

In summary, the argument that the Indian DNA's self-perception and also its main interests are to facilitate the Indian carbon market is justified on two main grounds. First, sustainability criteria are characterized as broad and all encompassing. Hence, host-country approval processes that focus on this aspect are very efficient and grant permissions at a remarkable speed and lack of bureaucratic procrastination—aspects often criticized with regard to the Indian administration and bureaucracy. Second, the (previous) absence of any taxation regime and the similarity of legislation to those of FDI are interpreted as efforts to ensure smooth carbon market activities.

Private Sector Participants

This article argues that Indian private sector participants seek to harness all potential business opportunities in the new carbon market. Thereby, they make contributions to the diversification and flourishing of CDM activities. Indian private actors are to a limited extent also involved in shaping carbon market governance. In the framework of carbon market rules and regulations, private actors interpret, for example, sustainability criteria and additionality tests in their favor and adapt them to respective circumstances. Private actors' main interests are to maximize profit, to increase their market share, and to gain a competitive advantage. In addition, an international profile or presence is aspired through establishing a green image. Apart from commercial motivations, the urge to contribute to India's national prosperity, to promote India's welfare and economic development, and to improve India's international position is a more incidental value.

These interests and values explain the carbon market activities of individual private sector constituents: Today, project consultancies of Indian origin are mushrooming. Even though consolidation tendencies are observed at the national level, local-level initiatives emerge at a rapid pace particularly in niche markets. Meanwhile, DOEs adapt activities to the needs of their main customers, that is, project developers and consultancies, and often engage in close symbiotic cooperation with them. This is not unproblematic as it might undermine the DOEs' integrity and objectivity. Finally, carbon market activities of Indian financial institutions are increasing even at the local level.

Project developers/consultancies. During the early stage, multinational consultancies (e.g., Ernest & Young [E&Y], Price Waterhouse Coopers [PWC]) dominated the CDM market and adopted the tasks of project identification and development. This has changed today as local project developers took up and by now are well aware and knowledgeable about their rights and obligations.

Apart from some foreign investors, project developers are predominantly local entrepreneurs and in some sectors, for example, renewable energy, they have been engaged in this field for quite some time. In some cases, project developers established own, in-house carbon advisory services or outsourced CDM consultancy activities (e.g., SUZLON into Senergy Global). For these project developers, CDM activities are either an add-on to existing commercial activities or a new market niche. Generally speaking, even large project developers draw on consultancies for technical issues related to the CDM process as the internalization of these activities requires time and additional resources. Yet, large companies across industries have dedicated staff working on climate and environmental issues and also consider CDM potential.

Particularly for smaller, local project developers not only in the renewable sector but also in small-scale industries, CDM engagement is impeded by the lack of awareness. Yet, in some sectors, for example, biomass, CDM-related activities are an important part of the competitive positioning and at times even contribute to business survival. Currently, a prominent example is that of cogeneration activities in the sugar industry, which is running high losses due to market conditions.

Another facet common to almost all private sector-based project developers is the preference to sell CERs on the spot market rather than to engage in forward contracts. Despite greater risks and insecurity, this behavior reflects the Indian culture of entrepreneurship. In the context of day-to-day business activities, the CDM status is predominantly perceived as icing on the cake. This means that in most cases project developers have already considered climate-related activities prior to knowing and contemplating the CDM option. Bluntly speaking, investment into environmental technologies and environmental activities would have proceeded even without potential CDM revenue. Strategic business decisions were many times taken on the grounds of efficiency/cost savings or regulatory matters. Nevertheless, the CDM facilitates these decisions even though it minimally contributes to the company's actual revenue stream. Hardly any investment decision is based solely on CDM incentives due to supportive government policies in many CDM-applicable sectors and CDM risks such as of registration and issuance. One might even go as far as to argue that a change of attitudes has taken place from the spirit of environmental benefits, sustainable development, and fair burden sharing toward that of a moneymaking enterprise. However, CDM starts to emerge as a means to upgrade a company's image on the international stock market. As sustainability and corporate social responsibility (CSR) issues gain more clout, the CDM becomes an important element in companies' carbon management strategies. Finally, even though the CDM has not initially triggered green investment decisions, it might do so in the future: A number of companies with registered CDM activities contemplate further climate-friendly initiatives in own installations or separate units on the grounds of the potential CER revenue.

The Indian consultancy market comprises multinational brokers, such as Ecosecurities, PWC, CantorCO2e, E&Y, Asia Carbon, expert consultancies (Indian-registered companies), and a range of individual players. Although larger consultancies have several offices in CDM-relevant federal states, individual smaller consultants mushroom at the local level in nearly all states. With 20% domestic and 80% foreign-based business, the Indian consultancy market took off in 2004.

Many international consultancies entered the Indian market as consultants and project developers on behalf of international initiatives such as carbon funds and tenders. To date, they work independently from headquarter activities while they maintain exchanges with offices worldwide. The constant increase in the size of the consultancy market has led to the provision of consultancy services that, by hearsay, do not quite accord to international standards. Large international consultancies such as E&Y or PWC now directly compete with smaller consultants. Yet, larger companies that avail of greater financial resources commenced to attach remuneration on success, that is, host-country approval or project registration. On one hand, this affects fee scales¹ and increases competitiveness and competition. On the other hand, tough competition contributes to degrading the quality of expertise as, particularly, large consultancies experience high staff turnover.

DOEs. All of the DOEs presently operational in India are of multinational origin. Although some activities date back to the 1990s, other DOEs have entered India in 2000 in response to the increasing importance of the CDM. The three largest DOEs in India are DNV, SGS, and TÜV SÜD (Alex & Wiekert, 2006). Prices for project validation supposedly average international standards. Each DOE uniquely positions itself in the competitive market according to its brand, reputation on technical expertise, image, and last but not least project fees charged. Due to the tough competition, no formalized DOE network is established although informal exchange takes place during conferences. DOE offices in India are located in the capitals of the federal states that are strategic, that is, booming, CDM states. Internal exchange of experience and staff happens on a regular basis. Regular information and experience exchange also takes place with regard to other project offices abroad and the international headquarters. In many cases, crucial project decisions, quality control, decisions on fees charged, and even operational guidelines are passed from the international headquarters to the local offices.²

The general reputation of Indian DOEs has taken quite a backlash due to the growing perception of overworked, badly qualified staff and sloppy work that reflects the lack of expertise and casual attitudes. DOEs are blamed for an increasing amount of PDDs stuck in the pipeline and/or rejected. In contrast, particularly project consultancies that see their success fee endangered criticize some DOEs as too tough.

The decision to interact with certain DOEs is taken by project proponents on the basis of fees charged, technical expertise, former collaboration, competitors' experience, and consultancies' recommendations. Depending on the DOE, interactions with project proponents either occur on individual face-to-face basis or as a team responsible for a certain project. Local stakeholder interactions rely on the facilitation

provided by project proponents. In addition, the kinds of interactions with local stakeholders depend on the respective DOE's procedures for validating public consultation processes.

As a rather recent phenomenon, a noticeable number of senior and experienced staff move from employment with the DOE to join big consultancies or financial institutions. This partly explains complaints on the shortage and the inexperience of DOE staff. Briefly, Indian DOEs have become the black sheep of the Indian carbon market, blamed for the bad project quality and rejection rates as well as barriers to the smooth functioning of the market.

Finance institutions and other private actors. An increasing number of foreign bank affiliations as well as national banks have recently commenced financing CDM-related products and providing other investment-related financial services. Foreign banks such as Rabobank started carbon finance activities earlier in the 2000 and by now even have their own carbon funds.

Early activities partly took place in the framework of World Bank activities, whereas nowadays foreign banks account on their own books and develop specific business strategies, that is, focusing only on the forward market or certain sectors. Foreign financial institutions provide upfront financing of up to 50% to 100% of project costs, whereas national banks are still hesitant on this matter. The role of international carbon funds and finance is important even though national banks commenced carbon financing in 2006. In contrast to foreign banks, national private financial institutions are still hesitant to prefinance CDM projects due to the lack of internal expertise and capacities required. On account of the uncertainty and the unfamiliarity with these activities and due to a lack of national regulations and transparency, management boards of national banks are reluctant to embark on CDM financing. Even to date, potential CER income or revenue is still not acknowledged in assessments of credit worthiness or risk calculations. Especially for small project developers or projects with high initial-transaction costs, access to finance is rendered difficult. However, in the Indian financial sector, CDM awareness has increased during 2007. Some larger entities such as Industrial Development Bank of India even set up a carbon advisory arm and seek to expand their range of activities to include insurance products.

With the exception of small players, project developers in many cases are not first-time customers but have an established balance sheet with financial institutions. Hence, smaller entrepreneurs often make use of carbon advisory services offered specifically by international financial institutions. International funds also interact with project consultants to find out how project opportunities can be harnessed more effectively.

International and also national banks as well as carbon funds hold close ties with private and public buyers and assist project developers and consultants in CER transaction processes. In many cases, relations between buyers and sellers are invisible and indirect as carbon selling is dealt with at international desks in the global financial hubs. Some national state banks are integrated into CDM financial activities through the establishment of Memorandum of Understandings with international financial institutions.

Based on these observations, one can conclude that India starts to see increasing interest and activities by foreign hedge funds as well as the emergence of local brokers and climate exchanges.

Civil Society

This article argues that in the Indian context civil society actors adopt business behavior as a strategy to participate in the Indian CDM market and governance. This is due to the facts that civil society actors, on one hand, do not avail of many CDM-specific human and technical resources. On the other hand, civil society actors do not obtain voice or space to articulate their points of view and criticism. This is due to the predominant CDM-friendly and protective governance environment and discourse that render civil disobedience difficult. Yet, civil society actors do not seem to have an outspoken interest to engage in advocacy, criticism, and lobby activities that run against the Indian carbon market. Consequently, one might deduce that Indian civil society actors as well foster aspirations to make profit out of carbon market opportunities. In this context, the main interests are to develop and explore niche markets such as rural electrification and to promote activities with wider societal impacts on sustainable development, particularly in rural areas. Another ambition is to establish links with international private and public actors as well as to gain a good reputation as reliable development partners. The predominant value characteristic of civil society actors is inherent in their desire to work with and not counter the state toward enhancing India's social and economic welfare.

Generally speaking, civil society engagement in the field of climate and environment in terms of advocacy and of dedicated project activities is relatively restricted and mainly takes place at the central state level. This is due to the fact that civil society representatives' interests are to a large extent oriented toward social and economic development and livelihood matters. Consequently, CDM as such is not a main area of concern for nongovernmental organizations (NGOs). Due to the technicality and complexity of this mechanism, internal expertise on the subject is often lacking. At the local level, hardly any awareness about the CDM exists at all. This is also caused by the fact that project proponents refer to environmental protection in general and avoid to mention CDM terminology during public stakeholder consultation. One potential effect is the decrease in local stakeholder comments, which might be explained by vanishing interests and time constraints of local people confronted with a constantly increasing number of projects.

The civil society actors that are actively involved in the CDM comprise big NGOs operating at the central state level, such as Winrock India, Development Alternatives, World Wide Fund for Nature (WWF), Centre for Science and Environment (CSE), and TERI. Some of them maintain international linkages (e.g., WWF, Winrock India) and all of them receive funding from different international agencies. NGO engagement at the central state level differentiates between advocacy, research, and project development, and consultancy activities. The CSE is the only agency that merely operates as an

advocacy and monitoring body on any critical issues related to CDM projects through an extended reporter network. All the other NGOs engage in project consultancy and development. This constitutes an important revenue stream in addition to awareness-raising and capacity-building activities. The scope of activities, however, comprises the exploration of niche markets, that is, difficult projects (e.g., rural electrification), the development of new methodologies, and the diversification of climate change activities. Similar to private sector project developers, NGOs interact and collaborate with DOEs, DNA, and buyers. Due to their social scope, interactions with local people are more intense as NGOs are also occasionally approached with project proposals from the ground. TERI is the only NGO engaged in some research activities with focus on project applied, technology matters as well as climate policy advocacy issues.

Assessments of limited NGO engagement have to be qualified as regards certain sectors, for example, hydro energy, where NGOs emerge vociferously even though with at times ambiguous arguments and motives as regards CDM matters. In this case, NGOs are active in the hydro sector anyway and benefit from linkages to international lobby groups.

International Actors

This article argues that international actors, generally speaking, engage mainly in capacity building, carbon market promotion, diversification, and expansion to establish demand–supply linkages in the carbon market. Meanwhile, international investment and technology transfer activities on the part of industrialized countries and international business communities are surprisingly insignificant. International actors are mainly interested to make financial gains and to defend a certain international reputation. Underlying values that characterize these activities range from altruism, for example, global climate protection and sustainable development, profit orientation, to the interest representation of respective agents, for example, industrialized countries' carbon funds.

The most significant buyers of emission reductions from India are the United Kingdom, Sweden, and the Netherlands. However, also Japan and Germany with KfW Carbon Fund activities gain ground on the Indian carbon market. In summary, out of 379 registered CDM projects in India, 176 projects, which is about 46%, do have a buyer, that is, are not unilateral.

Until today, India has received a significant amount of foreign assistance with regard to capacity development for the CDM. Most of international efforts stem from the activities by the UNDP, the ADB, and the German Technical Cooperation (GTZ). These organizations have aligned and coordinated their activities in different sectors, institutions, and approaches. It is widely assumed that these very early initiatives have catalyzed CDM market development through national institution building, awareness raising, and skills enhancement. Other donor programs on CDM promotion take place specifically in the context of public–private partnerships. These involve Rabobank (Netherlands), MGM International Limited, Natsource LLC and Canada, the World

Bank Prototype Carbon Fund, and the Japanese Carbon Fund. International assistance efforts sometimes integrate a procurement program for CERs, for example, the Netherlands (CERUPT). Consequently, close ties to the (international) banking sector exist.

Today, international assistance activities are reoriented toward concrete and more specialized capacity building requirements (e.g., in the power sector) to baseline or methodology development and to awareness raising in the financial sector. Interactions take place among the respective development agencies, project developers, and NGOs (such as TERI), which are consulted for project facilitation and scoping studies. Beyond that, linkages to the network of Indian industries (Chamber of Indian Industries) exist that focuses on capacity building and project development assistance.

Modes of Interaction in the Indian Carbon Market

The main objective of this section is to discuss CDM market dynamics and interactions between participants. The purpose is to explore the ways in which the Indian carbon market is governed, with what instruments and modes of regulation. Apart from the characterization of carbon market stakeholders, this section also examines the CDM as new mode of governance for climate protection. This article proposes that Indian carbon market governance is characterized by the deployment of a mix of steering mechanisms. So-called hard modes of control through rules and regulations only play a role in cases in which state interests and reputation diverge from or gain superior priority to business interests. The following analysis will demonstrate that Indian carbon governance is characterized as private sector oriented yet invisibly state-controlled market facilitation.

For analytical purposes, the ways in which Indian carbon market governance works will be illustrated in the three concrete cases of sustainable development, revenue sharing and the renewable energy sector. In the first case of sustainable development, hard-steering mechanisms such as tight sustainable development criteria and strict implementation rules enforced through the host-country approval process do not exist. Indeed, criteria for sustainable development are formulated in an all-encompassing manner and allow many project activities to qualify for CDM status. This is due to the state's interest to provide CDM opportunities to a wide range of business actors and to promote carbon market development to enhance national welfare. However, international discourses and pressure that imply so-called soft-steering modes already had a visible impact on Indian carbon market governance in this issue area: Recently, the Indian NCDMA rendered host-country approval processes much more stringent. This was a direct reaction to mounting international and national criticism of the lax Indian host-country approval system. Consequently, one might argue that carbon market governance generally favors private sector activities but state intervention occurs as soon as state interests and values are threatened, for example, by international pressure.

Second, as for the issue of revenue sharing, the absence of rules, regulations, and other means of hard steering at the national level gives rise to the preliminary assumption that Indian carbon market governance is characterized by market facilitating soft governing. Yet, the following developments calls into question this

implicit representation of the state as mere market-friendly promoter lacking control and political will: Due to the federal system, Indian states have quite substantial political say in some policy areas, such as environment and energy. With regard to the CDM, local-level politics in some sectors can thus be formulated to render some sort of revenue sharing of CERs mandatory. This has to some extent happened or is currently debated with regard to renewable energy CDM projects in states like Kerala, Karnataka, Maharashtra, and Haryana. State interest in the CDM is explained by an emerging discourse of CERs as national resource predominantly at the local level. At the same time, lobby activities by private actors also take place at the local levels that seek to prevent this kind of regulation, which is opposed to business interests. In the case of revenue sharing, the behavior of the Indian NCDMA is characterized by what Shalini Randeria (2003) described as a “cunning state” mentality. Although the state does not take any hard measures at the national level, the possibility to exert more state control still exists through the less visible backdoor of local regulation and legislation.

Taking a look at the renewable energy sector as a third case, hard mechanisms to govern the Indian CDM market are strikingly absent. As aforementioned, the high number of renewable energy projects in India constitutes one of the characteristic features of the Indian carbon market. This is due to the fact that the state in general does not play a major role in and has limited stakes in terms of public ownership and control in the renewable energy sector. Taking one step further, one might hence propose that less state involvement increases the opportunities for market-based CDM activities that do not require hard mode of carbon market governance through the NCDMA. The predominant way in which the carbon market in this sector is governed occurs via discourses and to a limited extent through lobby activities by civil society actors. Civil society actors aim to broaden the scope of renewable energy activities and to facilitate private sector engagement in more risky areas such as rural electrification or solar energy technologies.

In summary, Indian carbon market governance is characterized by the limited application of hard-steering mechanisms. This positions the state as business-friendly market facilitator that retains some control options either indirectly through the backdoor or directly when national interests and values are at stake. The absence of the state in the carbon market and respective governance might be explained by the federalist nature of the political system. Although minimum carbon market regulation is ensured at the central level, the extent of public sector involvement is left up to the individual states. As will be argued in the following section, this allows the state to shun certain responsibilities.

Toward Evaluating the Efficiency and Legitimacy of Carbon Governance in India

The previous explorations of Indian carbon governance established a quasi status quo and identified stakeholder characteristics and emerging interaction constellations in the

local CDM market. This section moves beyond descriptive analyses of specific Indian carbon governance to address normative issues such as efficiency and legitimacy.

This article distinguishes between two broad aspects for assessing the efficiency of carbon market governance in India. First, efficiency is understood as the extent to which the main objectives of the CDM are met in the Indian context, which are to provide a trading instrument for cost-effective climate change mitigation and to contribute to sustainable development.

Regarding the first objective, the CDM in the Indian carbon market does provide for a cost-effective means to mitigate climate change. This is reflected in the sheer number of projects, the rapid pace of carbon market development, and prospective trends. However, the biased sectoral and geographical distribution of CDM activities throws doubt on the normative, equity-related aspect of this trading mechanism.

Taking the second objective into consideration, the CDM seems efficient in meeting sustainability requirements as the overall majority of CDM projects gain Indian host-country approval, which officially confirms that sustainability criteria are met. However, one debatable point is that the Indian definition of sustainability is all encompassing, which renders questionable whether the CDM indeed responds to the real needs of the people, for example, sustainable livelihood.

The second understanding of efficiency takes into account the extent to which endogenous objectives of Indian carbon market participants are met. As for the state's objectives to facilitate the functioning of the carbon market steered toward India's national interests, one might argue that Indian carbon governance meets this aim concerning the sheer CDM output. This has to be qualified, however, with regard to what exactly India's national interests mean, which obviously leaves room for interpretation: From a macroeconomic perspective, any economic value added through CER selling, the stimulation of business development, and strengthening of international business contacts definitely render Indian carbon governance efficient. Also from a regulatory perspective, the speed, efficiency, and limited transaction costs of the NCDMA approval process, that is, the governance of the Indian CDM market, is quite remarkable. This even counters the often-stated experiences and the critique of slow and corrupt practices of Indian bureaucracies and administration. Yet, from a distributional perspective, Indian carbon governance falls short of meeting national interests as many regions, sectors, and local people are left without means and access to the Indian carbon market. This is true, for example, in the cases of rural electrification, the small- and medium-sized enterprise (SME) sector in glass and brick industries, or the northeastern region.

From the private stakeholders' point of view, Indian carbon governance on the whole also meets the respective objectives of profit maximization, market access and expansion, and green-image acquisition. Even though CERs constitute an icing on the cake, they still provide additional income on investment. This comes at relatively low risk as most of the CDM project activities would go ahead anyway. In addition, other advantages such as international contacts, establishment of competitive advantages, and acquisition of new skills like monitoring come more or less as

a free given. Even though the need to establish a green image only exists for large enterprises with international presence, the integration of CDM into carbon management strategies enables companies to preempt public and international pressure or potential regulation. Yet, also private actors would qualify the efficiency of the carbon market. In the Indian case, no foreign investment and hardly any hard technology transfer takes place as originally envisioned, which impedes some CDM investment activities.

Civil society's assessment of carbon governance efficiency falls behind the generally positive evaluations by previous stakeholders. On one hand, Indian carbon market governance is to some extent acknowledged as efficient as it adds to scarce financial resources and facilitates international contacts. Furthermore, it scales up their reputation as reliable and knowledgeable partners and stewards of the local people. On the other hand, Indian carbon market governance would be assessed as relatively inefficient as regards the needs and demands of local people, and livelihood and environmental considerations. In summary, the efficiency of Indian carbon governance in terms of delivering anticipated outputs and meeting the stakeholders' objectives is assessed as relatively high.

Discussions of the legitimacy of Indian carbon governance focus on the input dimension of representation and participation, which differentiates between the respective stakeholder groups. At the state level, the legitimacy of Indian carbon governance is assessed as high. The NCDMA constitutes an interministerial steering committee in which all concerned state actors are represented on a rotating basis. Even though debatable, within India, the NCDMA has the reputation of a transparent institution open to public consultation. However, the lack of criteria for the selection and qualification of members as well as the inaccessibility of meetings and lack of documentation throw doubts on the transparency of Indian carbon market governance. The lacking transparency of NCDMA operations renders the assessment of *de facto* representation and participation of ministerial interests difficult.

From a business perspective, Indian carbon governance also qualifies as legitimate because private actors adopt the assigned roles and activities in the CDM process according to internationally established procedures. Apart from that, private actors have the opportunity to lobby for changes either individually or through organized networks such as chambers of commerce. In the case of revenue sharing for renewable energy projects, this is currently happening at the local level. Yet, the *de facto* possibility for private actors to access CDM opportunities and to participate in carbon market governance is constrained, depending on the business size and resources.

Lastly, civil society has internationally institutionalized rights and roles to play in carbon governance in terms of advocacy, monitoring, and consultation. Yet, the legitimacy of Indian carbon governance is partly called into question particularly from this stakeholder group's point of view. As proved in many cases (Castro & Benecke, 2008), public consultations either do not take place or happen in a way that does not qualify as consultation process. On one hand, due to the lack of awareness, information, knowledge, and resources, the participation and representation of local people in the

Indian carbon governance process is ambiguous. Unclear procedural rules and lack of monitoring, on the other hand, instilled fear and hesitant attitudes with regard to stakeholder consultation on the parts of project developers. This is due to incidences in northern Indian regions where the public consultation process has been used for personal enrichment by some stakeholders. At the national level, one might argue that the surprisingly absent civil society engagement in classical lobby and advocacy activities is not due to lacking access and opportunities but due to their own value orientation toward profit maximization. However, the fact that civil society often suffers from human, technical, and financial resource constraints that impedes de facto participation in carbon governance can be held against this.

In summary, normative assessments of the legitimacy of Indian carbon governance are subject to the perspective taken by the beholder, even more as regards efficiency considerations. However, the predominance of business interests and values that are to a great extent symbiotic with those of the state render questionable the extent to which Indian carbon governance is legitimate for stakeholder groups like civil society actors.

Embeddedness of the CDM in the Indian Context

To conclude on the characterization of Indian carbon governance, the global picture is brought back in at this stage, that is, tendencies of convergence and divergence of carbon governance are explored. This section analyses how the CDM, which is designed and institutionalized as a one-size-fits-all policy instrument at the international level, is taken up in the Indian context: To what extent do CDM governance rules and regulations at the local level function in a similar manner as in the international environment?

In the following, three arguments will suggest that Indian carbon governance developed some characteristic features, which means that to some extent the CDM has become embedded in the local context. First, CDM activities require the cooperation between several private stakeholders, such as project developers, consultancies, financial institutions, and DOEs. These are characterized by a high degree of informal contacts and a great value assigned to reputation, word-of-mouth trust, and repeated interactions. This results in quasisymbiotic relationships and networks between project developers, consultancies, and DOEs in which status and roles are not always clearly assigned but dynamic and subject to change.

Second, CDM activities and stakeholders rely to some extent on preexisting structures as private actors such as DOEs have been operational in India before and share previous business contacts with project developers and consultancies. This might explain the rapid expansion of CDM activities and the entrepreneurial reaping of opportunities despite lacking international investment. In contrast, one might even wonder to what extent these preexisting local relations and network structures that are adapted to the Indian way of doing business eventually pose implicit and invisible barriers to foreign investment and participation.

Third, international regulations on host-country approval procedures are also institutionalized in a way to fit Indian circumstances. At first sight, this might be refuted as

the Indian DNA is characterized by its efficiency and a reputation of integrity, which is not usually the case for Indian administration. However, the modes of governing the Indian CDM market by the state are characteristic of the so-called “cunning state” phenomenon typified for India (Randeria, 2003): Without doubt, the NCDMA has sufficient human, financial, and technical resources to apply harder control mechanisms, for example, with regard to sustainability assessments, additionality testing, and establishing level-playing fields on regulations. Yet, the state—that is, the NCDMA—chooses not to do so. In some cases such as revenue sharing, responsibilities for these decisions are devolved to lower levels whereas in other cases no decisions and corrective actions are taken until a tipping point is reached. As in the case of sustainability assessments, once international pressure or domestic unrest is great enough to pose a threat to state reputation or survival, political will and capacities are summoned to take corrective actions. In addition, just recently another DNA decision on 2% CER sharing in hydro projects also proves that the state takes action when confronted with international pressure.

In conclusion, these illustrative examples show that international CDM governance features are not transferred to the local context in a uniform manner but have been adapted to specific Indian circumstances. This finding contributes to the hypothesis that carbon governance diverges at the global level.

Possible Trends and Prospects for Indian Carbon Governance

This article has so far focused on the analytical exploration of Indian CDM market activities as new modes of governance for climate protection. This section will broaden the perspective by considering wider impacts of carbon market governance in India. This regards the three aspects of sustainable development, environmental policy making, and post-2012 debates. This allows to project future developments of the Indian carbon market and to suggest entry points for support activities to scale up the effectiveness and legitimacy of emerging carbon governance.

The first main point is that the introduction of the CDM per se has had no impact on policy making in any policy field, neither at federal nor at state levels. Second, however, Indian carbon governance created awareness about climate change and preventive actions among participating and affected stakeholders. The emerging carbon market was accompanied by international discourses and developments in climate politics. This is why the dissemination of environment and climate concerns by media and policy makers might to some extent be facilitated by the success of Indian carbon governance. Generally speaking, since the initiation of the CDM in 2002, a continuous increase of press articles and media coverage on environmental and climate issues is observed. However, reports on climate change are confined to some better quality newspapers and hardly catch the front pages. Furthermore, the CDM as such is hardly ever discussed except in business-specific magazines and journals. Still, since the involvement in the CDM process, particularly the well-educated, urban population has

become more aware of climate change issues. This has already had some repercussions on Indian industry: As greater public demand for cleaner production is anticipated, Indian industries (e.g., CII) have initiated public outreach and climate-related CSR activities. An overwhelming consent exists that the CDM has definitely created awareness of climate change among the business community. Reports state that in the top 500 companies, the CDM is debated and regarded as an important means to manage greenhouse gas emissions while achieving greater efficiency. This implies that the CDM contributes to industry-level awareness of environmental issues. Ultimately, the CDM is regarded as an option to reduce costs or to make money through investments in environment-related activities. Companies are mainly concerned about the day-to-day survival. Yet, the CDM provides incentives to adopt more cost-effective, environment-protecting measures in the long term to forego any legislation or regulation. Specific industry participation and interests depend on the inventive mind of crucial stakeholders and decision makers and the perceived need for environmental action out of social obligations or future sustainable growth objectives. However, the lack of internal capacities and external encouragement, particularly in the SME sector and companies that are not prone to climate change, affects challenges in CDM engagement.

Third, Indian carbon governance provides an example of efficient and legitimate collaboration and coordination across several ministries under the auspices of the NCDMA. Yet, particularly the public sector also at central government level has a bad reputation of being laggard as regards mainstreaming environmental considerations. For the Ministries of Finance and Planning, the CDM financially appears too insignificant to assist in restructuring and greening entire industry sectors. Hence the costs of mainstreaming the CDM or environmental obligations are currently considered too high. Also in government bureaucracies at state level, CDM and climate issues are not well received due to slow changes of attitudes and conventional practices. Work overload or simply bureaucratic lethargy in many cases outruns the very few enlightened initiatives, particularly if they do not emerge from decision-making positions.

The fourth point is that as the CDM is considered a voluntary activity by many stakeholders, the policy debate about climate change regime post-2012 is not acknowledged as relevant for business operations. As climate-related investment, that is, potential CDM projects, are never taken on the basis of carbon credits, strategic business decision are not affected by these debates.

Lastly, with regard to the CDM, India's priorities in the climate change regime are to strengthen market-based mechanisms, to streamline and broaden the scope for CDM through institutional reforms of the EB, and to facilitate procedural mechanisms. In response to the shortcomings of current technology transfer, the restructuring of the intellectual property rights (IPR) regime is demanded (Srinivasan, 2006) in addition to increased international funding for research on adaptation. This gives rise to the argument that the Indian carbon market has become a matter of Indian national interest with some tentative impacts on business activities and policy making.

As regards the future trends of the Indian carbon market and governance, the present status and pace of diversification suggests that as long as international demand for CERs exists—in whatever manner—the Indian carbon market will remain operational. Among

private stakeholders, new secondary market actors might emerge, and dependent on further capacity building SMEs and other sectors might come into play. Activities are currently under way to broaden the applicability of the CDM to policy areas, public actors, and programmatic fields. However, this might require adjustments to Indian carbon governance as the NCDMA will be confronted with the demand for more stringent regulation of the expanding market due to the need and the pressure to establish equal level-playing fields. Hence this article suggests that increasing market activities demand for a greater shadow of hierarchy, that is, more direct state intervention in the Indian carbon governance context through the application of harder modes of governance.

In summary, two key points are briefly raised for further debate at this stage. First and foremost, the CDM is subject to multilevel governance and substantial reforms. So a change of procedures and processes can only take place at the international level. Hence, scaling up activities to incorporate sectoral or programmatic CDM, facilitated methodologies, and so on are not in the scope of Indian carbon governance. Even though, avenues for Indian lobby activities to influence this process emerge in the UNFCCC framework.

This leads to the more important second point about activities that are within the scope of the Indian carbon governance system to scale up effectiveness and legitimacy. As the CDM is a multistakeholder process that takes place in the shadow of hierarchy, all carbon market stakeholders are called on to engage in reforms. Just to name one example, regulatory authorities might introduce stricter procedures regarding project quality controls, put efforts into establishing equal level-playing fields (e.g., income tax regime), and encourage promotional activities to sidelined market participants, for example, NGOs and small project developers. However, these initiatives imply changed understandings and self-perceptions, which means that internal reform processes can at the most be triggered through external incentives. In the end, the specific carbon governance reforms have to be designed in and according to the local context—everything else would resemble a one-size-fits-all imposition of Western concepts.

In conclusion, taking stock of local carbon market and governance in India served two purposes. First, the understanding of patterns and interactions in the Indian CDM market provided empirical groundwork for practical reform proposals in response to CDM criticism. Second, the fact that Indian carbon governance reveals specific features of patterns and interactions support the argument that carbon governance diverges around the world. Ultimately, this article contributed to research on local carbon governance in emerging economies and provided a conceptual understanding of functional equivalents to OECD-based governance in climate change politics (Fuhr & Lederer, 2009).

Author's Note

Observations on the Indian carbon market are based on a range of qualitative interviews with private, public, and civil society stakeholders (they remain anonymous in this article) as well as

participant observations at carbon conferences and business meetings conducted August 2007 to January 2008 in India.

Acknowledgments

Research in India was made possible by the hospitality and support of Mrs. Pamposh Bhat at the GTZ India and The Energy Resources Institute (TERI). I thank the editors and anonymous reviewers of JED for helpful comments as well as the participants of the Varieties of Carbon Governance Workshop in Potsdam in July 2008.

Declaration of Conflicting Interests

The author declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

Funding

This research was funded by the German Research Foundation and conducted as part of the research centre 700: Governance in Areas of Limited Statehood.

Notes

1. Depending on the size and complexity of the project and methodology suggested, prices range from US\$5,000 for less difficult, smaller projects to US\$50,000 for very sophisticated, larger projects.
2. DNV, for example, conducts an internal corporate audit on a regular basis to ensure the reputational integrity of work.

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Bio

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