

## 3 Climate Change

### Introduction

Climate change is different from most of the other environmental problems. It acquires a universal dimension as it transcends countries national boundaries and constitutes a threat to the entire world. successive increase in surface air temperature has been confirmed worldwide. Over the past 100 years, the universal average of surface air Temperature progressively increased by 0.3 – 0.6°C. IPCC studies concluded that an increase would, if the situation remained unchanged, lead to serious problems, such as sea water level rise bearing the threat of low laying areas getting drowned. It would also affect fresh water resources and crop production it asserts the spread of much diseases such as malaria.

Although the quantities of greenhouse gases in Egypt accounted for only 0.57% of the world's total emissions,table(3-1), Egypt is considered as one of the most vul-

nerable countries to climate change impacts.

**Table (3-1) Quantity of Green – house Gas Emissions in Egypt.**

Year	Quantity, million tans equivalent of CO <sub>2</sub>	Ratio to the Rest of the World
1990/91 <sup>(1)</sup>	107	0.4%
2004/05 <sup>(2)</sup>	150	0.55%
2005/06 <sup>(3)</sup>	152	0.57%

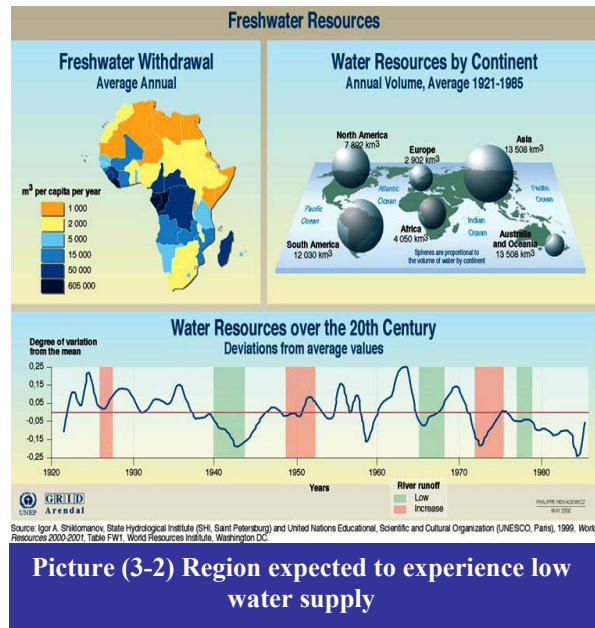
### Threats Facing Egypt Due to Changes in Climate

Referring to IPCC's TAR (Third Annual Report), published in 2001, threats that Egypt may encounter from climate changes can be summarized in the following:

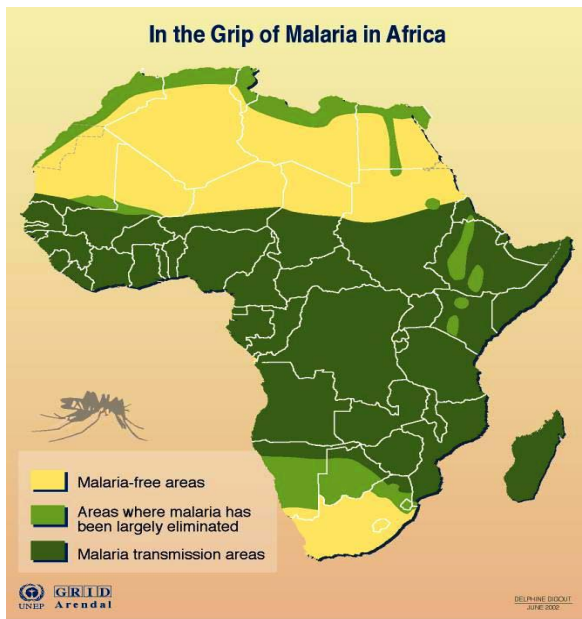
1. Sea water level rise (studies supervised by EEAA's climate change unit) concluded that various areas of the Delta

*Climate Change*

- are vulnerable to drowning, thus threatening the loss of inhabited and fertile crop lands.
- Nile Water has lately experienced shortage which may further get escalated due to imbalance in the distribution of precipitation belts volumetrically and spatially.
  - Various scenarios presume a potential decrease in the national output of food grains, let alone the negative impact of high temperature of the Red Sea water which leads to the bleaching of coral reefs.



**Picture (3-2) Region expected to experience low water supply**



**Picture (3-1) Regions Expected to be in the Grip of Malaria, including Egypt<sup>(8)</sup>**

**Egypt's Vis-à-vis Climate Change Issue**

**1- International Conferences & Workshops**

In view of the serious impact of climate changes on all aspects of life in Egypt, it is inevitable to monitor such changes regularly and to actively participate in relevant international forums. Egypt played a major role in the pertinent international events, with particular reference to the following events:

- Eleventh Meeting of signatories to the UN Framework Convention (COP1) and the 1<sup>st</sup> meeting of the signatory parties to Kyoto Protocol (MOP1), held in Montreal, to cope with the latest developments, including project support and funding, and to prevent imposing any additional obligations. The Egyptian delegation acted in accordance with the following principles:
  - Continue to coordinate and cooperate with the Group of 77, China and the African Group; and support

- their attitudes in harmony with national interests.
- (2) Underscore the need to request the industrialized countries to fulfill their commitments enunciated in the Climate Change Convention; in particular providing assistance to the developing countries through technology transfer, capacity-building and the necessary funding to minimize possible harms of climate changes.
  - (3) Confirm non-acceptance of any mechanism that dictates new obligations for the developing countries.
  - (4) Stress the need to enforce para-3 of Article (2) of the Convention concerning the Negative Impact of Response Measures.
  - (5) Promote the development and utilization of CO<sub>2</sub> absorption technologies.
  - (6) Invite the international community to meet its obligations towards the developing countries, including Egypt, in relation to:
    - (a) Providing financial and technical support to develop research and institutional capabilities in the field of climate change.
    - (b) Assessing environmental and economic impacts of possible climate changes in Egypt, and assisting in the implementation of measures of adjustment to those impacts.
    - (c) Facilitating and supporting collaborative research projects with the developed countries on how to address climate changes and minimize their impact.
  - b. Training workshop for the African Group on the assessment of and adjustment to climate change risks.
  - c. Meetings of the branch institutions to implement SBI and the scientific and technical consultation SBSTA.
  - d. Workshop on scenarios of emissions organized by IPCC.
  - e. International training workshop on the assessment of climate change mitigation.
  - f. The 24<sup>th</sup> meeting of IPCC.
  - g. Meetings of the Mediterranean region within the Earth's surveillance system.

## 2- Projects

- a. Finalizing phase-1 of the second national notification project report, involving large number of economic sectors (e.g. energy, agriculture communication, health, water resources, coastal areas and industry).
- b. Completing phase-1 of a project for solar energy utilization in tourist sites and the new land villages, in collaboration with the Italian side.
- c. Participating in a project for evaluating national capabilities concerning the synergies of the three pertinent UN Conventions (Climate change, Desertification and Biodiversity) with Ministry of Agriculture and land Reclamation. The project is aimed to promote coordination between the Ministries regarding the three agreements, identification of weaknesses and addressing them while enhancing interaction among the three conventions.
- d. Completing CD4CDM (capacity development for clean development Mecha-

nism), being implemented with the support of el-Tibbeen Metallurgic Industries Institute:

- (1) The project's purpose was to design a mechanism for clean development, under implementation in Egypt.
  - (2) It includes drafting project proposals for submission to developed countries backing this mechanism in the developing countries, with the aim of purchasing their quotas of greenhouse gases.
  - (3) It contributes to developing the capacities of an Egyptian expert panel.
  - (4) It sponsors training and orientation workshops to promote the clean development mechanism.
  - (5) It assists in the establishment of the Egyptian Board and Bureau for Clean Development.
  - (6) It facilitates the design and launching of a website to promote clean development projects in Egypt.
- e. Completing the energy efficiency improvement project, being implemented at the Ministry of Electricity and Energy. The project is slated to reduce power waste during production, distribution and transfer processes via networks. It also seeks to manage demand for electricity, set standards to measure rational use of energy and place the efficiency logo on electric appliances meeting those standards. Construction rules are defined for buildings that rationalize power use. Foundations are laid for definitions and legal agreements which promote genuine reduction of greenhouse gases through demand management policies, energy conservation activities and creation of an appropriate environment for introducing energy-

- rationalizing machinery and techniques.
- f. Proceeding with the small grant program within the GEF, being implemented by an NGO. The program provides financial support to the activities of community – based organizations dealing with local problems of particular significance to the Facility, including mitigation of climate change.
  - g. Following-up on the proposed research project for the production of Bio-fuel from *Jatropha italics curcas*, enzyme extraction and ethyl esterization, in collaboration with the Italian side.

## Clean Development Mechanism

### 1- Institutional Building

- a. Egypt ratified the Kyoto Protocol on 12/1/2005 and it entered into force on 12/4/2005 .
- b. The National Committee for CDM was created:
  - (1) The Egyptian CDM Board, with its premises at MSEA, was established by Ministerial Decree No. 42/2005. The Board consists of 15 members representing high-level officials from 10 ministries in addition to NGOs. It is the policy-making body for clean development in Egypt. It also approves and adopts projects which fulfill requirements of sustainable development. In 2005, the Board held three meetings.
  - (2) The Egyptian CDM Bureau, with its premises at MSEA, was established by Ministerial Decree No.45/2005. It is composed of 9 technocrats representing three Ministries. The Bureau is the scientific and executive arm of the National

Committee for CDM. It receives and reviews the files of projects submitted for approval by confirming their compliance with sustainable development requirements. Among other things, its mandate includes coordination with competent agencies for promoting the Mechanism and building national capabilities in this respect. It also coordinates with foreign investors in areas relating to CDM. In 2005, the Bureau held seven meetings.

## 2- Projects

Seven CDM-related projects were approved. Letters of final approval have been issued. With total investments of about U.S. \$750 million, those projects are expected to reduce greenhouse gases (GHGs) by 3.5 million tons equivalent of CO<sub>2</sub>. The projects cover such areas as electricity generation from wind energy, fertilizer industry with reduced emissions of Nitrose oxide, power generation from water falls and conversion from the use of liquid petroleum fuels to natural gas of cement factories. Within CDM, the validity of those projects continues for 21 years.

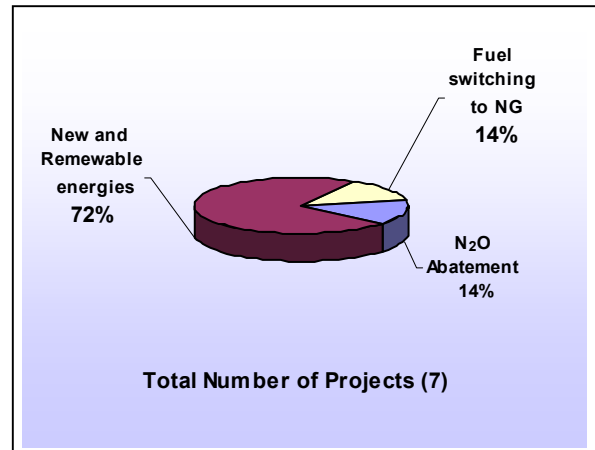


Figure (3-1) Situation Analysis of CDM Projects in 2005

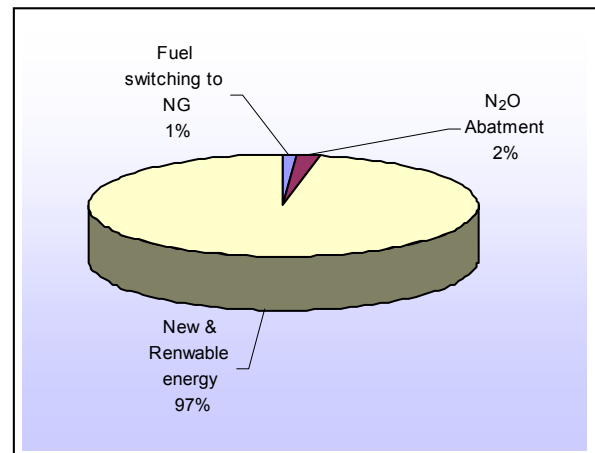


Figure (3-2) Total Project Investments (US\$ 750 million)

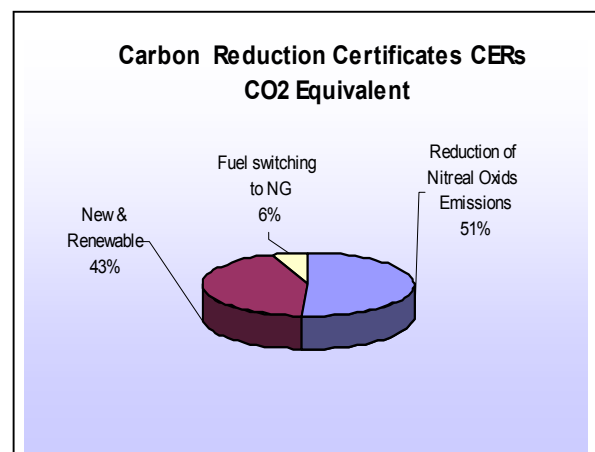
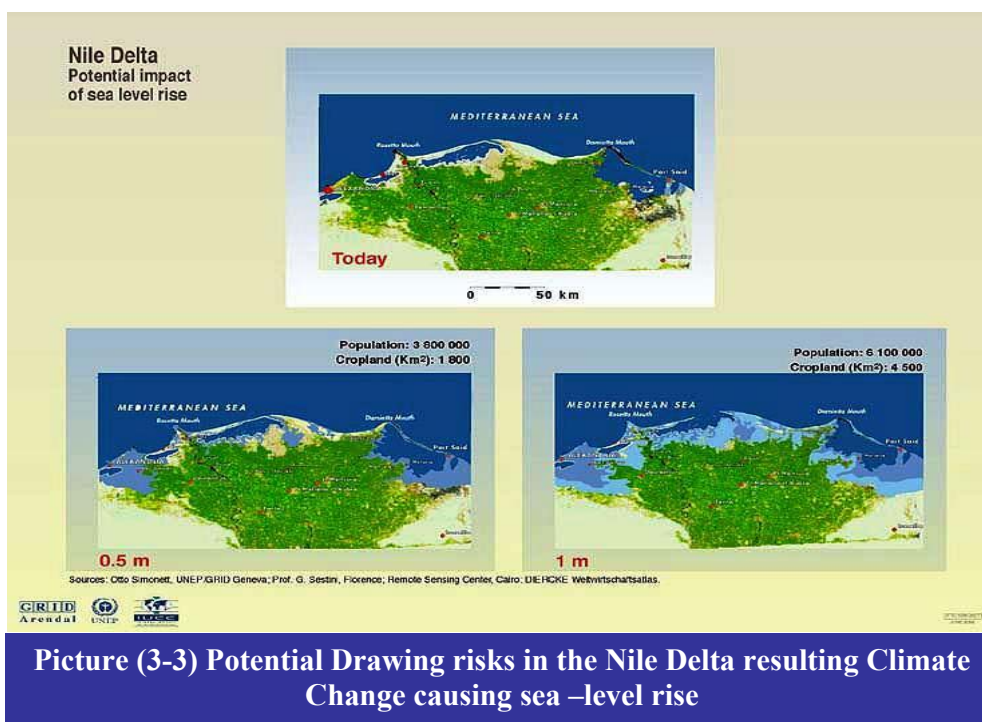


Figure (3-3) Situation Analysis of CDM Projects in 2005



### 3- Capacity Building

#### A. At the National Level

- (1) Creating an official website for CDM in Egypt. The site provides useful information to the investors and other stakeholders. Since its launching in the second half of 2005, it has been visited by 3600 users.
- (2) Presentations on CDM were organized, covering such topics as project registration with CDM Bureau. Three national workshops were attended by 250 participants representing various agencies concerned with CDM projects (environment waste, energy, agriculture, investment, banks, petroleum and industry).
- (3) Presentations were made during 5 national, sector-specific workshops on CDM and steps of project registration (namely investment,

banking, petroleum fertilizers and industry).

#### B. At the Regional Level

- (1) Participating in regional workshops on CD4CDM to develop capabilities of the Egyptian researchers in the various areas of the mechanism.
- (2) Organizing lectures on CDM during the "Climate Change and Industry Forum", held within MSEA's celebrations on the World Environment Day (June 5<sup>th</sup> 2005).
- (3) Participating in the World Forum on CDM in the Mediterranean Basin and North African Countries, held in Tunisia within CD4 CDM.
- (4) Taking part in OAPEC meetings held in Cairo.

#### C. At the International Level

- (1) Participating in the meetings of Francophone Countries to promote

CDM activities and exchange experience among member states, which meetings were held in Montreal – Canada.

- (2) Taking part in the World Carbon Forum and Exhibition held in Cologne- Germany.

### Future Vision 2007 - 2012

1. Finalizing the Second National Notification Report to UN Framework Convention on Climate Change. The report presents the findings of a survey of GHGs emitted from the various sectors. It also identifies the latest developments in climate change as far as their sector-specific impacts and related scientific researches conducted in Egypt are concerned. Likewise, the report identifies approaches to mitigation and adaptation to the impact of climate change. It presents an overview of efforts made in fields such as education, information, public awareness-raising, institutional building and capacity development in relation to climate changes; and incorporation of relevant action plans into the State's general plan.
2. Designing a regional simulation model for the Nile Basin countries to forecast long term the future situation of fresh water availability.
3. Implementing projects to evaluate potential risks of climate change in Egypt.
4. Implementing projects for adaptation to climate changes that are expected to negatively affect various sectors in Egypt.
5. Implementing pilot projects to mitigate GHG emissions, with a view to promoting the use of clean energy technologies such as solar energy and bio-fuel.
6. Promoting the largest possible number of projects under CDM umbrella, in view of their substantial benefit to sustainable development in different sectors in Egypt.
7. Strengthening the role of the National Committee for Climate Changes to actively participate in the related Convention meetings (e.g. UNFCCC and Kyoto Protocol), through: a) Presenting relevant proposals, b) Participating in negotiating committees; and c) highlighting issues of particular concern to Egypt with regard to securing project funding from such sources as the Fund For Adaptation Projects, the Five Year Program of Action and the Fund for Climate Change Projects without adding any future obligations in this concern.

## References

### Reports:

- (1) Initial National Communication the GHGs Survey Egypt completed in 1999, which relied on data available for 1990/1991.
- (2) (World Resource Institute (WRI) database, international estimates, Washington, 2006), Egypt will update its Survey in the coming 3 years.
- (3) The 1<sup>st</sup> National Notification Report, 1999
- (4) The Scientific Studies Report, IPCC, 2001.
- (5) Impact, Vulnerability and Adaptation Studies, IPCC Report, 2001.
- (6) Report on "Policies To be Pursued for Mitigation of Harms" IPCC 2001

### Studies:

- (7) El-Raey, M.: Vulnerability Assessment of the Coastal Zone of Egypt: Impact of Sea Level Rise, 2002.

### Websites:

- (8) Grid-Arendal's D-base, UNEP.
- (9) WRI's D-base, Washington, U.S.A.