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Efficient DNA operation: Lessons from different DNA settings in non-Annex-B countries

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Abstract: As the Clean Development Mechanism (CDM) has shown its rapidly growing market and we approach the beginning of the first commitment period of the Kyoto Protocol, an increasing number of non-Annex-B countries have recently established their Designated National Authorities (DNAs) to participate in the CDM. Essential questions to enable efficient operation of a non-Annex-B DNA (host country DNA) are i) how to expedite an approval process without losing quality of approved projects, ii) how to attract foreign investors, and iii) how to become financially sustainable. It is concluded that a balance between the level of scrutiny and approval speed and criteria is essential for the first question. A standardized and transparent approval process is of great help. As for the second question, a quick and transparent approval process is one of the key factors to attract foreign investors. A careful choice of promotional functions should be made striking a balance between a host country's needs and resource availability. A host country DNA at an early stage of development should first focus on operationalization of its approval system and is not recommended to expand its scope to promotional activities. Concerning the third question, a host country DNA should contemplate a balance among its Certified Emission Reductions (CERs) supply potential, related service fee volumes, and choice of DNA functions.

Key words: Designated National Authority, Clean Development Mechanism, Kyoto Protocol

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1. Introduction

The CDM offers non-Annex-B countries new opportunities to reduce their greenhouse gas (GHG) emissions, achieve sustainable development, and create carbon credits (CERs), through GHG emission reduction projects. One of the prerequisites for a non-Annex-B country to participate in the CDM is establishment of a DNA. A DNA evaluates proposed projects and provides written approval (LoA: Letter of Approval) confirming that the country has ratified the Kyoto Protocol, the project is voluntary and assists in achieving sustainable development of the host country. A DNA can also get involved in promotional activities such as project outreach and training activities for various stakeholders.

Focusing on structures, regulatory and promotional functions of DNAs, this paper analyzes different DNA settings in non-Annex-B countries. The regions surveyed are i) the Latin and North American regions, which have advanced institutional capacity due to their strong participation in the Activities Implemented Jointly (AIJ) pilot phase, ii) the Asian region as the second most advanced, and iii) the South-Eastern Europe and Former Soviet Union (FSU) regions, which have lagged behind compared to other regions. Based on lessons learned from the surveyed regions, the study makes recommendations for an efficient DNA approval system and further explores possibilities for host country DNAs to become more proactive than approval-only DNAs.

2. Status of DNAs in non-Annex-B countries

As of August 2006, there are 88 DNAs in non-Annex-B countries which have notified to the UNFCCC Secretariat. The imbalanced geographical distribution of host country DNAs shows the wide range of CDM institutional development levels in different regions (Fig. 1). In terms of CDM institutional capacity, the Latin and North American regions are the most advanced due to its active involvement in the AIJ programmes. 17 out of 20 non-Annex-B countries in the regions have already established DNAs and most of them are fully functional. Asia is considered as the second most advanced region, represented by the large number of DNA notifications and several CDM giants, e.g. China and India. However, the region also includes some countries with DNAs at an early stage of development. Because of its notification rush in 2005, the number of DNAs in the African region has significantly increased. However, most of them are not in operational condition except for South Africa and Maghreb countries. The regions most lagging behind are the Middle East, South-Eastern Europe and FSU regions. Many factors such as uneasiness with the Kyoto Process (Middle East), political instability, lack of human and financial resources, and the low awareness of the CDM in the regions have caused the tardy institutional development.

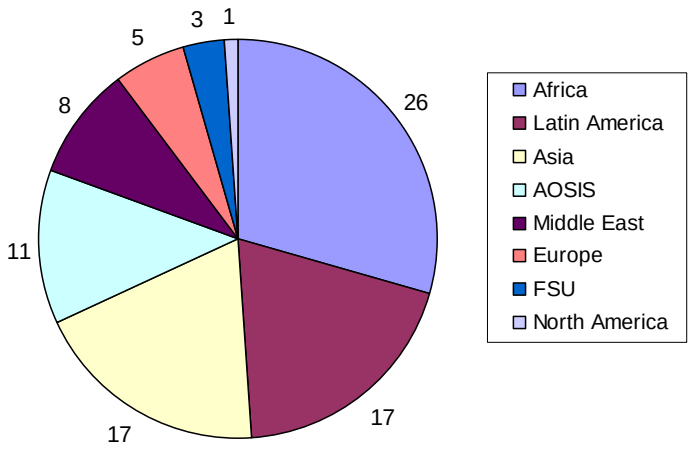


Fig. 1 Number of non-Annex-B DNAs according to regions (August 2006)
Source: UNFCCC 2006.

This study analyzes different DNA settings and exploits lessons from the experience in the Latin and North American, Asian, South-Eastern Europe and FSU regions: Latin and North America as the most advanced case, Asia as the second most advanced, and South-Eastern Europe and FSU as the regions yet to come.

3. Structure of DNAs

As a first step of the analysis, this section summarizes DNA structures that are theoretically possible and ones that are in practice in the surveyed regions. Lessons from the experience conclude the section.

3.1 Theoretical structure of DNAs

Theoretically, there are at least five approaches to develop a DNA structure: i) single government model, ii) two-unit model, iii) inter-ministerial model, iv) foreign direct investment (FDI) piggyback model, and v) outsourcing model. These five approaches are summarized below.

Single government model

One department or ministry undertakes all DNA activities and may invite technical experts upon demand. The DNA Secretariat may also be responsible for marketing and promotion of the CDM (see Lee (ed.) 2004). A host country can avoid a blockade through conflicting interests of different ministries that leads to high transaction costs for project proponents (see Michaelowa 2003). However, another kind of conflicts may arise if a DNA plays both roles of CDM approval and promotion.

Two-unit model

Activities of a DNA are split into two parts. Regulatory functions are assigned to a department responsible for climate change while promotional functions elsewhere in another government department or an independent unit. It may establish an ad-hoc CDM Board with representatives of ministries to conduct the regulatory work. The separation helps to avoid possible conflicts of interest in the process of project formulation and approval (see Lee (ed.) 2004).

Inter-ministerial model

All relevant government departments are integrated into a DNA as permanent members. The Ministry of Environment can act as a coordinator but all member departments undertake approval of projects. A committee to operationalize this approval could be set up (see Lee (ed.) 2004). This model can incorporate wide

variety of expertise. However, conflicts of interest may arise among different departments. If not managed properly, it could considerably slow down the approval process.

FDI-piggyback model

Most countries have a Foreign Direct Investment (FDI) institutional framework, which typically comprises a promotion office and an approval or implementation office. The FDI framework could thus be adapted for the CDM and be used as a DNA. Relevant technical experts could be sourced by the investment office to assist validate GHG emission reductions (see Lee (ed.) 2004). This model may allow quicker DNA set up, but conflicts of interest are likely to arise if the DNA is also involved in promotional activities.

Outsourcing model

DNA services can be outsourced to an independent agency. The independent agency evaluates and validates projects, and report to a government agency. Then the government agency would forward the project approval letter to the Designated Operational Entity (DOE). This model may increase flexibility in funding options, but rigorous oversight is required to ensure the quality of project approval. Also, conflicts of interest between regulatory and promotional functions may arise if a single agency is in charge of both functions.

3.2 Structure of DNAs in the surveyed regions

According to the classification given above, this section gives a summary of DNA structures in the surveyed regions.

3.2.1 South-Eastern Europe and FSU regions

Of the seven DNAs that have been created so far in the South-Eastern Europe and FSU regions, only Moldova has established a fully-fledged DNA with almost complete project criteria and approval procedures in place (see Findsen and Olshanskaya 2006). All are hosted within the government and have designated the Ministry of Environment as the primary contact point for their DNAs. Typically, an inter-ministerial board is created that includes high-level officials from all relevant ministries, which is usually headed by the Ministry of Environment that acts as the

final decision-maker on CDM project approval. The DNA Secretariat, housed by the Ministry of Environment, then acts as the administration for this body by coordinating all day-to-day activities, setting up meetings, and undertaking various outreach responsibilities.

As is shown in Table 1, most of the countries are in process of establishing DNAs with two-unit models. In Albania, Armenia, and Georgia, the DNA Secretariat is hosted by an office that is designated specifically for climate change activities in order to utilize their experience with climate change activities. Moldova placed its DNA Secretariat office at the State Hydrometeorological Service of the Ministry of Environment, but staff from the Climate Change Office of the Ministry of Environment acts as the secretary (see Findsen and Olshanskaya 2006). On the other hand, Macedonia is considering a single government model because the approach does not entail complicated and time consuming legal requirements, hence allows for quick DNA setup. Also, the single government model, hosted by the Ministry of Environment, is deemed as the best option because the model enables concentration and effective use of cumulated experience and expertise in climate change activities (see Grncarovska 2006). Detailed DNA structures in Azerbaijan, Serbia and Montenegro are to be decided. UNDP has just launched a technical assistance project to support DNA establishment in Serbia and Montenegro.

Table 1 DNA structures in the South-Eastern Europe and FSU regions (August 2006)

Country	Year of notification	Structure	Nature of the approval entity
Albania	2005	*In process:* Two-unit (govt.-govt.)	Ministry of Environment
Armenia	2003	*In process:* Two-unit (govt.-govt.)	Ministry of Environment
Azerbaijan	2003	*Under consideration*	Ministry of Environment
Georgia	2003	*In process:* Two-unit (govt.-govt.)	Ministry of Environment
Macedonia	2006	*In process:* Single government	Ministry of Environment
Moldova	2003	Two-unit (govt.-govt.)	Ministry of Environment
Serbia and Montenegro	2003	*Under consideration*	Ministry of Environment

Note: "govt.-govt." for the two-unit model means both regulatory and promotional units are government bodies.
Source: Adapted from Findsen and Olshanskay 2006; Grncarovska 2006; UNFCCC 2006.

3.2.2 Asian region

There are 17 Asian non-Annex-B countries which have notified their DNAs to the UNFCCC by August 2006. Out of 10 DNAs surveyed, eight countries have two-unit structures, while other two inter-ministerial. The DNA structure in the Asian region is rather homogeneous with all the eight two-unit DNAs having the DNA Secretariat at a government department and ad-hoc inter-ministerial committee for project evaluation and approval. Some difference in DNA structures is observed within the category of a two-unit model. For example, Bangladeshi DNA has a simpler structure with Ministry of Environment as the DNA Secretariat, and National CDM Committee and CDM Board as approval bodies (the latter acting as an endorsement body). On the contrary, Malaysian DNA has a relatively complex two-unit structure with strong government involvement. Besides Ministry of Environment as the DNA Secretariat, it has a multilevel approval body with National Steering Committee on Climate Change, National Committee on CDM, and Energy Secretariat or Forestry Secretariat (depending on CDM project types). Due to its complicated approval structure, the DNA has been seen as a hurdle by project proponents. Another interesting case is Thai DNA. In addition to the common two-unit structure, the CDM project approval process in Thailand involves the Cabinet in its current procedure. This has been the major hurdle and no project has received a host country approval so far. A plan to

establish a Thailand GHGs Management Organization has been approved by the Cabinet in August 2006. This means that the Cabinet approval will not be required in the near future.

Table 2 Selected DNA structures in the Asian region (August 2006)

Country	Year of notification	Structure	Nature of the approval entity
Bangladesh	2004	Two-unit (govt.-govt.)	Ministry of Environment
Cambodia	2003	Two-unit (govt.-govt.)	Ministry of Environment
China	2004	Two-unit (govt.-govt.)	Ministry of Economy
India	2004	Two-unit (govt.-govt.)	Ministry of Environment
Indonesia	2005	Inter-ministerial	Inter-ministerial committee
Malaysia	2003	Two-unit (govt.-govt.)	Ministry of Environment
Philippines	2004	Two-unit (govt.-govt.)	Ministry of Environment
South Korea	2004	Inter-ministerial	Inter-ministerial committee
Thailand	2004	Two-unit + Cabinet (govt.-govt.)	Ministry of Environment
Vietnam	2003	Two-unit (govt.-govt.)	Ministry of Environment

Note: "govt.-govt." for a two-unit model means both regulatory and promotional units are government bodies.
Source: Dang et al. 2006; IGES (ed.) 2005a-b; IGES (ed.) 2006a-c; IGES, CREIA (ed.) 2005; Point Carbon 2006; Pusat Tenaga Malaysia 2006; UNFCCC 2006.

3.2.3 Latin and North American regions

In the Latin and North American regions, DNA structures are more diverse. Out of 14 countries surveyed, four have DNAs with two-unit structures, of which all assigned regulatory functions to the Ministry of Environmental. The DNA Secretariat is either hosted by the Ministry of Environment itself or designated to an independent entity. There have been significant shifts over time, such as in Guatemala. Guatemala started out with a two-unit structure with an ad-hoc inter-ministerial committee but the structure was radically downsized to a single government model in late 2004. In Paraguay, a large two-unit system survived just for six months due to lack of budget. Five countries currently use single government models for their DNA setting, which are all hosted by the Ministry of Environment. In case of El Salvador, there was a discussion between the Ministry of Environment and the private sector to encourage

the private sector to take an initiative in DNA setup. However, the private sector was reluctant to do so because it felt a self-sustainable CDM entity through the sale of CERs was too risky, since the carbon market was yet to be developed (see Figueres and Olivas 2002). Three countries have outsourced the relevant functions to independent entities. It is of note that Panamanian DNA became the first Kyoto Mechanisms entity in the Latin and North American regions to be established as a private, non-profit foundation, which can receive tax-deductible contributions from Panamanian corporations and individuals (see Figueres and Olivas 2002). Costa Rica is also an important example in that the country started with a single government model in 1994 and transformed its DNA structure into a private association to move toward sustainable funding. The association is funded by the entry fees and monthly dues paid by the association founders (see Figueres and Olivas 2002). Inter-ministerial DNAs are observed only in two countries, Brazil and Mexico.

Table 3 Selected DNA structures in the Latin and North American regions (August 2006)

Country	Year of notification	Structure	Nature of the approval entity
Argentina	2002	Two-unit (govt.-govt.)	Ministry of Environment
Brazil	2002	Inter-ministerial	Inter-ministerial committee
Bolivia	2002	Single government	Ministry of Environment
Chile	2003	Two-unit (govt.-govt.)	Ministry of Environment
Costa Rica	2003	Outsourcing	Private association
Ecuador	2004	Two-unit (govt.-indep.)	Ministry of Environment
El Salvador	2002	Single government	Ministry of Environment
Guatemala	2004	Single government	Ministry of Environment
Honduras	2004	Outsourcing	Non-governmental organization
Mexico	2004	Inter-ministerial	Inter-ministerial committee
Nicaragua	2002	Single government	Ministry of Environment
Panama	2003	Outsourcing	Non-profit foundation
Paraguay	2004	Single government	Ministry of Environment
Peru	2002	Two-unit (govt.-indep.)	Ministry of Environment

Note: “govt.-govt.” for the two-unit model means both regulatory and promotional units are government bodies. “govt.-indep.” means a government body is responsible for regulatory functions, while promotional functions are designated to an independent entity.

Source: Michaelowa 2003; Figueres and Olivas 2002; Stadthagen 2006; Chaparro M. 2006; UNFCCC 2006.

DNA structures in the surveyed regions show dominance of the two-unit model, followed by the single government department and the inter-ministerial models. The outsourcing model is not very common and the FDI-piggyback model is not observed so far in the regions. Since governance structures and responsibilities are different in different countries, efficient DNA structures are also likely to vary (see Ellis et al. 2004). As a general remark, however, it is recommended to place a DNA Secretariat at an office that is designated specifically for climate change activities in order to make full use of its expertise. Delegation of Secretariat functions to an independent entity (in case of a two-unit model) or outsourcing of all the relevant functions can be a strategy for flexible funding. However, it depends on the legal structure and the private sector's perception of the CDM in the country whether such outsourcing is feasible or not.

Early experience in Costa Rica, the most successful host countries of AIJ programmes, shows that it is imperative to have a single unit responsible for the solicitation and approval of projects. It must have full decision autonomy and professional, permanent staff. Thereby, it can avoid a blockade through conflicting interests of different ministries that affected several AIJ projects in Eastern Europe and led to high transaction costs for project developers (see Michaelowa 2003). However, it should be kept in mind that potential conflicts of interest may arise between the investment promotion and project oversight functions with the single-unit model under the CDM, where CERs are used as compliance instruments to meet Kyoto targets in Annex B countries (see UNDP 2003). For example, Peruvian DNA, the National Environmental Council (CONAM: Consejo Nacional del Ambiente), has been entrusted with only regulatory functions and promotional functions were assigned to the National Environmental Fund (FONAM: Fondo Nacional del Ambiente-Perú) to avoid such conflicts of interest (see Chaparro M. 2006). Ecuadorian DNA also has a two-unit structure for the same reason (see Figueres and Olivas 2002).

Therefore, countries should have sound understanding of regulatory functions and promotional functions of DNAs and make a clear distinction between them to avoid such conflicts. The next sections discuss those functions and summarize lessons learned from the experience in the surveyed regions.

4. Regulatory functions of DNAs

Host country DNAs are mandated by Marrakech Accords to conduct the following functions:

i) Decide on sustainable development criteria;

ii) Confirm voluntary participation of the project participants;

iii) Confirm sustainable development contribution of the project and issue letter of approval for the purposes of validation and registration; and

iv) Report to the UNFCCC Secretariat on the CDM activities annually.

These regulatory functions must be performed by all DNAs in order to comply with international regulations. This section draws lessons learned from the experience in the surveyed regions.

4.1 Defining sustainable development criteria

It is one of the most difficult and time-consuming issues related to DNA setup to establish sustainable development criteria that are simple to implement. Host country DNAs should develop their own national criteria based on the international CDM rules.

International criteria – limited role of DNAs

DNAs should have a sound understanding of the difference between the international CDM rules and the nationally defined criteria for sustainable development.

Article 12 of the Kyoto Protocol stipulates the principles for CDM projects. Projects shall be validated by independent, formally accredited DOEs on the basis of:

i) Voluntary participation approved by each Party involved;

ii) Real, measurable, and long-term benefits related to the mitigation of climate change; and

iii) Reductions in emissions that are additional to any that would occur in the absence of the certified project activity.

The Marrakech Accords and the rules defined by the CDM EB have elaborated those criteria as follows:

Table 3 Key international CDM criteria

1. Eligibility of project type:
   - Consistency with the UNFCCC decisions
2. Baseline and additionality:
   - Preparation of a quantitative baseline assessment
   - Inclusion of a quantitative description and justification of a baseline scenario
   - Test whether the project would have happened without the CDM
3. Measurability:
   - Quantification of impacts of project interventions on GHG emissions (difference between baseline and project scenarios)
   - Monitoring emissions and reductions over the crediting period
4. Leakage:
   - Provisions for management of leakage
5. Stakeholder consultation

Source: Adapted from Castro et al. 2002.

Most DNAs do not perform a check of the CDM criteria as they (rightly) want to avoid duplication of the DOE's task during validation. However, a DNA might wish that a high share of its approved projects is actually registered by the CDM EB in order to avoid negative impacts of project rejection on the country's reputation. In that case a check of the most critical areas such as additionality and stakeholder consultation can be very helpful. Given that DOEs' check of additionality is rather uneven, which is documented by the increasing share of project subject to a request for review by the CDM EB, DNAs should double-check additionality of projects to avoid that business-as-usual projects are relabeled as CDM. Otherwise, CDM benefits would be limited to the value of CERs accruing to host country entities.

Development of national sustainable development criteria

The key task of a DNA is to develop national criteria to evaluate project's contribution to sustainable development of a host country. Host country DNAs have the prerogative to decide whether the project contributes to achieving sustainable development in a host country or not. Therefore, a host country should develop national criteria and respective information requirements to ensure a coherent, justifiable and transparent assessment in accordance with the national interpretation of sustainable development (see Castro et al. 2002). The key elements are listed in Table 4.

Table 4 Key national elements which should be evaluated

1. Compliance with relevant policy and regulatory regimes

   National scope:

   - Compatibility with national sustainable development objectives including economic, ecological and social dimensions
   - Congruence with the national climate policy and/ or carbon offset strategy
   - Eligibility of the project proposal according to a positive or negative list of eligible CDM activities, technologies and/or sectors, eventually adopted by the host country

   Sectoral scope:

   - Compliance with related political and legal framework
   - Environmental impact assessment in accordance with procedures as required by the relevant sector

   Local scope:

   - Compatibility with local priorities, as started in local development agendas
   - Comments by local stakeholders directly and indirectly involved with the project

2. Financial review
   - Review if project is dealing with a negative cost' mitigation option and, if so, describing barriers that have impeded the project from being implemented
   - Excluding the use of official development aid for project funding
   - Overview of financing structure

3. Technical and institutional feasibility

   Management capacity:

   - Description of the institutional arrangements and each institution's participation in the implementation of the project
   - Previous experience and performance in the field

   Infrastructure and technical capacity:

   - Local availability of qualified human resources
   - Local availability of adequate institutional resources

   Transfer of technology and know-how:

   - Description of the implications for local institutional enhancement
   - Description of the implications for national capacity building
   - Description of technology transfer

4. Special consideration of other environmental and developmental impacts
   - Additional environmental, socio-economic, technical and institutional benefits (and costs) that are considered relevant

Source: Castro et al. 2002.

Even though most of the existing DNAs have established sustainable development criteria, few have been able to define concrete methods to carry them out. This

situation creates great uncertainty for project proponents and interested investors, and the delays may constitute an important transactional cost for the projects (see Morera et al. 2003).

Just the fact that a list of sustainable development criteria have been set up is not enough. Such a list might turn out to be too general, or not completely applicable for the specific nature of real projects. Therefore further specification and selection of sector-specific national or regional sustainable development criteria may be more practical (see Naydenova 2004; Shvangiradze 2005). It is also important to delimit spatial and temporal scope of sustainability assessment. Standard procedures for defining the system boundaries that underlies sustainability assessment of a particular project should be adopted (see Castro 2004).

In order to enhance DNA's capacity to assess sustainable development, it is also important to utilize an existing body which has expertise in sustainable development issues. For example, Georgian Government is considering setting a State Commission of Sustainable Development as the high-level decision-making body on the compliance of CDM projects with the sustainability criteria (see Van Wees and Van Rooijen 2004). Such expertise should be well-integrated into a DNA structure.

A problem looming large in the future is that DNAs have no possibility to enforce promises given by project developers in their Project Design Documents (PDDs) with regards to fulfillment of sustainability criteria. This is due to the fact that LoAs cannot be revoked ex-post and have to be unconditional.

4.2 Establish guidelines for the presentation of projects

Although it is required to draft a proposed project in the format of a PDD to be presented for third party validation and verification, DNAs may also choose to add some sections to the PDD or to design an additional document format for further information on the national criteria (see Van Wees and Van Rooijen 2004).

Standardized formats for a PDD, Project Idea Note (PIN), or Project Concept Note (PCN) can increase transparency and reduce transaction costs.[1]

4.3 Establish national procedures for the approval of projects

This step is to establish procedures for project approval, i.e. confirmation of voluntary participation of the project participants, sustainable development contribution of the project, and issuance of letter of approval. The procedure can be two-step: initial screening and final approval. The initial screening can be done by review of a PIN or PCN. It is not intended to assess the accuracy of the information provided but to assess the completeness and adequacy of the information requested to conduct the final approval process. The final approval, based on review of a PDD, is designed to determine if the project should be approved as a sustainable development project eligible for the CDM. Standardized timeframe for project approval procedure can help increase transparency and certainty.

Most countries in the surveyed regions have proposed a two-step approval procedure. The quick initial feedback, often in the form of a letter of endorsement or no objection, helps project proponents decide whether it would be worthwhile to continue the project preparation process or not at a very early stage. This avoids wasting time and resources to fully develop a project idea that might not be approved at the end. On the contrary, Brazilian or Malaysian DNA only receives projects which were previously validated by a DOE. This requirement can be problematic if there are frequent changes in approved methodologies which may lead to the need to revise a PDD after approval and thus the need to start the whole process again.

The majority of DNAs in the surveyed regions use the contribution of the projects to national sustainable development and confirmation of voluntary participation as their sole approval criteria. A few examine the submitted projects for compliance with the CDM formulation rules (for example of the Latin and North American regions, see

[1] A PIN is approximately five pages long and provides indicative information on the type and size of the project, its location, the anticipated total amount of emission reductions, the suggested crediting life time, the suggested CER price, the financial structuring and the project's other social or environmental benefits. A PCN is approximately 10-15 pages and builds on the PIN. The PCN provides information on the legal status and implementation capacity of the project sponsors and information on the sectoral policies within which the project would operate. The PCN also has a more detailed description of the baseline scenario and a summary of the risk assessment (see Morera et al. 2003)

Morera et al. 2003; Chaparro M. 2006). Most DNAs leave these important issues to DOEs at a validation stage. As a rare example of the CDM formulation rule assessment, Argentinean DNA requests a technical analysis from an external institution once the initial screening of a project is finished. The reviewer assesses baseline, additionality, estimated emission reductions, crediting period, monitoring plan, economic feasibility and technical feasibility. The result of technical assessment will be submitted to the DNA for final decision on project approval (see Chaparro M. 2006).

Other interesting approval criteria are observed in some Asian DNAs. Chinese DNA imposes CER levies on certain types of CDM projects, e.g. 65% of CER revenues from HFC23 and PFC projects, 30% from N_2O projects, etc. The CER price has to be approved by the DNA with a price floor at 7 US$/CER. Lastly, an applicant entity for Chinese DNA approval must be wholly-owned Chinese companies or companies with Chinese majority ownership. Malaysia was the first ASEAN country to set up a DNA. In spite of its early DNA establishment, the number of projects which received host country approvals is limited because of its rigid approval procedure, e.g. strict requirements on technology transfer, no acceptance of unilateral projects.

One of the key elements for attracting CDM investments is the host country's application of quick and transparent procedures for project approval (see Castro et al. 2002). The quicker and more transparent the approval process is, the less transaction costs are incurred to project proponents. However, it should be kept in mind that the level of scrutiny in the international registration process has significantly increased since the setup of the Registration and Issuance Team (RIT) in February 2006.[2] Therefore, a host country DNA should contemplate a careful choice of approval criteria and level of scrutiny.

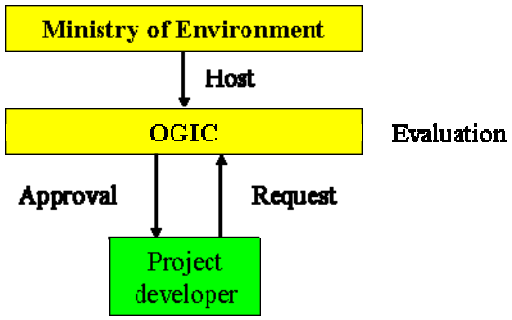
4.4 Examples of DNA structures and regulatory functions

This section showcases structures and regulatory functions of DNAs. As revealed below, DNA structures and regulatory functions differ considerably from one to another.

[2] As of August 2006 seven projects are put under review due to doubtful additionaliy determination.

4.4.1 Guatemala (single government model)

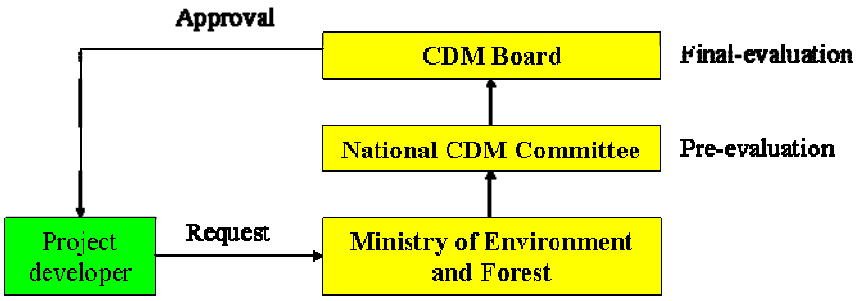
Guatemala has been quite active in the CDM market from its start as it was already involved in the AIJ pilot phase with setup of the Guatemalan Office of Joint Implementation (OGIC: Oficina Guatemalteca de Implementación Conjunta) in June 1997 financed by USAID and the World Bank. OGIC had three members from each government (the Ministry of Environment, Agriculture and Energy) and three from civil society (industry association, NGO umbrella association, university) and thus was an innovative structure. It approved five AIJ projects. However, the DNA was formally notified only in February 2004 as OGIC's structure was apparently too heavy to be sustainable. Since September 2005 (government decree 388-2005), the DNA has a slim structure of just three officials of the Ministry of Environment. For approval, a PDD has to be submitted together with an Environmental Impact Assessment (EIA) and an explanation how the project contributes to sustainable development. The DNA has a good website, albeit in Spanish only (http://www.marn.gob.gt/cdmguatemala/cdm.htm).



4.4.2 Bangladesh (two-unit model: gov't-gov't)

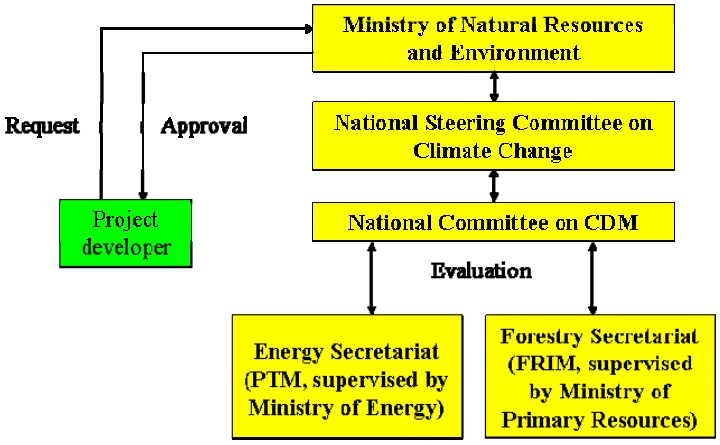
Bangladesh's DNA Secretariat is located at the Ministry of Environment and Forest. The lower tier of the approval structure is the National CDM Committee, which comprises 19 members (8 Ministries and Agencies, financial institutions, chambers of commerce, research organizations and NGOs). The upper tier, known as the CDM Board, gives the final endorsement of the approved projects. The Principal Secretary to the Prime Minister is heading the CDM Board. Project developers submit a PCN to the Secretariat which evaluates it with the assistance of experts and in consultation with the relevant ministry. If the PCN is found to be satisfactory, the developer can submit a PDD. In the evaluation, special attention will be given to stakeholders meeting and EIA reports. The Committee gives its preliminary recommendation to the

Board within 30 days of the Secretariat's receipt of the PDD. There is a good, but non-official website on the DNA operation (http://cdmbangladesh.net/dns_structure.htm).



4.4.3 Malaysia (two-unit model: gov't-gov't)

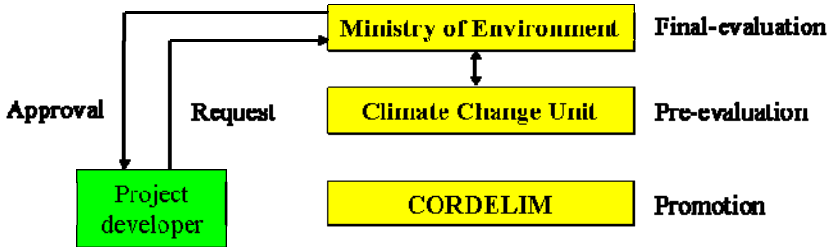
A project proponent has to submit a PIN to the relevant Secretariat of the DNA. If the DNA finds that the proposed project complies with all the national requirements, a conditional LoA will be issued by the DNA. Then the project proponent must develop a PDD and get it validated by DOEs. A final LoA from the Malaysian DNA will be given if the PDD does not deviate significantly from the initial PIN. Malaysian DNA has required a clear proof of technology transfer and a CER buyer before approving projects. Conditional and final LoAs together, the approval process takes 12 weeks.



4.4.4 Ecuador (two-unit model: gov't-indep.)

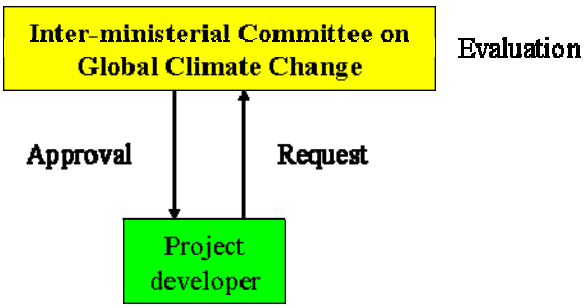
Ecuadorian DNA, set up in 2003, is located at the Ministry of Environment. Project proponents have to submit a PDD which is first checked for completeness and then evaluated by the DNA within 15 working days after consultation with local

institutions and stakeholders. Criteria for assessment are compliance with the legal framework; synergies with development policies and environmental; socioeconomic and technological impacts that should be positive or mitigated, if negative. Letters of endorsement are given within 5 working days for projects that have not yet reached the PDD stage. Promotional functions are designated to CORDELIM (Promoción del Mecanismo de Desarrollo Limpio), a private non-profit organization separated from the government body.



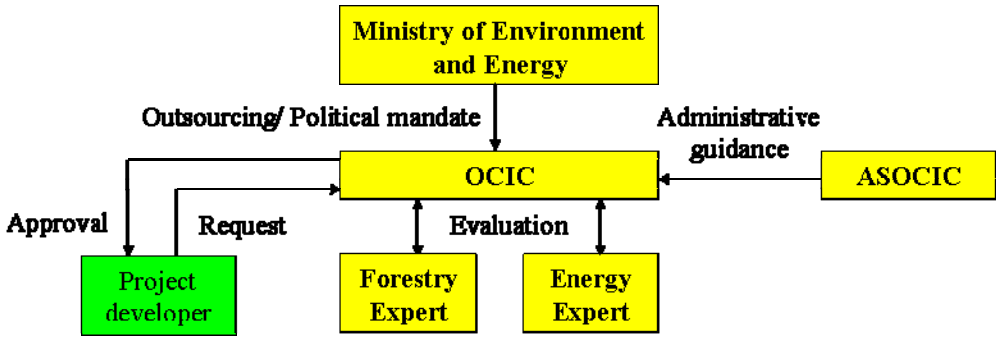
4.4.5 Brazil (inter-ministerial model)

Brazilian DNA is represented by the Inter-ministerial Committee on Climate Change which was established by a Presidential Decree in 1999. The DNA consists of nince representatives from each of the nine ministries and is solely dedicated to project approval work. A project developer must first get a validation report from a DOE because the DNA only accepts a validated PDD. Once the PDD is submitted to the DNA, a final decision on approval will be given latest 60 days after the DNA's monthly ordinary meeting. The project will be approved if six out of nine members vote in favour of it. The LoA must be signed by all Ministers in the nine ministries, which adds transaction costs.



4.4.6 Costa Rica (outsourcing model)

The Costa Rican Office on Joint Implementation (OCIC: Oficina Costarricense de Implementación Conjunta) acts as a DNA. OCIC was established in the context of the national AIJ programme in 1995. After ratification of the Kyoto Protocol in 2002, a private association of stakeholders, the Costa Rican Association of Joint Implementation (ASOCIC: Asociación Costarricense para Implementación Conjunta), was established to move toward sustainable financing. Founding membership was offered to main national utilities from the public and private sectors, as well as the Forestry Chamber and other public and private forestry entities, comprising a total of 16 associates (see Manso 2003).



4.5 Towards efficient DNA approval systems

The key question regarding DNA regulatory functions is how to expedite the approval process without losing quality of approved projects. First of all, the experience in the surveyed regions shows that it is essential to utilize existing expertise in climate change and sustainable development, e.g. integrating climate change or sustainable development units into DNA structures. Second, uniform formats for documents required for a host country approval greatly increase transparency and expedite the approval process. Third, a two-step approval procedure, with a quick initial feedback and final approval process, can avoid wasting time and resources to fully develop a project idea that might not be approved at the end. This reduces transaction costs both for the DNA and project proponents. Fourth, transparent guidelines and approval criteria and timeframe must be clearly announced. In particular, sustainable development criteria, including technology transfer requirements, have been a major challenge in project approval. Such criteria tend to be too general to be applied in a specific project case or they are applied in an ad-hoc manner. Sustainable

development criteria at a sector level, rather than just a general clause, may help to make the approval process much more transparent and efficient. Lastly, but not least, a host country DNA is encouraged to build capacity to properly assess additionality and stakeholder consultation elements in its approval process.

5. Promotional functions of DNAs

DNAs may choose to perform promotional functions, which are optional and not mandated by international rules. This section gives an overview of promotional functions and details several key promotional functions that host country DNAs could perform to become more proactive than approval-only DNAs.

5.1 Overview of promotional functions

Promotional functions should be designated according to the specific needs and institutional maturity of the host country. A non-exhaustive list of such functions is given in Table 5.

Table 5 Promotional functions of DNAs

Functions	Desired outputs
Information database	Project portfolio Partner matching data Appropriate technologies data Data CD-ROM
Information dissemination/ training	Website development Newsletter Seminars and training manuals
Policy development support	Regional networking Consensus building Policy documents Coordination with other programmes promoting sustainable development
Project development support	Project CDM packaging Project documents/updates Standardized methodologies Baseline data collection Financial standards
Operational entity support	Capacity building seminars Domestic DOEs
Credit sharing support	Model contracts Negotiation capacity building
Marketing	Website hosting Road-shows One-stop PIN shop Participation in carbon fairs Memoranda of Understanding

Source: Adapted from Michaelowa 2003.

Expanding DNA's activities to include identifying potential CDM projects and making this information available to potential investors could help increase the financial viability of a DNA (see Ellis et al. 2004). However, as is discussed above, conflicts of interest may arise if the same organisation is performing both promotional activities and providing host-country approval of these projects. A two-unit model can be an option to avoid such conflicts.

Several DNAs in the Latin and North American regions have actively performed promotional functions. However, it requires considerable efforts just to establish appropriate project approval criteria, implement an efficient and transparent approval process, and educate all involved stakeholders in the requirements of project review. Once a DNA has demonstrated that it operates effectively, it will be much better positioned to turn to outside donors and investors for additional support for project outreach, identification, and development (see Findsen 2005). It is impossible for a newly established host country DNA to perform all the promotional functions besides regulatory ones and it is not necessary to do so (see Castro et al. 2002). Georgia and Armenia, for example, are first focusing on the institutional setup for the project review function, then the development of sustainable development criteria, and then much later the governments will get involved in outreach, project pipeline development, and consolidated baseline studies. Several other FSU countries also recommended that technical assistance activities for DNAs should be kept simple in the first years and that they should be implemented in phases. Any assistance should start with helping the countries develop their DNA structures and then afterwards focus on activities related to project development and outreach (see Findsen 2005).

5.2 Examples of promotional functions

DNAs in the Latin American region have the richest experience with promotional functions. Two case studies from the region are given below.

5.2.1 Peru

A notable example is FONAM in Peru, a counter-part of CONAM which takes regulatory functions as a Peruvian DNA. FONAM is an environmental fund created by congress bill, but ruled under the private law. It is a non-profit institution of public and social interests, with the objective to promote and support the financing of the

public and private investment in environmental projects, as well as to support the financing of the policy and environmental management of the country. Among the main services that FONAM offers are:

1. Identification of projects that can be eligible within the CDM framework;
2. Training and advising project developers in the preparation of CDM projects, through all the phases of the project cycle;
    a. Preparation of the initial document, a PIN and eligibility analysis of the project;
    b. Elaboration of a PDD, including the baseline study;
    c. Elaboration of the official file for the presentation of the project to the DNA (CONAM), for obtaining the host country approval;
    d. Support with socialization of the CDM project among the communities – stakeholders in the project area of influence;
    e. Advising project developers in the process of validation and registration before the CDM EB; and
    f. Advising on the emission reduction monitoring and the verification process.
3. Advising the competent institutions in the development of suitable legal frame for the accomplishment of CDM projects;
4. Support on the financial structuring of CDM projects, serving as a bridge between national and international financial institutions and the national economic agents or project developers; and
5. Promotion of Peruvian CDM project portfolio at the international level, serving as a nexus between the CER buyers and the Peruvian CDM project developers (see FONAM 2006).

Backed by a wide variety of professionals, FONAM is capable of guiding project proponents through the whole CDM process. This helps reduce transaction costs and risk of project rejection. Although the FONAM website is well-structured, an obvious drawback is that it is available only in Spanish except for several documents in English (http://www.fonamperu.org/default.php). It makes the country less-competitive in the international carbon market.

5.2.2 Ecuador

Another good example is the Ecuadorian CDM promotion office, CORDELIM. Is a non-profit organisation with a board of directors from the Ministry of Environment, Ministry of Energy and Mines, National Industrial federations, National federation of Agriculture and the CEDENMA, an Ecuadorian federation of NGOs engaged in environmental issues (see CORDELIM 2006). Its primary goal is to provide information and help in technical, financial and socio-economic issues through the CDM project process.

CORDELIM website, well-organized and most parts available in English, lists variety of CDM experts (in PDD and methodology development, environmental and social impact assessment, legal and insurance issues, project finance, etc.) so that project proponents can easily find where to get assistance in CDM project development (http://www.cordelim.net/cordelim.php?c=465&lang=EN). The website also describes potential investors such as national CDM procurement programmes, multilateral carbon funds, carbon brokers, with description of their purchase preferences, availability of calls, contact details, etc. Another example of partner matching facilitation is that the website displays a whole picture of the Ecuadorian CDM project portfolio with information on project development stage, estimated CERs, emission reduction negotiation status, contact details, etc.

Although the showcase of available CDM projects greatly helps partner matching, it should be noted that such a list might give an impression to potential project proponents and investors that the projects on the list are promised to receive host country approval. A host country should be careful in doing so if the DNA is structured as a single-unit model, which might cause conflicts of interest between regulatory and promotional functions.

5.3 Moving forward to proactive DNAs

Promotional functions are optional but essential tools especially for countries that are not able to automatically attract foreign investors. As is mentioned above, these functions should be designated according to the specific needs and institutional maturity of a host country. This section details some important promotional functions

that host country DNAs may choose to perform in order to make a step forward to become more proactive.

Provision of a good website

As a first step, a DNA is strongly encouraged to develop and maintain its website. A simple but continuously updated website should feature its DNA structure, approval criteria, description of the approval process, projects approved and key CDM stakeholders in the country. All the information on the website should be available in English. However, a survey on DNA websites by Gupta and Michaelowa (2005) found that only a minority of host country DNAs has websites and that most of them are not well structured. Often, a website has been set up under a donor-funded programme and is no longer updated once donor funding ceases. The CDM market leader countries China, India, Brazil and Mexico have the most up-to-date websites, but some smaller countries like Egypt and Morocco also show a good structure.

Participation in carbon fairs

A DNA should participate in the two key world carbon fairs: the Carbon Markets Insights and the Carbon Expo. Networking and marketing at carbon fairs are one of the most essential and effective promotional tools for a host country DNA. The World Bank supports DNA participation in the Carbon Expo.

Conclusion of Memoranda of Understanding

Memoranda of Understanding (MoUs) are aimed to establish long-term cooperation in the field of the CDM. Investor country DNAs seek to conclude MoUs with host countries that have high potential for realizing emission reductions (see Naydenova 2004). Host country DNAs should closely follow these developments, especially in countries with which they have strong economic and cultural ties so that they are not left behind. This was successfully done by India which was originally to be excluded from CERUPT, a Dutch CER procurement programme, but lobbied for its inclusion and successfully got six projects through the pre-assessment, the highest number of any country (see Michaelowa 2003). However, it should also be noted that the role of MoUs has been decreasing with a maturing CDM market.

Coordination of project portfolio and partner information

DNA assistance for partner matching can reduce project search costs. This can be done by developing database on project portfolio and hosting a one-stop PIN shop, which offers workable CDM project ideas to potential investors. In addition, such coordination could also increase possibility of bundling of potential projects. So far, there has not been good coordination among potential project proponents spreading around a country, e.g. a. typical case of small-scale renewable energy projects. If a host country DNA can be a coordination body for bundling, such projects become more attractive to investors. For instance, an Indian NGO, Women for Sustainable Development, is coordinating the activities of small-scale CDM project proponents, providing them technical assistance, and assisting in the sale of the emissions reduction credits from these projects (see IGES 2005b).

Capacity building on CDM formulation rules

Local project proponents that are not well informed about the CDM run a higher risk of methodology or PDD rejection by DOEs or the CDM EB compared to bi- or multilateral investors with high-quality consultants (see Jahn et al. 2004). In order to make local project proponents more competent, host country DNAs can organize capacity building seminars on the CDM formulation rules.

Baseline data collection

Data gathering for baseline emissions calculation is usually intensive and incur high transaction costs. Now that many baseline methodologies are approved and they provide clear views on data requirements, a host country should analyze its CDM potential and set a priority list for baseline data collection. DNAs can centrally provide some key data, among which the most important is grid emission factors for calculation of operating margin and build margin. For example, India has successfully developed a database for grid emission factor calculation and the database is currently maintained on the website of Central Electricity Authority (http://www.cea.nic.in/).

Establishment of financial standards

The awareness of the CDM opportunities among financial institutions is very low in most non-Annex-B countries. A general practice and a concerted action for financing projects do not exist in such countries. Standardized risk assessment procedures are

indispensable for potential investors to rate and rank CDM projects and thus dismantle local investment barriers (see Jahn et al. 2004). If a host country wants to be more proactive, e.g. by taking full opportunities of unilateral CDM projects, a new investment scheme for unilateral CDM projects is essential. Due to the lack of finance, unilateral projects tend to employ older technologies than ones employed in bi- or multilateral projects, hence prone to problems with additionality. To overcome this situation, a host country DNA may act together with financial institutions to raise financial institutions' awareness of the CDM and establish financial standards in the country.

Support of domestic entities' application for DOEs

Currently, majority of DOEs are based in Annex-B countries. This means project proponents in non-Annex-B countries have to rely on the expensive services of foreign DOEs for validation, verification and certification. Transaction costs associated with DOE services could be lower if domestic project proponents have access to a local DOE (see Jahn et al. 2004). In addition, domestic DOEs can also solve language problems in communication with domestic project proponents. A host country DNA may assist application for DOEs by national entities by holding capacity building seminars or giving advices upon request. However, a country should carefully think whether a local company can fulfill the cumbersome requirements of a DNA and actually gain a foothold in the market. Currently, the validation and verification market is very concentrated and there is a high risk of not being able to enter the market even if one has successfully been accredited by the CDM EB.

All these activities require a budget. This could be raised through project submission fees but host countries have historically been reluctant to introduce such fees. This may be due to the fact that earmarking of fees is not possible. Moreover, countries fear a competitive disadvantage due to the introduction of fees. So far, only Philippine and Malaysian DNA charge approval fees. With €150, the Philippine fee is purely nominal. In addition, Thai DNA has proposed a review fee of about €300 in its draft approval procedure (see ONEP 2006). Also, a host country should consider its CER supply potential when considering the choice of promotional functions. It does not make a good sense for a host country with limited CER supply to have a number of promotional functions, which may just harm its financial sustainability.

6. Conclusions

Essential questions to make a host country DNA more efficient are i) how to expedite the approval process without losing quality of approved projects, ii) how to attract foreign investors, and iii) how to become financially sustainable.

Regarding the first question, the experience in the surveyed regions show the necessity of transparent and consistent approval system based on expertise of existing climate change or sustainable development units, uniform formats for necessary documents, a two-step approval procedure, standardized approval timeframe, sector-specific sustainable development criteria, and thorough assessment of additionality and stakeholder consultation elements. A DNA structure is also an influential factor. The single government model can allow for quick project approval and may better suit when the country lacks of financial and human capacity. However, potential conflicts of interest may become a concern. The inter-ministerial model is usually perceived as a cause of cumbersome and slow approvals. Outsourcing can be an option to avoid bureaucratic blockage, but its feasibility depends on the country's legal system and the private sector's perception of and capacity for the CDM. The two-unit model looks the most favorable DNA structure and has been dominant in the surveyed regions.

Foreign investment plays a core role in the CDM project finance and it is important for a host country to attract such investments. However, a host county at an early stage of institutional development should keep it in mind that operationalization of promotional functions is likely to put an additional significant burden. It is not recommended to expand its activity scope to promotional functions until the host country has established a full-fledged approval system and an initial project pipeline. Although promotional functions are not mandatory, they are essential tools for host countries to become more proactive in the international carbon market. The key functions include i) provision of a good website, ii) marketing at carbon fairs, iii) conclusion of MoUs, iv) coordination of project portfolio and partner information, v) capacity building on CDM formulation rules, vi) baseline data collection, vii) establishment of financial standards, and if the country has a significant CDM

potential viii) support of domestic entities' application for DOEs. Those functions are to be chosen based on needs and resource availability of the host country.

In order to become financially sustainable, a host country DNA first has to strike a balance among the CER supply potential, related fee volumes, and choice of DNA functions. Also, it is important to consider a DNA structure which may be able to effectively achieve financial independency. Countries with sufficient financial resources from governments tend to establish their DNAs within the government. Otherwise, provided the private sector has capacity and willingness to take the role, DNA functions can be outsourced to private entities in order to widen the range of financing options.

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