

Chapter 5

CDM Options for Egypt

Introduction

This Chapter is compiling the major outputs of the previous Chapters and giving an overview to Egypt's strategy elements regarding the involvement in CDM processes.

The Chapter summarizes the socio-economic costs and benefits of CDM, the matchmaking between offset potential, international market and domestic prerequisites. It also provides analysis to the alternatives of the implementation options under CDM strategy. The interaction between the resources, institutional system and activities to generate specific outputs from Egypt's participation in CDM had been outlined in the form of a guide to an action plan. The plan is based on a series of typical modules of activities per each output and covers a period of three years. It is expected that the CDM unit recommended in Chapter 4 for CDM activation, will make use of this guide to formulate the detailed action plan for approval by the steering committee under EEAA.

5.1 Socio-Economic Costs and Benefits of CDM

Egypt as a Non-Annex I country can benefit directly from participation in the CDM. Joint implementation of CDM projects would realize mutual benefits for Egypt as host country and for Annex I partner as investor. However, there will be a cost for both of them to cover the institutional prerequisites and the implementation needs.

5.1.1 Rents to Host and Investor Countries

In general, host countries will earn environmental, technological and economical benefits from participation in the CDM projects implementation. Also, the CDM partner from Annex I country and the investor, will earn certified emission reductions of GHG gases at a cost lower than implementing such reduction value in his domestic possible projects. This is the main incentive introduced by the CDM to the investors committed to pre-quantified GHG reduction amounts as Annex I countries. This fact is well elaborated as developed countries are mostly operating at better efficiency than those operating in developing Non-Annex I countries.

5.1.2 Benefits to Egypt

Benefits for Egypt may include local environmental benefits, technology transfer benefits and economical benefits. The local benefits will be elaborated in the present section, while the economical benefits will be declared on the macro-level only. The micro-level economical benefits will go to local firm sharing in the CDM.

Local Environmental Benefits

The CDM projects will contribute to Egypt's environmental benefits through implementation of CDM projects (see Chapter 6). This will cause a reduction in the local pollutants emissions, in particular the reduction in particulates and sulfur emissions.

Benefits from Technology Transfer Effects (Short & Long Term)

The CDM will contribute to technology transfer to Egypt as a host country through:

1. Renewal of important infrastructure such as power stations, transport systems, sewage treatment plants, and thermal operation units. Energy efficiency projects, natural gas technologies, and renewable energy projects etc. are directly improving

the technological capabilities through introducing the state of the art technologies and advanced training in the short and long term.

2. Transfer of appropriate clean and reliable technology strengthens the Egyptian industry. CDM investments may serve as a trigger to the implementation of advanced technologies in other related fields.
3. Capacity building in clean technologies may allow Egyptian suppliers and consultants to export equipment and services for CDM projects in the region, which may strengthen the technical capabilities of the personnel and brings economic benefits as a long term planning.

Benefits to Egypt's Economy (Macro-Level)

The CDM project will contribute to Egypt's economy through:

1. Increased project profitability as certified emission reductions can usually be sold at a profit.
2. Increase of foreign investment and source of foreign currency for Egypt.
3. CDM investment project may become a point of departure for other foreign investments, which adds capabilities to the Egyptian economy.
4. Capacity building in clean technologies.

5.1.3 Risk Factors and Barriers to Penetration

Risk factors and barriers to penetration of both host CDM partners and foreign investors can be summarized in the following:

- The whole CDM projects implementation cycle with its main component of the issuance of certified emission reductions is a new issue. It requires a lot of work and experience to be settled in the international practice. Until international rules and modalities are not settled, entering this area will constitute a risk for partners.
- The CDM as a new issue requires a public awareness in both governmental institutions and the private sector and needs a suitable legislative and institutional setting.
- According to the analysis encountered in Chapter 3, the international demand for GHG offsets will remain low until the first commitment period. Also, uncertainty expected in behavior of USA as buyer and China, Russia and India as sellers implies risks in the market.
- According to the analysis encountered in Chapter 4, bureaucratic hurdles for investors in CDM increase transaction costs and may exhaust the foreign investor.
- Also, there appears to be a considerable lack of knowledge about CDM activities and climate change in general within most of the technical consulting and financial auditing firms in Egypt.
- Other barriers lay in technical knowledge, limited human resources, information and awareness.

5.1.4 Costs for Egypt

Costs for Egypt to promote the country's participation in the CDM market lie in costs for capacity building, information dissemination and awareness raising. Also the institutional body needed to handle CDM projects such as the national CDM committee and the CDM unit constitute additional costs for the government. Also the elaboration of national CDM criteria and a legislative framework will bind considerable resources. Therefore, Egypt should build wherever possible on existing work and institutions to make optimum use of synergies with parallel activities and to keep the costs for CDM low.

5.2 Matchmaking: Offset Potential, International Market and Domestic

Prerequisites

According to analysis of Egypt's potential for CDM in Chapter 2, the analysis of the international offset market in Chapter 3, assuming 100% implementation rate of the project types considered, Egypt can sell up to 2.4 MtC annually, achieving 18.7 million US\$ each year over a lifetime of 10 to 15 years. This analysis relies on available data only, neglecting sectors/technologies and restricting the replication potentials. Therefore, the estimated potential for CDM projects in Egypt may be regarded as a lower boundary, the actual GHG mitigation potential in Egypt is assumed to be considerably larger.

5.3 Elements of a Strategy for Egypt's Participation in the CDM Market

The following the key findings of Chapters 1 to 4 will be translated into a draft strategy for CDM in Egypt.

5.3.1 Objectives of CDM Strategy for Egypt

The present draft strategy for CDM has two main objectives:

- To allow Egypt to participate actively in the international GHG offset market and to offer attractive and competitive CER products.
- To derive the highest possible benefit from the implementation of CDM projects in Egypt.

To be attractive and competitive, Egypt's CER products should have a price on the international level or below, and CERs should have a high probability of being actually generated and the credibility and the image of CERs from CDM projects in Egypt should be high.

Benefits from CDM project implementation result from their contribution to the socio-economic development and the improvement of environmental conditions in Egypt. In turn, the participation in CDM should be associated with the lowest possible costs for Egypt.

Proposed elements of a strategy for CDM in Egypt are sketched that result from the synthesis of Chapters 1 to 4. This draft strategy and the proposed action plan are meant as an input for the future strategic planning for CDM in Egypt within the future institutional framework.

5.3.2 Elements of a CDM Strategy for Egypt

Table 5.1 gives an overview on the main components of a National CDM Strategy. Components to be considered in the strategy include the level of involvement of the Egyptian Government in the CDM market, the design and line-up of the domestic framework for CDM, the type of international investor targeted and the priorities in sectors and technologies for CDM projects. The full strategy will be composed from elements of each of these components.

I. Degree of Involvement in CDM

The first component is the degree of Egypt's involvement in the CDM process on the short and medium term. In this issue, a trade-off has to be found.

On the one hand, Egypt has a significant potential in various sectors for attractive CDM projects, which are competitive on the world market (Chapters 2, 3 and 6). Also, Egypt enjoys a relatively friendly investment climate, political stability and skilled workers

compared to other CDM countries (Chapters 3 and 4). Given these favorable conditions, the Egyptian government should take a strongly pro-active role to benefit fully from early mover advantages of CDM and to occupy an important market position.

Table 5.1: Overview on the Main Components of a National CDM Strategy for Egypt (priority areas highlighted)

I. Involvement of Egypt in CDM	Wait and See	Moderately Pro-Active	Very Pro-Active			
II. Domestic Framework	CDM Committee and CDM Unit	Role of governmental bodies	Role of Non-Governmental Bodies			
III. Type of Investor	Classical Donor Institutions, Development Aid	Governments	Private Companies and Carbon Funds			
IV. Sectors / Technologies	Power Production	Industry	Transport	Residential and Commerce	Waste	LULUCF
Energy efficiency	X	X	X	X		
Co-generation	X	X		X		
Fuel switch	X	X	X	X		
Renewable	X	X		X	X	
Rail electrification			X			
Waste digestion					X	
Afforestation activities						X

Shaded areas: Focus of strategy

On the other hand, CDM and the Flexibility Mechanisms of the Kyoto Protocol are still subject to uncertainties. The general framework of rules and procedures regarding GHG emission reduction emerged both internationally and nationally but the (often important) details still need to be clarified (Chapter 1). The withdrawal of the US from the obligations of the Kyoto protocol reduces the expected demand significantly (Chapter 3). Foreign investment in Egypt still faces numerous barriers and is associated with risks (Chapter 4). These facts dictated to follow a more prudent approach, to prevent Egypt government from spending too many resources to enter into a market to which still many uncertainties and risks are tied.

We, therefore, recommend following a moderately pro-active approach, where early minimal setting enabling CDM in Egypt is build up and early experience is made with the implementation of an actual CDM pilot project in Egypt, but at minimal cost for the Egyptian government. The approach should also allow for flexibility. The constant monitoring of the Kyoto process and the international offset market allows to detect changes in the market and to adapt the CDM strategy accordingly.

II. Design of Domestic Framework

This choice of a moderately pro-active approach translates directly into the role and size of institutions building the domestic framework for CDM (see also Chapter 4).

The adequate institutional setting required for enabling CDM in Egypt would be to put into place transparent and efficient procedures for the approval of CDM projects and for the transfer of CERs by the Egyptian government. This includes the designation of a National Committee for CDM responsible for the evaluation and approval of projects and the definition of national criteria for project approval.

Other tasks related to the facilitation of CDM and to the CDM project cycle such as information dissemination, project verification and certification can be carried out by both governmental and private entities (Chapter 4). These additional tasks should be fulfilled using whenever possible existing institutions, networks and skills. As foreign investors generally prefer private companies as project partners, the private sector will play a very important role in CDM in Egypt, being it as project hosts, in project design and implementation or even in verification and possibly certification of emission reductions. This match very well with Government of Egypt policy to encourage private sector participation within all development plans.

III. Type of Investor Targeted

Different types of investors exist for CDM projects with different interests. As part of the CDM marketing strategy, Egypt should have a clear picture on who the main international investors are, what their demand for CERs is and what competitive CDM products Egypt can offer. Table 5.2 gives an overview on potential investors (buyers) and their preferred project type (product).

Table 5.2: Product-Buyer Matrix for CDM in Egypt

Characteristics of CDM Projects	Classical donor Institutions, Development Aid	Governments	Private Companies and Carbon Funds
Projects with strong development and image component	*	*	*
Projects with high return and low risk		***	***

Indication of medium term market potential: *** large, * limited.

A first group of international investors in CDM are investors that are in the first place interested in projects with a high contribution to sustainable development in Egypt and in projects, which transfer a positive image to the investor, and as a side effect, generate Certified Emission Reductions (CERs). They include classical donor institutions and development aid, some governments, and to a lesser extend private company image campaigns.

This type of investors seeks projects with a high development component and which result in a positive image of investor. These projects include renewable energy, energy efficiency and co-generation in rural areas, for small and medium size enterprises and for public institutions like hospitals, hostels and public housing. Also, projects which contribute to transport infrastructure, waste management and agriculture may be attractive for those more “donor”-type of investors. However, these projects will concentrate more on rural areas and small to medium size companies. Here, governmental institutions may play an important role in facilitating these projects. The market for this type of projects is more a side arm of classical donor activities and may be important during the build-up of the CDM market, but is in the medium term rather limited. This market will also depend on future solutions for the issue of restricting the use of ODA for CDM.

The second group of international investors is those who are in the first place interested in projects with a high financial return, which generate CERs at the lowest possible risk. They include private companies, carbon funds and governments seeking compliance at low cost, e.g. the Dutch public tender of GHG emission reductions, or brokers buying

CERs for trading. This market will be highly competitive and considerably larger than the “donor” type. International partners will only invest, if transaction costs are low. This will require a lean and efficient procedure for CDM project approval (see Chapter 4).

Larger renewable energy and energy efficiency projects in energy generation and industry may be of the highest interest to these investors. In the medium term, this group of commercial investors is expected to form the main market for CDM.

IV. Priority Technologies and Sectors

As shown in Chapters 2 and 6, the following technologies are promising for CDM:

- Energy efficiency.
- Co-generation.
- Fuel switch.
- Renewable energy.

Mainly in power production, industry and transport. Waste digestion might be another promising area for CDM projects in Egypt. A national strategy might focus on these technologies, leaving it open to investors to select also additional areas for CDM projects.

5.4 Proposed CDM Action Plan

This section proposes an action plan for Egypt’s participation in CDM process, which translates, to the best possible, the strategy into actual actions to be taken and financed. The proposed action plan covers the next 2-3 years. Its success should be monitored and evaluated regularly and modifications/corrections should be foreseen.

This proposed plan reflects the NSS teamwork thoughts regarding the actions for activating the process. Any further details or modifications will be of course in hands of the official decision makers and stakeholders. It will need further political decisions to initiate and develop different actions under the proposed plan. The final official action plan should be prepared by the recommended CDM unit for approval by the CDM committee and EEAA Board of Directors.

The guide for the action plan is based on nine modules of activities, which will lead to five measurable outputs over the next three years.

The modules of activities are mainly extracted from the analysis provided in chapter 4 for the domestic prerequisites.

5.4.1 Major Outputs of the Action Plan

It is expected that Egyptian CDM action plan will lead to the following specific outputs:

- AN OPERATIONAL CDM UNIT, including the necessary institutional and legislative framework.
- PREPARED CDM PROJECT PACKAGES; this ‘shopping list’ includes all the necessary documentation for soliciting investments. The package will be dynamically overviewed and updated.
- IMPLEMENTATION OF THE FIRST PILOT PROJECT, this will be the main milestone demonstrating the project cycle from identification and financing to the issuance of CERs and promote learning by doing for all parties involved. A successful CDM pilot project is a strong argument for investors in favor of Egypt as a CDM country.

- A PUBLISHED ANNUAL EGYPTIAN CDM REPORT is an annually published policy report on the position of Egypt in the international GHG market, the status of the domestic institutional and legislative setting, a recommended project pipeline and results of implementation (success stories).
- AN ANNUAL TRAINING PACKAGE ON CDM ACTIVITIES, the package is annually designed and implemented to cover the needs of CDM implementations at the different national and private institutions.

5.4.2 Modules of Activities

The action plan consists of Modules. A Module of activities is a set of logically arranged actions towards the achievement of a certain step, which will be linked with other modules to reach a specific output of the action plan. In the following, typical modules forming the action plan are proposed. For each of the nine modules, an indication of the required resources is given.

Module 1: “Institutional Setting”

It is recommended to establish a subcommittee under the existing inter-ministerial national steering committee on climate change in EEAA or to establish a completely new steering committee for CDM at EEAA. The second suggestion of establishing a new steering committee for CDM directly under EEAA and not under the committee of climate change may have two advantages. The first, it will have a higher institutional status which will give it higher power in handling its responsibilities, and secondly, it is involved in the more economic and technical issues of CDM projects implementation rather than issues related to climate change which are more related to the state plans. The CDM Committee would be supported by the CDM unit, as described in Chapter 4. The possible role of the National Committee for CDM in the implementation of the action plan is described in Section 5.5.

For the first year, the CDM Unit is suggested to consist of:

- A full-time executive director.
- A secretariat consisting of an expert for training and public relation including mass media, an economist, preferably with technical background, and two experts for technical and methodological support and project evaluation.

The direct human resources needed for the CDM Unit itself for the first two years are estimated within 3-5 staff. They are supposed to be assigned primarily by EEAA. After initiation of CDM projects for implementation, it is expected to be self-funded by local and foreign partners of CDM.

Module 2: “ Establishment of National Criteria and Baseline for CDM”

Development and continuous revision of national sustainable criteria for CDM projects (along the lines of economic, environmental and social criteria) is an important issue. They need to be approved by the national CDM committee. Also, research might be carried out to define national standardized baseline for certain project types, especially smaller ones.

For transparency and neutrality of the outcome, this module must be funded by national governmental fund.

Module 3: “ Awareness Raising”

The following is the suggested list of activities required for awareness raising:

1. Definition of the targeted groups, e.g. technology suppliers for CDM and consulting engineers as indicated in the analysis given in Section 5.3 and registration of interested parties in database.
2. Communication with the key players through networking and publications and seminars.
3. Participation and presentations in existing conferences, industry fairs and other suitable forums (industry associations, NGOs etc.). Organizing between 2 to 3 workshops annually for investors and candidate project hosts for promotion of GHG reduction through CDM. Emphasis will be laid on the private sector and the use of existing structures.

The CDM unit will mandate most activities to specialized companies, governmental and non-governmental institutions, making optimal use of existing skills, manpower and networks.

Resources needed for the CDM unit staff is supposed to be allocated by governmental contribution. Funding of activities and campaign is expected to stem from governmental contributions (also in kind), foreign donations and contribution by CDM customers.

Module 4: “Technical Capacity Building”

1. Consulting engineers, representatives from private enterprises and other stakeholders receive training in key GHG abatement technologies, CDM methodologies and project cycle.
2. Define steps to assist local firms in developing capacity for project validation, verification and certification.
3. Develop a database for local firms having capacities for CDM project implementation, validation and verification.
4. Resources are expected to be provided through the available climate change donor funding, later fees will cover the training costs. These activities are to be carried out by existing institutions such as training university centers and CDM technology suppliers.

Module 5: “Investor Relations and Monitoring of International Offset Market”

1. Continuously monitoring of the size, prices and characteristics of the international GHG offset market.
2. Continuously monitoring of the international and national GHG related regulations and procedures such as the UNFCCC, GHG taxes and levies, trading systems etc. to early identify demand for CERs.
3. The public relation expert will handle the investor relations.
4. Development and continuous update of a short list of possible foreign investors.
5. Publishing flyers and articles for the promotion of CDM projects in Egypt.
6. Establishment of communication channels with Commercial Attachee’s in the Egyptian Embassies and the Ministry of Foreign Affairs.
7. Presentation of CDM projects opportunities in Egypt at international conferences e.g. by holding side events at the COPs.
8. Pro-active approach to possible investor institutions, such as PCF, the Dutch Center CERUPT program, commercial carbon funds and carbon brokers.

The investor relation activities will be carried out in close cooperation with existing investment institutions such as GAFI, FEI. Funding of activities is expected to stem from governmental contributions (also in kind) and foreign donations.

Module 6: “Project Package Preparation”

1. This module consists of establishment of feasibility studies for 1-3 most promising CDM project candidates in Egypt. The studies include the assessment of the technical and financial project feasibility, the evaluation of the eligibility under CDM, the evaluation of environmental and socio-economic impacts and the assessment of the proposed financing schemes.
2. The studies should be carried out in close cooperation with potential investors and candidate project host.

Resources for project package preparation are suggested to be funded by potential investors and candidate project host while supported by governmental in kind contributions.

Module 7: “Project Pipe-Line and National Registry”

1. Preparing a list of candidate projects for registration including all supporting calculations showing their validation as CDM projects.
2. Regular submission of the list of projects to the steering committee for approval. It is possible that the steering committee will contract an independent local entity to support its decision.
3. Build-up and operation of a national registry of approved CDM projects in Egypt. To improve transparency, this database should be open to the interested public (e.g. on the Internet).

For transparency and justice, this module must be funded by national governmental fund.

Module 8: “CDM Handbook for Egypt”

A CDM Handbook for Egypt’s possible projects for host and investors with basic information on technical, institutional and legal prerequisites, explanation of baseline and additionality methodologies, cost and emission calculations, the CDM project cycle modes and sources of financing, including addresses and contracts should be elaborated. The handbook should be written at the time when the basic setting and outline of CDM rules (and eventually international CDM guidelines) exist.

This module can be funded by all stakeholders of the CDM activities.

Module 9: “Evaluation / Feedback / Corrections”

Module 9 assures quality control of the national CDM activities:

1. All outputs of other modules are to be reported to a central coordination office in the CDM implementation unit.
2. The performance indicators of all the modules are to be developed.
3. A comparison on regular intervals of the performance indicators will lead to a fair evaluation of the whole components of CDM system. This allows to keep track of the performance of the CDM unit and to assess the degree of fulfillment of goals.
4. Relevant corrections have to be suggested by the coordination office and feed-backed to the National CDM committee.

For transparency and justice this module must be funded by national governmental fund.

5.5 Role of the National Committee for CDM in the Implementation of a CDM Action Plan

The national committee for CDM is expected to recommend the policies, submit them to the EEAA committee for approval and forming the CDM implementation unit and follow up of implementation to cover the following tasks:

1. Preparation of the scope of work and putting rules for current work of the CDM-Implementation Unit.
2. Studying and reviewing of Egypt's NSS for preparation of the CDM project packages.
3. Approving the plans, follow up the implementation of the CDM activities broken down in the modules above, while the implementation work is expected from the CDM implementation unit.
4. Suggesting the legislative framework required for CDM implementation facilitation.
5. Preparing intergovernmental agreements (memorandum of understanding) with possible investor countries or institutions for the implementation of CDM projects.

5.6 References

The present Chapter is highly dependent on compilation of the previous Chapters outputs and references.