EXTRACT of ISSUE PAPER

Before undertaking something difficult,
re-state the problem:

There is no institutional assessment of CDM generation in a country available as a basis for a CDM support strategy. Science and economics have been debated extensively in national and international forums. In comparison, this has not been the case with institutions, governance and service activities that are vital to the efficiency of CDM and there remains a significant gap in analyses and action.

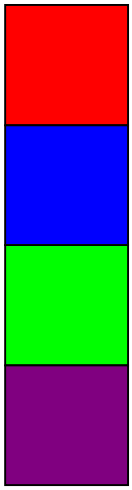
Institution as an actor-created rule of behaviour, restricting and enabling actors' behaviour (Douglas North)

The first of two steps is to choose an approach to institutional factors, which of the unlike features correspond. The same analytical framework must yield the different features in the three countries. The following proposes to start with the organizational capacity in those firms that produce or control CDM projects so far, assuming that these firms successfully respond to the needs of the market surrounding them.

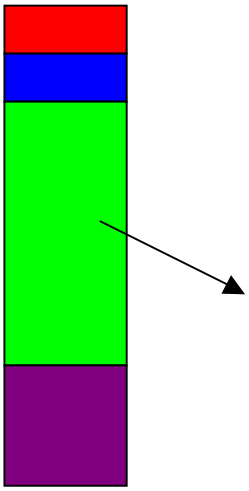
The second of the two steps is to review the theoretical literature and choose an approach suitable to inform interventions.

Institutional Factors in CDM

Institutional factors are „path-dependent" because of organisational learning within the companies involved

Origin of knowledge:	100 %	Skills usable:
Engineering		master technology
Accounting		methodology, PDD
Investment		financing
Brokerage		CER negotiation

Brazil



Half of all Brazilian CDM are run by
Econergy: 990 MW ~ 90% of Bagasse
Ecoinvest: 939 MW ~ 70% of all Hydro

while 14 landfill CDM, low investments, are split among 10 different developers

strongest institutional factor : efficient local capital markets because a company learns to offer a financing service that builds on the operators' positions.

builds on historical relation between utility and sugar business

India

strongest institutional factor:
owners of installations use all means for control

71 biomass CDM

all 16 Bagasse CDM are mill owned, the 5 smaller ones needed a foreign BOOT consultant, Agri-Energy LLC

all 18 Rice Husk CDM are mill owned, only 4 needed a PDD consultant

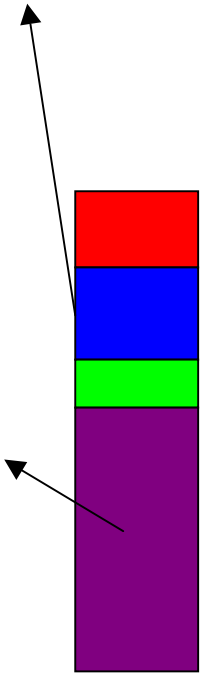
66 energy efficiency CDM

30 hydro 1 from Ecosecurities, all others Indian power companies

46 wind 13 PDDs from Senergy, an Indian carbon trader
9 PDDs PwC India
5 PDDs NEG Micon, manufacturer

14 fuel switch CDM

12 biogas CDM



Owners' interest in CERs shapes CDM esp. in biomass, wind and hydro

Host countries consultants reach 49 % of all PDDs

Pandey and Zenith 9 PDDs each, only wind created more PDD learning;

international consultants do not achieve influence:

all 10 PricewaterhouseCoopers India methodologies rejected, 30 PDDs;

Ernst & Young 34 PDDs.

China

institutional factor: developers follow all government priorities and don't specialise

6 HFC-23 CDM 225 mio. CERs <2012

6 Landfill CDMs 11 mio. CERs <2012
one each Ecosecurities, Phascon, WM, GCCI, Shanghai Y.

17 Wind CDMs 11 mio. CERs <2012 782 MW_{el}
one each IT Power, ESI, Westlake, CAMCO 2
Green Cap. 3, Ningxia 2, B. Keji 2, B. Easy Carbon 2, GCCI 2, CWEME

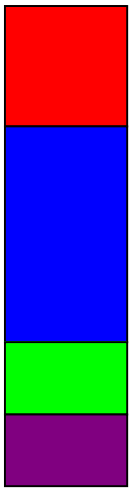
11 Hydro CDM 6 mio. CERs 284 MW_{el}
one each IT Power, ESI, CAMCO, 2E, ….. only Gansu Province 3

1 Coalmine methane 5 mio. CERs by ESI

1 fuel switch CDM 0.1 mio CERs by Shanxi Hua'aoda

1 energy efficiency 0.7 mio CERs by Westlake

1 reforestation CDM 0.1 mio CERs by Joanneum Research



foreign developers pursue one CDM of each CDM type, nat. developers also spread, both pursue all priorities announced by government.

CDM presented by the DNA during CarbonExpo 2008
institutional factor: developers avoid specialisation

of 87 CDM presented 33 are unilateral, among the others most frequent:

Shanxi Air CDM Technical Center:	2x600 MW power plant
	Fuel switch
	Cogeneration coke oven 12, 37 MW
	Cogeneration in steel plant
	Hydropower 4 x 100 MW
	Landfill
	SF6 Mg production

Very diverse technology, all in Shanxi region and with 8$/CER

Shanghai CDM service center:	Kiln process control
	Wind power generation 45 MW
	Landfill
	Biogas anaerobic digestor

Ningxia CDM service center

CECIC Blue-Sky Investment:	Cement
	Blast furnace steel
	Power plant
	Biomass cogeneration

Specialisation only at IC-SHP	5 small-scale hydro CDMs

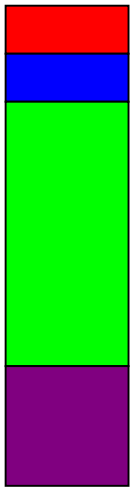
Foreign developers only in Coalmine methane:
ADB, CAMCO, Mitsui Co., Sumitomo Co.

All national developers cited similar CER prices irrespective of the CDM type.

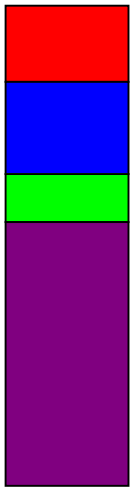
Organizational learning as reflected in market trends and major companies leads to clear comparability. The graphic is only an illustration.

Institutional factors in CDM project development

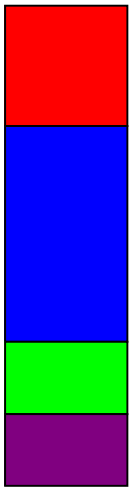
Brazil



India

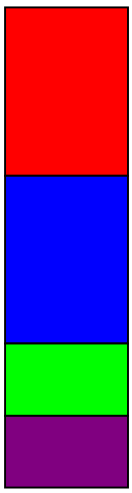


China



The most influential skill in Brazil is finance, in India CER negotiation and in China accounting. In each country, there are firm-internal causes that reinforce policy derived from national resource endowments.
Technological factors affect institutional factors only in some cases such as:

N_2O CDM projects with 55 plants worldwide completed:



N.serve, Ecosecurities and Mitsubishi managed to leverage methodology and technology and thereby divide countries between them. Their competition forced them to share CDM profits with operators, but these could not take the risk of deviating from other operators within each country.

Step two: choose an intervention approach

The World Bank's papers as much as academics' accounts of climate governance in the three countries show (below) there are few common elements and the types of policies and institutions emerging are so dissimilar that insights from one case yield little for another. Environmental policies among EU member states also show very little convergence even when supranational institutions such as the European parliament bind states over decades (Héritier). Environmental policy remains firmly rooted in national policy history. The UNFCCC's Conferences of Parties, meeting annually, certainly will never be able to instil convergence of climate governance.

What bases is there in political science to inform an assessment of DNA operation so that institutionalisation can be supported ?

Even so this question is different from defining the state of the carbon markets, the answers are as dissimilar between the three countries.

Academic accounts of climate governance in Brazil, India and China

Pinto, Puppim de Oliveira, 2008, Implementation Challenges in Protecting the Global Environmental Commons: the Case of Climate Change Policies in Brazil, *Public Administration and Development*, 28: 340-350.

Foreign Affairs (Itamaraty), MCT, MME want to exclude the Amazon from KP, MMA and NGOs to include Amazon deforestation. UNCCD relies on Brazilian own funding, whereas Biodiv Convention on int. funds but implementation deficits are tolerated. Biofuels are shaped by social policy and employment over environmental concerns, but international projects rejected such as PCF' Plantar CDM. DNA increases CDM costs with repeating UNFCCC procedures while lacking organizational capacity.

Ganapati, Liu, 2008, The Clean Development Mechanism in China and India: a comparative institutional analysis, *Public Administration and Development,* 28: 351-362.

China's NDRC is a powerful state body, imposing 51% nat. ownership, CDM priorities, differentiated taxes, reviews ERPAs, minimum prices and expert judgement with no political room for business or civil society.

Indian National CDM Authority in the Ministry of Environment and Forests, has no criteria, no preferences, follows project-by-project mode, open debates between Ministries, local government, business and NGOs. Little oversight has resulted in price discounts for Indian CERs. Several Indian states have no CDM projects.

Benecke, 2008, India Case Study, SFB 700 Emerging Modes of Governance and Climate Protection, Universität Potsdam.

At first sight, the absence of tough rules and regulations gives justice to the characterisation of Indian carbon market governance as market facilitative 'soft' governing. The NCDMA occasionally displays a so-called 'cunning state' attitude. Not taking any hard measures at the national level, the state still provides for the possibility of taking greater influence and control through the less visible backdoor of local regulation and legislation.

Axel Michaelowa sees an Indian belief that laissez-faire CDM is India's contribution to global climate governance.

Schroeder, 2008, China Case Study, SFB 700, Universität Potsdam.

NDRC pulls the string of the CDM market and utilises the international mechanism for its own priorities by imposing additional regulations and levies - we can thus talk of a 'market capture by the state'. The Chinese government regards the CDM as new form of international subsidy for its energy policy. The Chinese royalty fee on CERs is intended to 'keep the sovereignty on national resources'.

Friberg, 2008, Brazil Case Study, SFB 700, Universität Potsdam.

The DNA has a strong focus on the environmental integrity of CDM, but is increasingly forced to take into consideration the views of CDM business actors who in 2008 were successful in reversing a key decision that threatened the financial viability of renewable energy CDM. It also has a firm positive reputation as fair, efficient and thorough. CDM created 7 times more generation than the state's programme to promote renewables, PROFINA. Esp. in Bagasse cogeneration, CDM overcame the barrier of utilities preventing the sugar companies from supplying to the grid. Finally, the attention to CDM contributes to shifting the debate about the Amazon from sovereignty to a domestic climate policy.

Conclusion from observations of DNAs and national policy

States' responses to CDM regulation:

- China all Chinese policy needs executed, inside of policy making hidden
- Brazil severe national interest differences between sectors and Ministries
- India no policy capacity while operationally efficient administration

Policy Co-ordination Opportunities between National Climate Policies

States' policy contributions to the global regime:

- Norway buys large amounts of primary CER, as the main European energy exporter
- China sets the global floor prices for carbon at a minimum of Chinese CER
- European Union set precedents for dividing sectors for carbon offsetting
- Germany sets a precedent for auctioning format and price dynamics
- UK defines voluntary standards
- USA, in gestation

India none

Brazil

The main market aspect is the specialisation of CDM developers which capture certain CDM types by offering financing services. The state's response has been a technocratic DNA, reputed for its thoroughness, while different federal government ministries continue to pursue different policy criteria esp. regarding the Amazon and biofuels.

Constitutive institutionalism provides an array of theories to describe such a context and its evolution. The DNA has achieved a prominent role and is intensely observed by market actors. It has also received international attention and has defended its authority towards international bodies and claims authority from it, while different national forces do not align among themselves and towards the international bodies.

The DNA can defend all of its rulings effectively (quite unlike other environmental regulation in Brazil) but is hampered in expanding these rulings to respond to new demands from markets actors and international bodies. Its sovereignty needs to be defended by articulating national positions which are however subject to shifting positions. This illustrates well Reinecke's internal and external sovereignty, the latter is more a source of power than the former. Brazilian NGOs active in climate change are much more visible outside Brazil than within the country. The DNA demands and checks that all NGOs are informed about all CDM projects. However, these have never responded by commenting on a CDM project and claim insufficient capacity. The DNA is the only one worldwide demanding that CDM documents are available in the local language and checks their circulation. Brazilian NGOs are also the only ones enjoying full access to governmental sessions during COP/MOP.

The DNA is thus a state actor seeking a new mix of public and private power and shares its role in public interest formulation. However, the mixing of public and private is much less dynamics than it hoped. International interests can increase the division within the government, some Ministries interact more with some international business bodies such as the World Business Council for Sustainable Development, other with influential Green NGOs such as WWF or Greenpeace. Differences among international business bodies as well as differences between Green NGOs are not overcome and the DNA can not establish its authority to direct market expansion. When the autonomy of the state is required it can not assert itself and integrate sectors and civil society groups.

In the Brazilian case, history as internal colonialism plays a role. Dominant economic groups, large landowners, industrial centres and trade unions form different alliances at the state level and the federal bodies cannot overcome these differences. The level of policy possible through the DNA is severely limited. It is a rational instrument but does not reach a higher level of institutionalisation, a stronger

identity with a legitimate purpose. CDM has impressively pushed aside old institutional blockages to renewable energy, esp. in Bagasse and wind, where the national programme PROINFA failed, thereby demonstrating well that CDM can overcome some internal colonialism. The DNA nonetheless failed to bring these forces into Brazilian policy processes.

India

The Indian DNA is at an earlier stage of institutionalisation than the Brazilian one because, among several features, it has not yet brought concerned Ministries to articulate possible differences between them. While it is an exceptionally efficient organization for Indian standards and free of corruption, it cannot be described with a particular record nor does it stand for a particular function (besides CDM formalities). As an institution, it does not hold or use its powers although it is similarly well connected with powerful ministries as is the Brazilian DNA. Further development of the Indian DNA can thus be informed by the body of theory for warranted institutionalism.

The DNA needs to assert its authority, justify its impacts and get endorsements from other institutions. Through its insights into the details of all CDM projects, it can put its capacity to perform functions in the CDM service market yet unused. It can make use of its procedures and processes to assert criteria and offer information to market participants. In particular, the dominance of unilateral CDM and the uneven distribution among the states in India hold much potential. These three aspects must be combined, assert a function for CDM development and articulate it, create the means by which there is an element of control and justification, and thirdly get recognition for it.

Given the strength of democratic processes at the federal and the state level, the DNA can provide different levels of market information as input to political judgements of market quality. While the Indian position in global negotiations is marked by the 'polluter pays' challenge to the Annex I countries, there are lower levels of carbon regulation that are not influenced by this challenge and allow the DNA to act domestically. There is scope for national CDM regulation that does not infringe on the authority of Ministries. For example, the DNA has issued a text that defines sustainable development benefits from CDM as comprising social, economic and environmental benefits - a rather superficial interpretation, encouraging CDM developers to use "cut and paste" of such text in PDDs.

CERs from Indian CDM have tended to get lower prices than from other countries because the Indian DNA is seen as a "rubber-stamper", an impression that is encouraged when authority is not exerted at least in exceptional cases. PricewaterhouseCoopers India and Ernst & Young India have been early CDM developers but have not gained advantages over others from it. The contrast to the success of Econergy and Ecoinvest in Brazil is striking. PWC and E&Y are also known to produce PDDs and occasionally not reveal this in them, so their reputation might reduce the value of such documents. The predominance of unilateral CDM is probably more important for limiting the learning in PWC and E&Y than the lesser scrutiny from the DNA. The considerable role that the German aid agency GTZ has played in the Indian DNA cannot be assessed here.

The CER price and the record of Indian developers can be seen as justification for state action from the Indian DNA without drawing criticism for Indian bureaucratic activism. A DNA has scope to invent its accountability even more so in a new type of market. Otherwise the strong post-colonial foundation of the Indian state can reproduce the state - civil society dichotomy, often attributed to a leftover of Gandhianism and socialist planning.

China

In many ways, the Chinese state is a version of the ideal Weberian rational bureaucracy and the DNA is no exception. Watching from outside, one is often left assuming that the Communist Party manages an extensive array of overlapping and interlocking responsibilities. The National Coordination Committee for Climate Change (NCCCC), re-organized in 1998 is responsible for policy, the National CDM Project Board approves CDM projects and the National Development and Reform Commission (NDRC) is the official DNA. However, the head of NDRC is also the chairman of NCCCC and of the Board and the real centres of power among these institutions is unclear (NDRC being the most powerful among the NCCCC member institutions). Fundamentally, the Chinese government is a singular pyramid where the maintenance of hierarchy is an overarching concern. NDRC opens no 'policy space' for CDM actors to engage in a public dialogue and there is no evidence for particular CDM aspects motivating this lack of policy space. Elsewhere, NDRC has started submitting the M&E of its own current Five-year National Development Plan to public participation and prides itself in this new opening as a factor improving Plan implementation.

Contributory institutionalism is a body of literature that focuses on institutions as contributors to a common purpose. It is particular revealing for China as it reflects the disjointed incrementalism and strong bounded rationality that marks Chinese public bodies. Where might NDRC be able to start acknowledging passive or active institutional interaction is the main issue both domestically as well as internationally.

NDRC plays a prominent role in the transformation to a socialist market economy beginning in the 1980s (as the successor body to the former State Planning Commission) by balancing market and administrative (command and control) tools. Contrary to Brazil and India, the Chinese DNA was not a new institution and did not have to establish credibility or authority. Among many CDM regulations from NDRC, two are particularly influential. All CER purchase contracts (ERPA) must be submitted to NDRC for approval and CDM project owners must have at least 51% Chinese ownership. Both are effective to assure that CDM revenues are entirely in Chinese hands but other implications might also be more important policy goals or not at all. NDRC leaves policy aspects essential for concerted efforts undefined. For example, it shapes CER trading and provides incentives for emission reductions but does not specify how the two are expected to affect each other. Similarly, it is possibly an exaggeration to infer that because China rejects emission caps, she also judges all other aspects of CDM focussing the impact on growth alone. NDRC's pre-Kyoto political weight adds to China's weight from the CDM volume via the economic dynamic. Thus there are Kyoto-specific reasons and non-Kyoto reasons why the Chinese DNA is so much stronger than all other DNAs. All the more, NDRC needs to be collaborative in order to avoid being limited by less powerful DNAs suspecting NDRC to focus solely on its domestic agenda.

For NDRC to enhance leadership by more contributory efforts internationally and more facilitatory efforts nationally should depend on "collaborative advantages" feasible. Climate change and CDM in particular should lend themselves to such advantages. The fate of NDRC's now defunct Energy Bureau might lead to insight why NDRC doesn't pursue such collaborative advantages so far.

The distinction between constitutive, contributory and warranted institutionalism used here is from Ian Thynne, 2008, "Symposium Introduction. Climate Change, Governance and Environmental Services: Institutional Perspectives, Issues and Challenges", *Public Administration and Development,* 28: 327-339.
Thynne's distinction of three institutionalizations seems more salient for the empirical cases of these DNAs than the theoretical strands he described.