



# Clean Development Mechanism

## Egypt: Country Profile

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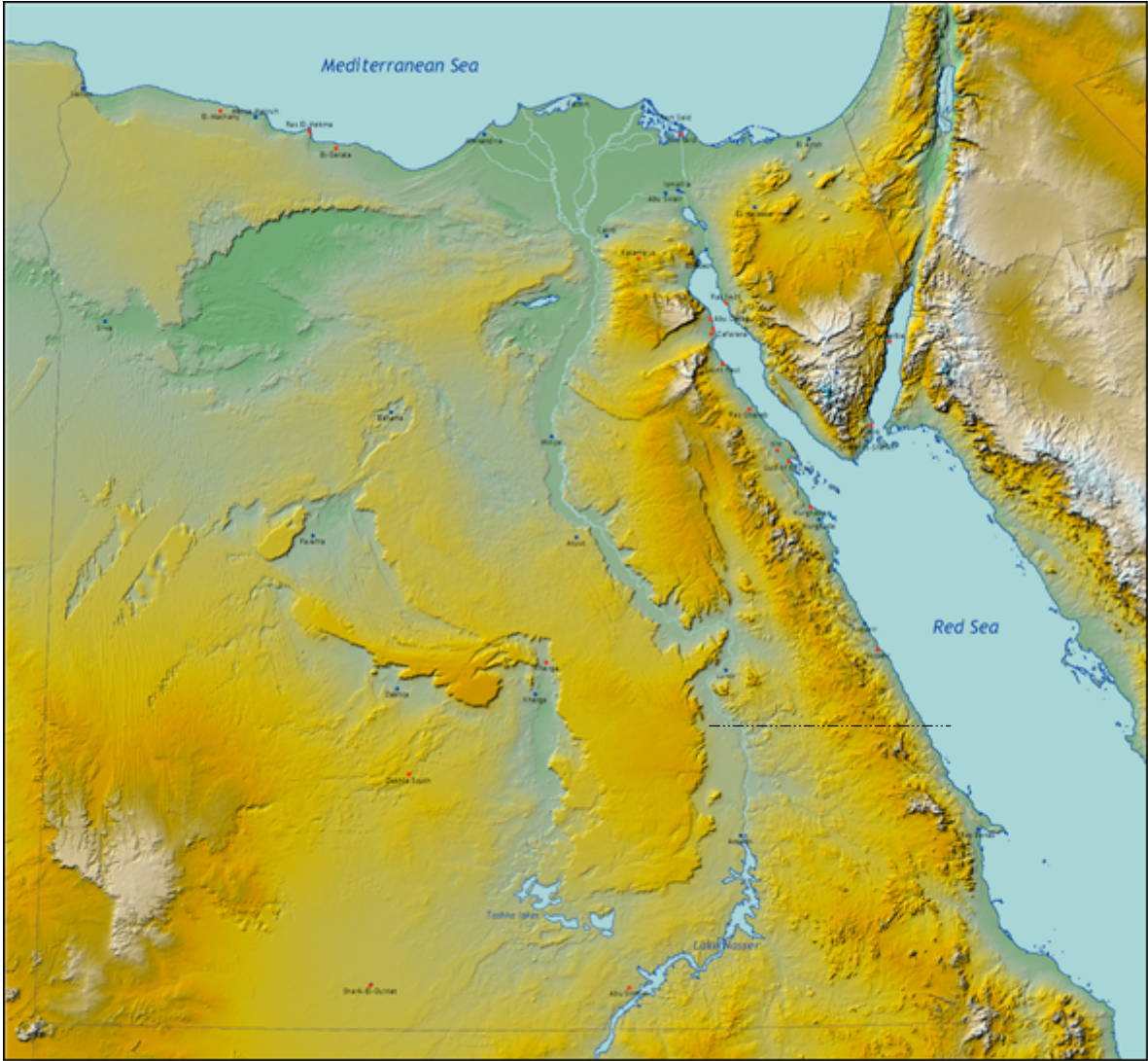


Figure 1: Physical Map of Egypt

Source: Wind Atlases of the World (2006).

# 1 Introduction

Only few African CDM projects have been registered to date: as of August 2006, there were only five projects in Africa, whereas in Latin America and the Caribbean there were 145 and in the Asia-Pacific region 150 (UNFCCC 2006). Against the backdrop of the upcoming climate change conference in Nairobi in November, the Wuppertal Institute is currently examining how African countries have prepared for the CDM in order to identify the steps needed to improve Africa's future participation. As a first step, a survey was conducted to establish the status quo among climate policy institutions in African countries. This data along with that obtained in further enquiries is now being used to draw up detailed country profiles. The second step involves a comparison of the countries covered in the initial study to identify the general success factors that will allow and the barriers that could hinder accelerated development of the CDM in the region. Three CDM country profiles have been published so far: this one on Egypt, and two others on Morocco and Tunisia. Further information about the project is available online at [www.wupperinst.org/jiko](http://www.wupperinst.org/jiko).

## 2 Egypt: Key Data

Table 1: Selected Key Data – Egypt and Germany in Comparison

| Indicator   | Egypt                    | Germany                |
|---|--------------------------|------------------------|
| Total population (millions, 2003)                                   | 71.3                     | 82.6                   |
| Annual population growth rate (% , 1975-2003)                       | 2.1                      | 0.2                    |
| Surface area (thousand sq. km)                                      | 1,001                    | 357                    |
| Population density (people per sq. km, 2003)                        | 68                       | 237                    |
| Rural population (% of total, 2003)                                 | 57                       | 12                     |
| Adult literacy rate (% , 2003)                                      | 55.6                     | 99.0                   |
| Population below the poverty line 95-96 (%)                         |                          |                        |
| - Rural population  | 23.3                     | N/A.                   |
| - Urban population  | 22.5                     | N/A.                   |
| - Total   | 22.9                     | N/A.                   |
| Population below US\$2 a day (% , 1999-2000)                        | 43.9                     | N/A.                   |
| GDP at PPP (US\$ billions, 2003)                                    | 266.9                    | 2,291.0                |
| GDP per capita (2003)   | 3,950                    | 27,756                 |
| Annual growth rate GDP (in % , 1990-2003)                           | 2.5                      | 1.3                    |
| GINI Index  | 34.4 (1999/2000)         | 28.3 (2000)            |
| Human Development Index (2003)                                      | 0.659; Rank 119          | 0.930; Rank 20         |
|   | Medium Human Development | High Human Development |
| Corruption Perception Index (2005) (Rank/CPI score)                 | 70/3.4                   | 16/8.2                 |
| Priorities in public spending (% of GDP):                           |                          |                        |
| - Public expenditure on education                                   | 3.9 (1990)               | 4.6 (2000-2002)        |
| - Public expenditure on health (2002)                               | 1.8                      | 8.6                    |
| - Military expenditure (2003)                                       | 2.6                      | 1.4                    |
| Foreign direct investment (US\$ million, 2003) (1990)               | 237 (734)                | 11,267 (3,005)         |
| Foreign direct investment (% of GDP) (2003)                         | 0.3                      | 0.5                    |
| Official development assistance (ODA) received (US\$ million, 2003) | 893.8                    | -                      |
| ODA as % of GDP 2003 (1990)   | 1.1 (12.6)               | -                      |

Source: World Bank 2005; UNDP 2005, Transparency International 2006

### **3 Political and Economic Climate**

The Arab Republic of Egypt has been a presidential republic since 1953 and has been governed by President Hosni Mubarak, head of the ruling National Democratic Party, since 1981. He was re-elected for the fifth time in Egypt's first multi-candidate presidential election in 2005 (European Commission, 2005). Although Egypt fulfils the major requirements of a democratic system, notably a multi-party system and the ratification of most UN human rights conventions, it still attracts criticism – especially with regard to the state of emergency which has been in force almost without interruption since 1967. Among other things, this permits the government to prohibit demonstrations or strikes and to censor or close down newspapers in the name of national security (Human Rights Watch 2003).

Egypt's economy has seen an upward swing since 2003 and onlookers believe the reform-focused policies of Prime Minister Nazif's government will pave the way for further positive development (Auswärtiges Amt 2006). The reforms mainly concentrate on switching from a highly centralised economy to a liberalised market, e.g. by dint of reduced energy subsidies, reduced personal and corporate tax rates, and the privatisation of several enterprises (CIA 2006). Egypt has been commended by UNDP for the foreign direct investment-friendly climate which it creates through the use of legal and financial incentives for foreign businesses. The aim of these incentives is to give Arab producers access to vertically integrated companies and processes and so to help counter the developing world problem of limited access to knowledge and technology (UNDP 2003: 98).

Egypt is an important partner for the European Union (EU). An association agreement has been in place between the EU and Egypt since 2004. Providing a comprehensive framework for the political, economic and social dimensions of this relationship, its main objective is to establish a free trade area within twelve years in order to increase economic growth (EC 2005).

The EU is Egypt's biggest trading partner, with trade volumes of 11.6 billion euros as of 2004 and rising. Among Egyptian exports, energy is the most important commodity (39%), followed by textiles and clothing (15%) and agricultural products (9%). Egypt's trade deficit

places considerable pressure on the Egyptian pound (EC 2005). Increasing the trade volume, for example in the energy sector, could help rectify this imbalance.<sup>1</sup>

**Economic relations between Egypt and Germany:** After Saudi-Arabia and the United Arab Emirates, Egypt is Germany's third most important trading partner in the Middle East. The German-Arab Chamber of Industry and Commerce has been located in Cairo for more than 50 years. The German Office for Foreign Trade (bfai) also has an office there. In cooperation with these two agencies, the German embassy performs sector analyses, reports on the economic climate in Egypt and helps German businesses get in contact with public authorities (Auswärtiges Amt 2006a).

Apart from its economic relations with Egypt, Germany also established its first university abroad there: the German University Cairo (GUC) focuses on education in high technologies like biotechnology.

Given its impact on the entire region, Egypt is seen as an anchor country in German development cooperation, which centres on environmental issues like the promotion of renewable energy and waste management (Auswärtiges Amt 2006a).

## 4 Egypt and the CDM

Table 2: Key Emissions Data, Egypt and Germany in Comparison

| <b>Emission key data</b>   | <b>Egypt</b> | <b>Germany</b> |
|--|--------------|----------------|
| CO <sub>2</sub> emissions (million t CO <sub>2</sub> , 2003) (IEA sectoral analysis) | 122.22       | 854.29         |
| - change 1990-2003 (%) -   | 55.6         | - 11.6         |
| CO <sub>2</sub> emissions per capita (t CO <sub>2</sub> , 2003)                      | 1.81         | 10.35          |
| CO <sub>2</sub> /TPES in 2003 (t CO <sub>2</sub> per TJ)                             | 55.76        | 58.78          |
| - change 1990-2003 (%) -   | -5.2         | -9.3           |

Source: IEA 2005.

<sup>1</sup> In the coming years, a Mediterranean Power Pool is to be created which will connect the electricity grids in North Africa, Spain, Turkey and the Middle East.

Table 3: Milestones in Egyptian Climate Policy

| Milestones in Egyptian Climate Policy                           | Date            |
|---|-----------------|
| ▪ Ratification of the UN Framework Convention on Climate Change | 5 December 1994 |
| ▪ Ratification of the Kyoto Protocol                            | 12 January 2005 |
| ▪ Initial National Communication                                | June 1999       |
| ▪ Establishment of the CDM-DNA                                  | 14 March 2005   |

Source: <http://unfccc.int>, <http://www.cdmegypt.org/>.

Egypt is highly vulnerable to the effects of climate change. Seeing climate change as a threat to its future development in various economic sectors like agriculture and water management, Egypt signed the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 and ratified it in December 1994. The ratification also marks the starting point in Egypt's national climate policy: in 1995, the Egyptian Environmental Affairs Agency (EEAA) launched two major programmes to address climate change. These provided the basis for the First National Communication and for the National Action Plan on Climate Change in 1999.

The establishment of the CDM Designated National Authority (DNA) was finalised on 14 March 14 2005 by decree of the Minister of State for Environmental Affairs (Ministerial Decree No. 42 of 14/3/05). Egypt's efforts to set up a CDM structure date back to as early as 2000, when Egypt participated in the National Strategy Studies (NSS) Program launched by the World Bank and the Government of Switzerland. The National Strategy was followed by the UNEP-led Capacity Development for the CDM project aimed at enhancing Egypt's technical and institutional CDM capacity (see <http://www.cd4cdm.org>). These activities formed the basis for subsequent establishment of the DNA.

#### 4.1. CDM Potential

CDM perspectives and opportunities were studied as part of the Capacity Development for the CDM project (MSEA 2004). The various CDM projects proposed as a result are mainly in the energy and agricultural sectors. These include areas such as cogeneration, improved combustion processes and solid waste management. Egypt also has huge renewable energy sources, particularly as regards wind energy (the Red Sea region is one of the world's most favourable areas in terms of wind resources), solar energy and, to a lesser extent, biomass and

hydropower (JIQ 2005: 4). Huge potential is also seen in N<sub>2</sub>O, CFC and HFC abatement, waste management, fuel switching, energy efficiency and afforestation (Egypt 2005).

## **4.2. DNA Structure**

The Egyptian DNA, illustrated in Appendix 1, was established in March 2005 as a two-body unit composed of an Egyptian Council for CDM (EC-CDM) and an Egyptian Bureau for CDM (EB-CDM).

The *Egyptian Council for CDM* is headed by the Minister of State for Environmental Affairs and is composed of 13 permanent members who represent all related government departments, private businesses and non-governmental organisations. At national level, the Council is responsible for implementation of the CDM process, e.g. it suggests legislation to the government, establishes project proposal guidelines, develops project evaluation criteria and procedures and approves projects. At international level, the EC-CDM is the counterpart to the CDM Executive Board and the point of contact for CDM stakeholders. Its members participate in international policy debates and UNFCCC negotiations and report the outcomes to the Egyptian authorities. Council meetings are held on a quarterly basis but can be assembled *ad hoc* on any relevant and urgent issue.

The *Egyptian Bureau for CDM* acts as the Council's permanent secretariat and is headed by the EEAA CEO. It comprises five representatives from the Ministry of State for Environmental Affairs, one from the Ministry of Electricity and Energy and one from the Ministry of Industry and Foreign Trade. The Bureau is responsible for monitoring projects throughout their life cycle, maintaining relations with the CDM Executive Board and organising EC-CDM meetings.

Table 4: Responsibilities of the Egyptian DNA

| Name                          | Function  | Address   |
|-------------------------------|---|---|
| Dr. El-Sayed Sabry<br>MANSOUR | Climate Change Unit (CCU) Manager<br>Egyptian DNA Coordinator<br>UNFCCC Focal Point | 30 Misr Helwan El-Zyrae Rd., Maadi – Cairo –<br>Egypt<br>P.O. Box 11728<br>Tel/Fax 2-02-817-38-92<br>E-mail: <a href="mailto:esmansour@eeaa.gov.eg">esmansour@eeaa.gov.eg</a> |
| Mr. Samir<br>TANTAWI          | Environment Researcher<br>Climate Change Unit                                       | E-mail: <a href="mailto:samir_tantawi@hotmail.com">samir_tantawi@hotmail.com</a>  |

### 4.3. Project Evaluation and Approval Procedures

Egypt's DNA has established a two-step procedure (see Annex 2) to evaluate and approve project proposals and ensure that proposed projects satisfy the two elementary UNFCCC criteria of additionality and sustainable development. A project profile template can be downloaded from the Egyptian CDM website at [www.cdmegypt.com](http://www.cdmegypt.com).

In the first step, the EB-CDM evaluates the required Project Idea Note (PIN) for conformity of a proposed project with international requirements and national sustainable development criteria. Based on the results of this check, the EB-CDM consults the EC-CDM, which issues either a “note of interest” or a negative response within two weeks of PIN submission. The aim of this preliminary evaluation is to provide a clear indication at an early stage in project preparation of whether a project might be acceptable as a CDM project. Upon receiving a positive evaluation, project proponents have to submit a detailed Project Design Document (PDD) based on the templates provided by the CDM Executive Board for in-depth evaluation. A core part of this evaluation is the sustainability assessment during which the benefits of a project for Egypt's sustainable development are assessed according to a set of environmental, social and economic criteria (MSEA 2004).

Project proponents receive a response from the EB-CDM within four weeks of the PDD being submitted. Projects that have been positively evaluated receive a letter of approval confirming Egypt's voluntary participation in the CDM activity and the project's contribution to sustainable development.

#### 4.4. Project Portfolio

Egypt's existing CDM project portfolio comprises 24 projects. The portfolio is well balanced given the number of different project types and categories (see Table 6). Most projects are listed in the renewable energy, fuel switching and energy efficiency categories, with six projects in each. The balance alters, however, once the anticipated annual CERs of specific projects are compared. The current project portfolio has an overall CER volume of about 4.7 million t CO<sub>2</sub>e per year. More than 60% of these CERs will be generated in four N<sub>2</sub>O emissions abatement projects (all in the industry category).

Table 5: CDM Project Portfolio in Egypt

| Project Category  | Number of Projects | of Annual CERs (1000 t CO <sub>2</sub> e) | Remarks   |
|-------------------|--------------------|---|---|
| Renewable energy  | 6                  | 825.2                                     | 1 at validation   |
| Industry          | 4                  | 2,900.0                                   | 1 registration requested; all projects N <sub>2</sub> O abatement |
| Energy efficiency | 6                  | 101.4                                     |   |
| Fuel switching    | 6                  | 446.9                                     | 1 at validation   |
| Waste management  | 1                  | 400.0                                     | Registration requested  |
| Afforestation     | 1                  | 100.0                                     |   |
| Total             | 24                 | 4,773.5                                   | 9 small-scale projects  |

Source: EEAA 2005; <http://www.cdmegypt.org>; UNEP Risoe (2006)

Two CDM projects currently await registration and two others are at the validation stage (UNEP Risoe 2006).

The first project awaiting registration is the Onyx Alexandria Landfill Gas Capture and Flaring project which includes two recently constructed municipal waste landfills in Alexandria. These are part of the global waste management system initiated by the Alexandria Governorate, with an annual estimated average of 371,526 t CO<sub>2</sub>e. The aim of the project is to maximise capture of landfill gas (LFG) and to reduce fugitive emissions of methane. Greenhouse gas reduction will result from combustion of the recovered methane contained in the landfill gas; the crediting period runs from 2006-2016 (SGS 2006).

The second project awaiting registration is a catalytic N<sub>2</sub>O destruction project targeting the tail gases of a nitric acid plant belonging to the Abu Quir Fertilizer Co. The objective of this

project is to almost eliminate N<sub>2</sub>O emissions at the Abu Qir II nitric acid plant.<sup>2</sup> Its implementation will lead to an estimated reduction of 1.18 million t CO<sub>2</sub>e per year. The crediting period will run for seven years (TÜV Süd 2006).

The first project at the validation stage is the Zafarana Wind Power Plant Project (120 MW) which will generate credits from 1 September 2007. The project has a minimum plant operating life of 20 years and is expected to cut about 254,485 t CO<sub>2</sub>e annually in the initial 7-year crediting period (Japan Bank for International Cooperation 2006).

The second project at the validation stage is the Al-Sindian 13 MW Natural Gas Based Cogeneration Package Project, a combined heat and power project in Cairo. The proposed project involves the installation of a package cogeneration system which would consume natural gas and produce electricity and heat for the Al-Sindian paper mill. Project implementation would lead to an estimated reduction of 25,629 t CO<sub>2</sub>e per year (DNV 2006).

#### **4.5. Barriers**

Barriers that hinder implementation of CDM projects in Egypt include (Egypt 2005):

- Lack of funding
- Lack of capacity
- Lack of transparency in the carbon market, especially as regards prices
- Competition with other developing countries like China, India and Brazil
- Difficulty in achieving eligibility for some CDM projects due to confusion as to the meaning of additionality

Ways that have been proposed to overcome these obstacles include:

- Promoting the CDM in international forums, expos and events
- Organising a training programme to improve the skills of members of the Egyptian Bureau for CDM
- Direct lines to carbon markets to follow up changes

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<sup>2</sup> The aim is to reduce 98% of the emissions that would be emitted without the project activity.

Egypt has already begun to deal with these barriers. It presented its portfolio of 24 projects at the Carbon Expo in Cologne in 2005 and in 2006. A series of workshops has also been held in Egypt to discuss the future of the CDM.

## **5 Conclusion**

Egypt's climate policy has been subject to ongoing revision since its initial implementation in 1994. Commencing with the ratification of the UNFCCC in December 1994 and continuing with the signing of the Kyoto Protocol in 1999, ratification of the Protocol and the establishment of the DNA in 2005, Egypt has built a framework for effective policy. It is one of the more advanced CDM host countries and currently has 24 projects in the pipeline. Participation in international programmes like CD4CDM helped to develop institutional and personal capacities for the CDM. Preparing the National Strategic Study served to inform and train both experts and decision-makers involved in CDM issues, and also helped identify significant potential for CDM projects.

Despite the various capacity-building activities, CDM implementation in Egypt is still hampered by a lack of capacity. Further key barriers are lack of funding and the lack of transparency in the carbon market in general. Egypt is, however, taking steps to address these barriers. The opening up of the hitherto centralised economy, the growing importance of Egypt's relations with the European Union and the prospect of a free trade area will no doubt also serve to improve investment opportunities for foreign investors.

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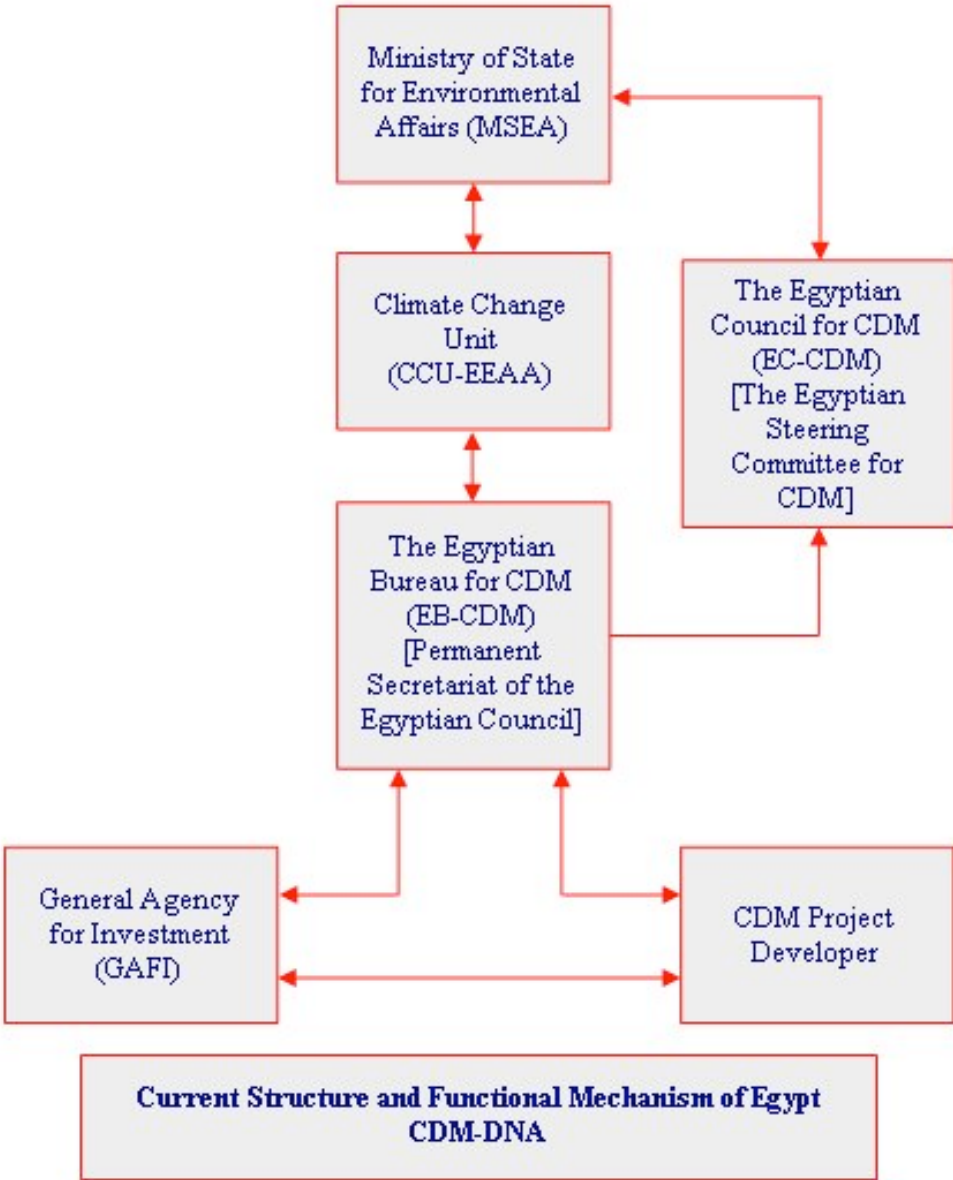
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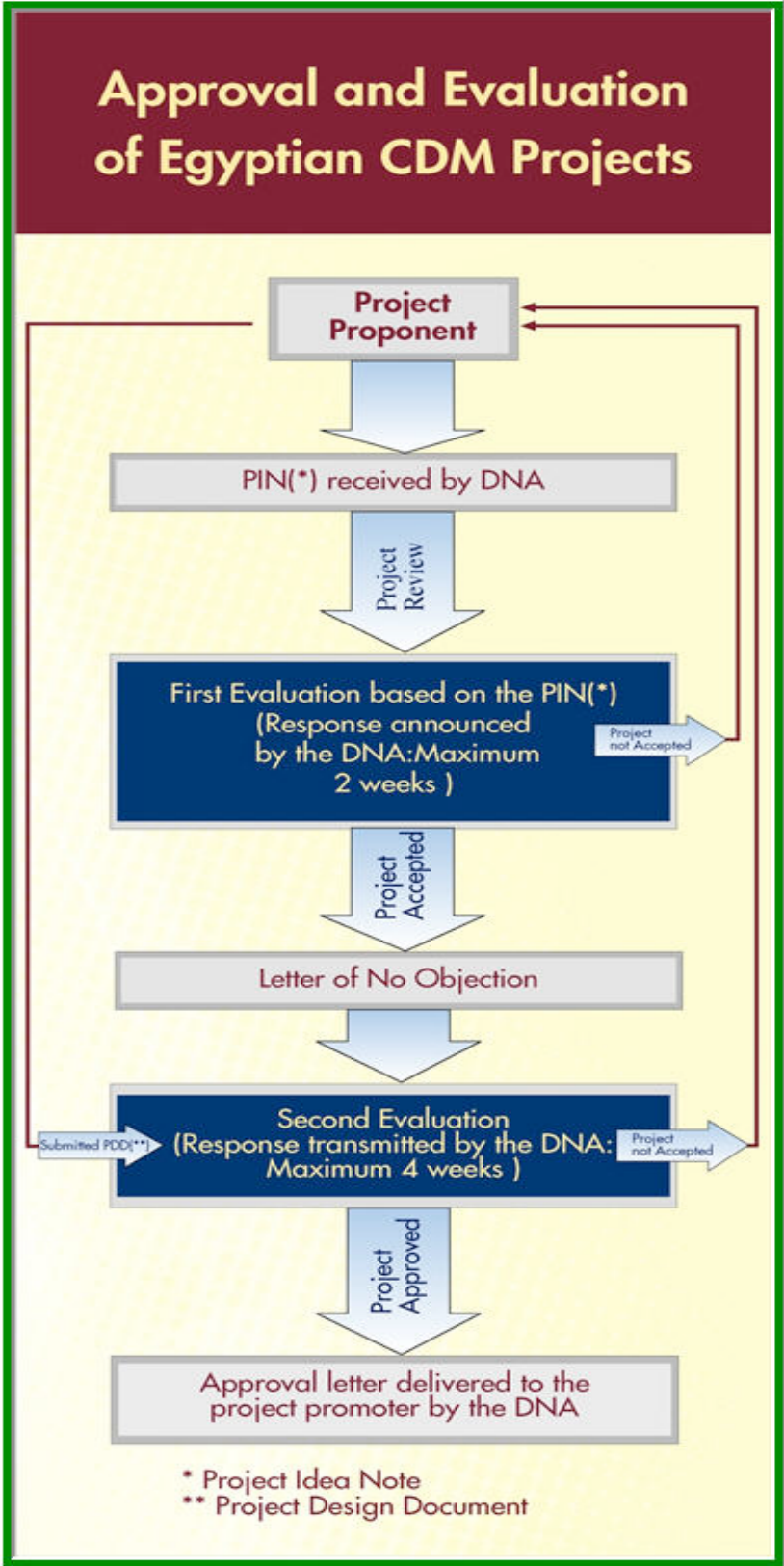
# Annex

## Annex 1: Structure of the Egyptian DNA



Source: CDM Egypt, <http://www.cdmegypt.org/>

**Annex 2: Project Evaluation and Approval Procedure**



Source: [http://www.cdmegypt.org/PA\\_Chart.JPG](http://www.cdmegypt.org/PA_Chart.JPG)